



REQUEST FOR CEO ENDORSEMENT

PROJECT TYPE: FULL-SIZED PROJECT

TYPE OF TRUST FUND: GEF TRUST FUND

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PART I: PROJECT INFORMATION

Project Title: Implementation of the POPs Monitoring Plan in the Asian Region			
Country(ies):	Cambodia, Indonesia, Lao PDR, Mongolia, Philippines, Thailand, Vietnam	GEF Project ID: ¹	4894
GEF Agency(ies):	UNEP	GEF Agency Project ID:	00528
Other Executing Partner(s):	UNEP/DTIE Chemicals	Submission Date:	
GEF Focal Area (s):	CHEM-1 (?)	Project Duration(Months)	48
Name of Parent Program (if applicable):		Project Agency Fee (\$):	373,920

A. FOCAL AREA STRATEGY FRAMEWORK²

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Grant Amount (\$)	Cofinancing (\$)
CHEM-1	Outcome 5: Country capacity built to effectively phase out and reduce releases of POPs	Output 5.1: Countries receiving GEF support to build capacity for the implementation of the Stockholm Convention	GEFTF	3,481,000	12,809,083
(select)	(select)		(select)		
Sub-Total				3,481,000	12,809,083
Project Management Cost			GEFTF	385,000	305,817
Project Evaluation Cost			GEFTF	70,000	50,000
Total project costs				3,936,000	13,164,900

B. PROJECT FRAMEWORK

Project Objective: To strengthen the capacity for implementation of the updated POPs Global Monitoring Plan (GMP) and to create the conditions for sustainable monitoring of POPs in the Asian Region

Project Component	Grant Type	Expected Outcomes	Expected Outputs	Trust Fund	Grant Amount (\$)	Confirmed Cofinancing (\$)
1. Securing conditions for successful project implementation.	TA	Relevant stakeholders for project implementation in the Asian region are committed to carry out the agreed responsibilities.	Technical and administrative support provided for the implementation of the project and organization of process established in the Asian Region	GEFTF	253,000	307,567
2. Capacity building and data generation on	TA	Regional network and national capacity to	Training reports and sectoral reports on POPs	GEFTF	1,137,300	3,249,157

¹ Project ID number will be assigned by GEFSEC.

² Refer to the [Focal Area Results Framework and LDCF/SCCF Framework](#) when completing Table A.

analysis of core abiotic matrices (air and water).		carry out air and water sampling is enhanced in the Asian region, and high quality data is generated on the presence of initial and new POPs in the region.	analysis undertaken on two abiotic core matrices (i.e., air and water) in the Asian Region			
3. Capacity building and data generation on analysis of core biotic matrices (human milk).	TA	Regional network and national capacity to carry out human milk sampling is enhanced in the Asian region, and high quality data is generated on the presence of initial and new POPs in the region.	Training reports and sectoral report on POPs analysis undertaken on one biotic core matrix (6th round of human milk survey) in the Asian Region	GEFTF	793,450	6,963,073
4. Assessment of existing analytical capacities and reinforcement of national POPs monitoring.	TA	Accuracy of POPs assessment in the Asian region is consolidated by performance evaluation of national laboratories, as well as by analysis of additional matrices of major national interest.	Assessment report of existing analytical capacities prepared and report on POPs analysis undertaken in samples of national priority (other than core matrices) in the Asian Region	GEFTF	788,550	1,951,720
5. Securing conditions for sustainable POPs monitoring.	TA	Contribution to regional report for the GMP is performed, and a roadmap for sustainable POPs monitoring for the Asian region in global context is developed.	Assessment reports contributing to regional report for the GMP undertaken, and a roadmap for sustainable POPs monitoring developed for the Asian region	GEFTF	508,700	337,567
Subtotal					3,481,000	12,809,083
Project Management Cost ³				GEFTF	385,000	305,817
Project evaluation costs				GEFTF	70,000	50,000
Total project costs					3,936,000	13,164,900

C. SOURCES OF CONFIRMED COFINANCING FOR THE PROJECT BY SOURCE AND BY NAME (\$)

Please include letters confirming cofinancing for the project with this form

Sources of Co-financing	Name of Co-financier (source)	Type of Co-financing	Cofinancing Amount (\$)
National Government	Cambodia		682,900
	Indonesia		951,000
	Lao PDR		550,000

³ PMC should be charged proportionately to focal areas based on focal area project grant amount in Table D below.

	Mongolia		600,000
	Philippines		985,000
	Thailand		650,000
	Vietnam		1,800,000
GEF Agency	UNEP	In-kind	200,000
IGOs	Secretariat of the Basel, Rotterdam and Stockholm conventions	In-kind	270,000
	Secretariat of the Basel, Rotterdam and Stockholm conventions	Cash	25,000
	WHO	In-kind	0
Other/bilateral			
Academic institutions	CVUA Freiburg	In-kind	3,726,000
	NIES or JESC (Japan)	In-kind	530,000
	IVM VU Amsterdam	In-kind	TBD
	MTM Oerebro	In-kind	1,200,000
	Recetox/Stockholm Convention Regional Center, Czech Republic	In-kind	995,000
Total Co-financing			12,213,900

D. TRUST FUND RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY¹

GEF Agency	Type of Trust Fund	Focal Area	Country Name/ Global	(in \$)		
				Grant Amount (a)	Agency Fee (b) ²	Total c=a+b
UNEP	GEFTF	Persistent Organic Pollutants	Regional	3,936,000	373,920	4,309,920
Total Grant Resources				3,936,000	373,920	4,309,920

¹ In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table. PMC amount from Table B should be included proportionately to the focal area amount in this table.

² Indicate fees related to this project.

F. CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Grant Amount (\$)	Cofinancing (\$)	Project Total (\$)
International Consultants			0
National/Local Consultants			0

G. DOES THE PROJECT INCLUDE A "NON-GRANT" INSTRUMENT? (Select)

(If non-grant instruments are used, provide in Annex D an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF/NPIF Trust Fund). **N/A**

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN OF THE ORIGINAL PIF⁴

The project will achieve the same results as approved in the PIF. The project framework and structure described herein is, however, different to the original PIF. It should be noted that the changes are presentational and have been initiated in order to better group the related Outputs and Activities and so make project implementation and reporting easier and more coherent. The revised structure has been developed based on consultation with the UNEP Quality Assurance Section (QAS) in Nairobi and is compliant with UNEP internal results based management (RBM) practices. The related project logical framework / results matrix has been developed based on the current guidance from UNEP Quality Assurance Section (QAS) on the need for Outcome and Output descriptions which can have the necessary level of detail and also ensure that indicators are set at a level where impacts and results can be clearly reported. The changes to the structure related to this specific project are:

- All activities and outputs related to **abiotic core matrices** (air and water) have been grouped into component 2 which includes: strengthening the POPs labs for old and new POPs to analyse air and water samples (and other abiotic samples such as soil or sediment) including training and data generation for two years. The sampling scheme for air samples is detailed in Annex F, Table 5;
- All activities related to **biotic matrices** (human milk) have been grouped into component 3, which is executed in collaboration with WHO; e.g., strengthening the POPs labs for old and new POPs to analyse human milk samples (and other biota such as foodstuffs, fish) , including the training and the data generation for the next round of the UNEP/WHO breast milk survey;
- All quality control work such as the interlaboratory assessments (2 during 4 years) and the samples of national interest (as requested during COP-6) have been consolidated into component . This work is not direct implementation of the Stockholm Convention obligations but is response to country priorities.

It should also be noted that in addition to the PIF, the 23rd POP, hexabromocyclodecane will be included in all analysis.

The costs to the GEF Trust fund have not changed.

A.1 NATIONAL STRATEGIES AND PLANS OR REPORTS AND ASSESSMENTS UNDER RELEVANT CONVENTIONS, IF APPLICABLE, I.E. NAPAS, NAPS, NBSAPS, NATIONAL COMMUNICATIONS, TNAS, NCSA, NIPS, PRSPS, NPFE, BIENNIAL UPDATE REPORTS, ETC.

Countries participating in this project are all Parties to the Stockholm Convention and therefore committed to implement Article 16. All countries have also developed and submitted National Implementation Plans (NIPs), and have indicated the development of monitoring capacity as a component of their NIP.

Countries participating in this project have identified POPs monitoring as one of the NIP priorities. For example, **Cambodia** refers to it in chapter 2 (Implementation strategy and action plan). The Cambodia NIP also indicates the development of POPs monitoring guidelines as a national priority. **Indonesia's** NIP also highlights the importance of POPs monitoring and includes it as a specific activity in the action plans. **Lao PDR**, notes that POPs monitoring is a national priority and indicates that national efforts will be deployed to develop POPs monitoring guidelines. **Mongolia** aims at creating a POPs monitoring system (focusing on Dioxins and Furans) during NIP implementation. The

⁴ For questions A.1 –A.7 in Part II, if there are no changes since PIF and if not specifically requested in the review sheet at PIF stage, then no need to respond, please enter “NA” after the respective question.

Mongolian NIP also contemplates to build capacity for POPs analysis (laboratories) and to reinforce their regulatory elements concerning POPs monitoring. In the **Philippines**, the NIP indicates that “monitoring releases to the environment is a primary function of the Department of Environment and Natural Resources, through its Environmental Management Bureau”. Due to limited resources available, this activity is performed only on limited basis. Philippines also aims at designing and implementing a national programme on POPs monitoring. It wishes to participate in international studies and programmes. **Vietnam** POPs monitoring (global and regional) has been identified as one of the priorities in Vietnam’s NIP. Monitoring activities have taken place but with limitations due to the lack of funding.

The survey on POPs capacity analysis carried out under the NIP development process and other capacity building projects also show that all of the participating countries have been facing difficulties setting up the POP monitoring programme. Typically, participating countries lack the human resources, technical capacity, analytical skills and know-how. Regional cooperation is seen as a valuable approach in addressing these capacity gaps. This project will assist participating countries to overcome these difficulties and participate fully in the current GMP programme whilst aiding in the development of a long-term POPs monitoring plan that will include the newly added POPs. The Global GMP programme is carried out by the Secretariat of the Stockholm Convention and UNEP DTIE (Chemicals Branch)..

It should be noted that Thailand expressed growing interest in the GMP phase 2 project and finally decided to join.

A.2 GEF FOCAL AREA AND/OR FUND(S) STRATEGIES, ELIGIBILITY CRITERIA AND PRIORITIES.

The GEF is the principal (interim) financial mechanism of the Stockholm Convention and, as such, supports activities to meet its objectives. As reflected in Article 16 of the Convention, an important element for effective implementation of the convention is the availability of reliable information on POPs levels in humans and in the environment. Following the completion of the 1st Global Monitoring Report (UNEP/POPS/COP.4/33), the Conference of Parties requested in its decision SC-4/31 “*the financial mechanism of the Convention (...) to provide sufficient financial support to further step-by-step capacity enhancement (...) to sustain the new monitoring initiatives with provided data for the first monitoring report.*” As Parties to the Convention, the participating countries to this project are eligible for application of GEF funds to strengthen the monitoring capacity at national level and so to contribute with national data to the GMP.

The project is therefore in line with the GEF chemicals strategy’s objective 1: phase out POPs and reduce POPs releases.

A.3 THE GEF AGENCY’S COMPARATIVE ADVANTAGE:

UNEP’s mandate and comparative advantage is based on decisions of the Conference of the Parties to the Stockholm Convention and proven expertise such as being laid down in the most recent guidance document for the “Global Monitoring Plan for Persistent Organic Pollutants” as presented to the sixth meeting of the Conference of the Parties to the Stockholm Convention in April/May 2013 (document UNEP/POPS/COP.6/INF/31). Therein, the contribution from the United Nations Environment Programme (UNEP), Chemicals Branch of the Division of Technology, Economics and Industry (DTIE) is acknowledged for both, the initial guidance document prepared in 2007 and the most recent one, prepared in 2013.

The fifth thematic priority (Harmful Substances and Hazardous Waste) of the UNEP Mid-Term Strategy (MTS) has as its objective: *to minimize the impact of harmful substances and hazardous waste on the environment and human beings.* This MTS sets out the main areas of work of UNEP and is in line with UNEP’s comparative advantage in the GEF. The UNEP strategy for GEF V is based on the three pillars of MTS 2010-2013, which are described as follows:

a) That States and other stakeholders have increased capacities and financing to assess, manage and reduce risks to human health and the environment posed by chemicals and hazardous wastes;

b) That coherent international policy and technical advice is provided to States and other stakeholders for managing harmful chemicals and hazardous waste in an environmentally sound manner, including through better technology and best practices;

c) That appropriate policy and control systems for harmful substances of global concern are developed and in place in line with States' international obligations.

All GEF proposed interventions in GEF V, whether POPs, mercury, chemicals or ozone, are complementary to UNEP's Subprogram 5 (Harmful Substances and Hazardous Waste), executed by UNEP/DTIE OzonAction or Chemicals Branch, for the years 2010–2013. The Mid-Term Strategy for the years 2014-2017 has been approved and individual projects are presently under development. This GEF project will be placed under the Expected Accomplishment B of the (re-named) Subprogramme "chemicals and waste", which reads "Countries, including Major Groups and stakeholders, increasingly use the scientific and technical knowledge and tools needed to implement sound chemicals management and the related MEAs". Thus, continuous support for the project is ensured.

A.4 THE BASELINE PROJECT AND THE PROBLEM THAT IT SEEKS TO ADDRESS:

1. Global environmental problems, root causes and barriers that need to be addressed

Persistent organic pollutants (POPs) are a group of chemicals including those that had/have been widely used in agricultural and industrial practices and those unintentionally produced and released from many anthropogenic activities around the globe. POPs are characterized by persistence – the ability to resist degradation in various matrices such as air, water, sediments and organisms for months and even decades; bio-accumulation - the ability to accumulate in living tissues at levels higher than those in the surrounding environment; harmfulness – the toxicity to human and/or wildlife to give adverse effects to human health and the environment, and potential for long range transport – the potential to travel long distances from the source of release through various matrices such as air, water and migratory species. Specific health effects of POPs include cancer, allergies and hypersensitivity, damage to the central and peripheral nervous systems, reproductive disorders, and disruption of the immune system. Some POPs are also considered to be endocrine disruptors which can damage reproductive and immune systems of the exposed individuals as well as their offspring by altering the hormonal system. The ability of these toxic compounds to transport to remote areas of the globe, such as the Arctic, and to bioaccumulate through food webs has raised concerns for the health of humans and the environment, particularly for indigenous people that rely on traditional diets of marine mammals and fish. Because of the international scope of manufacture, use and unintentional releases, and the long distance movement, Stockholm Convention on Persistent Organic Pollutants was established in May 2001 to "protect human health and the environment from persistent organic pollutants by reducing or eliminating releases to the environment". The substances presently being addressed under the Convention are aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, PCB PCDD/PCDF, toxaphene, chlordecone, hexabromobiphenyl, pentachlorobenzene, lindane (gamma hexachlorocyclohexane), alpha hexachlorocyclohexane, beta hexachlorocyclohexane, tetrabromodiphenyl ether and pentabromodiphenyl ether (commercial pentabromodiphenyl ether), hexabromodiphenyl ether and heptabromodiphenyl ether (commercial octabromodiphenyl ether), perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride (PFOS), endosulfan and hexabromocyclododecane.

2. Baseline scenario and any associated baseline projects

The Global Monitoring Report

Article 16 of the Stockholm Convention indicates that the effectiveness of the Convention shall be evaluated four years after the date of entry into force of the Convention and periodically thereafter. The Effectiveness Evaluation includes a Global Monitoring Plan (GMP), which monitors the presence of POPs in the environment and in humans. Such monitoring and subsequent assessment should be undertaken at regional basis. One of the objectives of the GMP is to assess POPs regional and global transport.

The GMP focuses initially on the core matrix mother's milk/blood to examine human exposure, and ambient air to examine long-range transport. The Conference of Parties (COP) has completed its first effectiveness evaluation at its fourth meeting in 2009 (COP4) based in part on the Regional Monitoring Reports, summarized in the Global Monitoring Report. The COP4 agreed upon the essential modalities for the environmental monitoring component of the subsequent evaluations and included 9 new chemicals in the POPs list (Decision SC-4/10-18; Annexes A, B, and C) The COP5 added endosulfan as a POP to be listed in Annex A (Decision SC-5/3) and the COP6 added hexabromocyclododecane as a POP to be listed in Annex A (Decision SC-6/13).

A first series of projects entitled "Supporting the implementation of the POPs Global Monitoring Plan" was conducted in the four sub-regions (*i.e.*, East-South Africa, West Africa, GRULAC, and the Pacific Islands) by UNEP/DTIE Chemicals Branch from 2009 to 2011, with financial assistance from the GEF. These projects enabled provision of quality data on human exposure and environmental concentration of the 12 POPs originally included for the effective evaluation.

In decision SC-6/23, the COP requested the Secretariat "to continue to support training and capacity-building activities to assist countries in implementing the global monitoring plan for subsequent effectiveness evaluations and to work with partners and other relevant organizations to undertake implementation activities".

The series of GMP projects (phase 1) have generated an abundance of results and **lessons learned** that were used to develop the guidelines for GMP 2. **Highlights include:**

Capacity building at POPs Laboratories:

In the four UNEP/GEF GMP projects participated 28 countries. Four more countries from the GRULAC region – Bahamas, Barbados, Cuba, and Haiti – received similar training from UNEP financed by the SAICM QSP programme. This served as co-financing to the GRULAC GEF MSP project. The main objective was to start up the new GC/ECD instrument and train the laboratory staff in the analysis of the core matrices- (ambient air; human milk and / or human blood).

This complementarily resulted in the following training courses that UNEP organized in the regions through its Expert Laboratories:

Table 1: Training courses organized by UNEP in the regions during GMP1 (2009-2012)

Region	Funding	Number of training courses for POPs Labs	Number of countries participating in the project
Pacific project	GEF	1	8
West Africa project		3	6
South-East Africa project		5	6
GRULAC Project		7	8
GRULAC Project	SAICM QSP	2	4
Regional WS (AMS, BCN)	GEF	2	

Total:		20	32
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In addition, developing country laboratories have been provided with consumables and small materials such as GC columns, analytical standards, solvents or sorption materials.

Human milk:

WHO has performed exposure studies on concentrations of specific POPs in human milk at the global level since the end of the 1980s. The main objectives of these studies were: 1) to produce more reliable and comparable data on concentrations of certain POPs in human milk for further improvement of health risk assessment in infants, 2) to provide an overview of exposure levels in various countries and geographical areas, 3) to identify highly exposed local populations in relation to their daily intake for guidance on risk management actions, including epidemiological follow-up studies; and 4) to promote, if necessary, additional national studies to be closely linked with the respective studies through the use of the same protocol.

The first two rounds of the human milk survey were performed in 1986-1988 and 1992-1993 and covered PCB, PCDD and PCDF. From the third round (2000-2003) the spectrum of compounds analysed was extended to include the initial twelve POPs of the Stockholm Convention. A close collaboration between WHO and UNEP was agreed to perform future surveys, starting from 4th round during (2004-2007) and 5th round during (2008-2012) as joint studies for implementation of the convention. This necessitated modifications of the earlier WHO protocols for the collection, handling and analysis of human milk samples, and especially to include new POPs listed in Annexes A, B or C. The WHO Reference laboratory for mothers' milk at State Institute for Chemical and Veterinary Analysis of Food (CVUA) in Freiburg, Germany analysed the human milk samples for POPs.

In the context of UNEP's mandate to develop globally accepted and applicable guidelines for the analysis of POPs and its training and capacity building programme for POPs analysis in developing countries, projects have been implemented to support the implementation of the GMP.

The experience from GMP1 projects confirmed that countries' participation in the survey is significantly boosted if it is included in a funded project (*i.e.*, GEF or SAICM QSP), since countries are thus properly informed of the aim, scope, procedures and benefits of the survey. As there is currently a data gap in Asia on the presence of POPs in human milk (so far, only the Philippines, in 2002, and Indonesia, in 2011, have participated in previous rounds within the targeted sub-region), it is therefore anticipated that the present project will close this gap.

Moreover, as it was confirmed by the terminal evaluation of GMP1, such project scheme fosters cost-effectiveness, by: (i) establishing partnerships with key organisations, agencies (e.g. WHO), academic and research institutions (e.g. expert laboratories, such as CVUA); (ii) building on existing programmes (e.g. WHO milk survey); (iii) adopting existing procedures (WHO guidelines for human milk sampling); (iv) engaging local stakeholders (e.g. local health centres) for identification of mothers' milk donors, or engaging only laboratories having minimum requirements for POPs analysis⁵.

Finally, this project responds to decision SC-6/23, which encouraged Parties to the Stockholm Convention to continue to monitor human milk and requested the Secretariat to continue to support training and capacity building to assist countries in this regard.

Ambient air with passive air samplers (PAS):

⁵See *Terminal Evaluation of the Four UNEP GEF Medium Size Projects: GEF ID GFL/2328-2760-4A37/4A76/4A77/4A80*; p.6(§8)

All countries in the GEF GMP (and the SAICM QSP) projects were equipped with passive air samplers (PAS) to set-up a PAS network. Within the project, samples were taken for one year. Each sampler did carry one PUF, which was exposed for 3 months according to the recommendation from the GMP guidance document, then exchanged and stored until analysis. The projects showed great cooperation from the participating countries and a total of 129 PUFs were analysed for POPs pesticides and indicator PCB. The results show large differences between POPs and regions. For example: Africa and Asian region was high in DDT and drins (aldrin, endrin, dieldrin) whereas in the GRULAC region all concentrations were extremely low. On the other hand, mirex was only detected – although at very low concentrations – in the GRULAC region. PCB were present in all countries but at different concentrations: the highest concentrations throughout the year were observed in La Havana, Cuba (SAICM QSP project) due to the fact that the sampler was positioned at the entry to the harbor and the industrial zone. For PCDD/PCDF and dl-PCB, the four 3-months PUFs were combined into one result to provide an annual average. All samplers gave quantifiable results. The concentrations in the Asian States were securely detected and relatively low; however, another small islands state – Barbados – had quite high concentrations. The highest TEQs were observed in Cuba, Peru and Democratic Republic of Congo. It should be noted that the PUFs from PAS are snapshots and characteristic of the collection capacity of the sampler but also of the location where the PAS is placed. From the results and the feedback from the countries it became evident that further harmonization is needed to have a better representativeness of the sampling site. Some countries have placed the samplers in urban areas (DR Congo, Cuba) whereas others placed them in (the most) remote site of the country (defined as background). Further definition and generic characterization is necessary for better comparison of the results.

Presently, we can only use the data that were generated by the expert laboratories in developed countries, since the developing country laboratories still have some problems with this matrix (which was new to all laboratories). As the interlaboratory study did show, the difference between the laboratories is still too large to allow more than one laboratory to report results.

Interlaboratory comparison assessment:

In order to determine the "true" concentration of POPs in a sample, a chemical laboratory must be able to prove that it is capable to identify and quantify chemicals (=analytes) of interest at concentrations of interest. Such accuracy and precision in the determination of POPs is required by article 16 of the convention and subsequence guidance developed for the Global Monitoring Plan (GMP). The needs and support are documented in COP decisions SC-3/16, SC-4/31, SC-5/18 and SC-6/23. To provide reliable monitoring information for the Parties to the Stockholm Convention, the guidance in the GMP document aims to "confirm a 50% decline in the levels of POPs within a 10 year period". This means that POPs laboratories must be capable – at any time – to analyze samples for POPs within a margin of $\pm 12.5\%$.

With the assistance of GEF funding, so far the largest interlaboratory study on persistent organic pollutants, named the "Bi-ennial Global Interlaboratory Assessment on Persistent Organic Pollutant – First Round" has been implemented during 2010-2011. Its goal was to test the capabilities of laboratories in the analysis of the twelve initial POPs listed in the Stockholm Convention. The UNEP Interlaboratory Assessment was performed according to internationally agreed standards (following ISO-International Organization for Standardization and ILAC-International Laboratory Accreditation Cooperation). Such proficiency tests are valuable management tools to allow external quality controls of the performance of a laboratory that undertakes chemical analysis.

The basis for the interlaboratory assessment is laid down in the Databank of Operational POPs Laboratories, which was developed by the UNEP/GEF Global project on POPs laboratory capacity building from 2005 to 2007. The databank is being maintained by UNEP/DTIE Chemicals Branch and is made available on the Web-site (<http://212.203.125.2/databank/Home/Welcome.aspx>). Presently there are more than 230 POPs laboratories registered. Of these, 103 subscribed to the First Round of the Bi-ennial Global Interlaboratory Assessment on Persistent Organic Pollutants, which offered a number of test samples for analysis (i.e., standards, solutions for POPs pesticides, for PCB, and for dioxin-like POPs; and real samples such as sediment, fish, human milk and fly ash).

Finally, this proficiency test had 83 POPs laboratories from 47 countries representing all UN regions reporting results for at least one POP and one sample type back to UNEP. The distribution of the laboratories per group of POPs and region was as follows:

- i. Simple POPs (PCB and organochlorine pesticides), 12 laboratories came from WEOG region and 61 laboratories came from the other four UN regions (10 from Africa, 35 from Asia, 3 from CEE, and 23 from GRULAC);
- ii. Complex POPs (polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans, dioxin-like polychlorinated biphenyls), 10 laboratories came from WEOG region and 40 came from the other four UN regions (3 from Africa, 32 from Asia, 1 from CEE, and 4 from GRULAC).

The assessment showed that while the measurement of test solutions was largely satisfactory, results for real sample matrices - sediment, fish, and human milk - more frequently were unsatisfactory. Particular difficulties were experienced in the analysis of matrices with high lipid contents (fish, human milk) and for the lower chlorinated PCB and organochlorine pesticides (including DDT). Laboratories from developed countries did not necessarily show a better performance than the developing country laboratories. Especially the overall very good performance of dioxin laboratories from China was stunning.

UNEP has established criteria to generate high quality POPs data through the 2005-2007 Global POPs Capacity building project, which include presence of analytical equipment, identification of analytes for reporting, orientation for data acceptance. These criteria are being further developed for the revised Guidance document for the Global Monitoring Plan (GMP) together with the regional and global coordination groups under the auspices of the Secretariat of the Stockholm Convention (see document UNEP/POPS/COP.6/INF/31 at www.pops.int). In order to be able to establish time trends for POPs concentrations in the environment and humans, it was agreed that for a given POP chemical, the variance between laboratories analysing the same sample should be less than 25% (see above: from 12.5% above the true value to 12.5% below the true value). It was further agreed that POPs laboratories should prove their performance regularly in interlaboratory comparison studies; preferentially on an annual basis.

However, the results of the First round has demonstrated that in all UN regions, the quality of the POPs data are not yet at the desired or necessary level. Especially for true samples – sediment, fish, human milk – the relative standard deviations range up to 250 %, which indicates that certain laboratories still have severe difficulties. It is expected that the results for the participating countries in this Asia GMP2 project will be similar to those from other regions. It should be noted that so far, only China has demonstrated a higher level of performance largely due to the high number of specialized and qualified dioxin laboratories. Since the two dioxin laboratories in Vietnam are well aware of the performance requirements at international level and since two or three laboratories participated in the UNEP-coordinated interlaboratory assessments with remarkable success, it can be assumed that these laboratories will participate in future assessments and in addition, will serve as a role model for other laboratories and stimulate participation.

Other lessons learned from phase 1

Typically **the national reports and the regional report** contain conclusions and recommendations as well as lessons learned.

More generally, **the evaluation report** for the four UNEP/GEF MSP project from GMP1 include the following lessons learned. Although the (South-east Asian) region did not participate during the GMP1 phase, the critiques and recommendations are of great value when designing an improved project for Asia. The most important lessons learned is that the project should not be too ambitious and consider the realities for implementation. These include:

- Whereas the budgets were adequate for all projects, the time needs were heavily underestimated. All projects had to undergo extensions without requesting additional funds. This aspect has been taken into account for this project with having four years for executing 2-years samplings (*e.g.*, for air and water);
- The issue that staff is moving out of jobs and no proper hand-over takes place at national institution needs to be better embedded in the terms of reference for the national coordinator when sub-contracting personnel;
- Having a faster feedback/exchange mechanism between partners, *e.g.*, reports from expert laboratories after training to speed up implementation of procedures in national laboratories;
- Make provisions for exchange of information and experiences and results at regional and international level such as participation in workshops and thus, enhancing south-south cooperation;

Para 14. Valuable lessons emerged during **the terminal evaluation** that include lessons related to technical aspects as well as to overall management of the project (not arranged in any order of priority):

- i. Project documents need careful screening to ensure that they are technically feasible and that goals and objectives are realistic under the proposed timeframe and are consistent with real capacities at national level.
- ii. Running the same project in one region or in parallel in many regions by the same management team and same technical experts require different time planning.
- iii. Identification and adopting measures that promote efficiency ensures successful implementation of project.
- iv. Clearly defined and agreed roles at all levels avoid delays in project implementation.
- v. The mixed form of agency execution and counterpart execution (through sub-contracts to counterpart institutions e.g. regional coordination institutions) is a very efficient implementation modality when the capacities are sufficient and exist at counterpart level: substantive competence, procurement, financial management, and auditing.
- vi. Recruiting consultants with the appropriate language proficiency ensures better understanding of reports and other documents.

The Asian Region

Whereas the GEF supported the four sub-regional projects on GMP described above, no such project did exist in Asia. Many of the data collected for the Asia-Pacific regional monitoring report (December 2008) were obtained from one time projects. Among the projects providing data for the region is the "POPs Monitoring Project in East Asia" (POPSEA project), which has been initiated by Japan and has operated sampling (since 2005) in up to ten Asian countries (*i.e.*, Cambodia, Indonesia, Japan, Republic of Korea, Lao PDR, Malaysia, Mongolia, Philippines, Thailand and Vietnam). This project is ongoing. However, the scattered information does not allow establishing time or spatial trends for the region. Hence, a mechanism is needed to collect comparable data for the future evaluations.

The Asia-Pacific regional group presented its first report on POPs monitoring to the Secretariat⁶ for its inclusion in the first Global Monitoring Report, which was published in 2009. The Asia-Pacific regional monitoring report highlights lacking data (*e.g.*, for human samples), gaps and capacity strengthening needs in support of future GMP implementation. According to the report, for Asia-Pacific region in general, "the reported levels of POPs in the air were on the averaged high side when compared with concentrations in other parts of the world. The reported data provide baseline information of POPs in some countries. However, some POPs were not detected either because of the levels were really low or the detection limits of analytical method were not low enough, which may provide difficulty for future comparison. Also, some data were collected in particular period of the year as a snap shot, and more data will be necessary for the discussion of the long-range transport"⁷. The report also stresses that "because monitoring data do not exist in most countries to enable the assessment of long-range transport of POPs in the Region, substantial effort will be needed to fill the data and technical gaps and to assess the long-range transport of POPs in the Region. It is noted that regional and international cooperation are urgently required"⁸. In addition, the ROG members of Asia-Pacific "strongly suggest that collection of POPs information should be continued"⁹

The Asia-Pacific regional monitoring report summarized the available data and gaps as follows:

- The East Asian sub-region has some baseline data on POPs presence on ambient air. However, this data is lacking in the South Asian sub-region.

⁶ *i.e.*, First regional monitoring report for the Asia and Pacific Region under the Global Monitoring Plan for POPs (available at: <http://chm.pops.int/Implementation/GlobalMonitoringPlan/MonitoringReports/tabid/525/Default.aspx>)

⁷ *Ibid.*, p.44

⁸ *Ibid.*, p.46

⁹ *Ibid.*

- The POPs Monitoring Project in East Asian Countries has also monitored POPs (nine pesticides) in the air by high volume sampler in Cambodia, Indonesia, Republic of Korea, Lao PDR, Malaysia, Mongolia, Philippines, and Vietnam since 2005.
- Regarding human blood or human milk, there is generally even less country information available on the levels of POPs in the human tissues than those of air.

All this clearly indicates the strong need to monitor the level of POPs in air in the Southeast Asian countries, following the GMP Guidelines.

In order to improve data generation and capacity building for sustained monitoring in the Asia Pacific region in the future, the Global Monitoring Report stresses that “capacity building for persistent organic pollutant monitoring programmes for most countries in the region remains the top priority recommendation”. Some detailed recommendations are provided in this regard, in particular: “performance of intercalibration tests; improving skills for sampling and analysis; strengthening the infrastructure in existing laboratories to provide capability to analyse the core matrices; and financial assistance to establish long term programmes and self-sufficient laboratories. (...) Countries are also encouraged to seek opportunities for sharing regional monitoring data and for developing multi-country approaches and joint programmes to secure international funding, in addition to working with neighbouring countries to produce subregional data. It is suggested that, to fill gaps and cover needs, further financial and technical support for persistent organic pollutant monitoring should be provided according to Articles 12 and 13 of the Convention.”¹⁰.

This entails more trained personnel and the acquisition of appropriate analytical facilities and the funds to maintain and operate the instruments. A major effort associated with improving analytical capability for POPs needs to ensure good quality assurance and quality control among laboratories, which may include the regular use of reference standards and/or certified reference materials, regional training programs and inter-laboratory comparison exercises, and the identification of reference laboratories in the region for specific POPs (as it is emphasised in p.46 of the Asia-Pacific regional monitoring report).

The present GMP project intends to build on the lessons learned of the GMP phase 1 projects, and fulfil the recommendations of the regional and global monitoring reports. As Parties to the Convention, Asian developing countries are eligible for application of GEF funds to strengthen the monitoring capacity at national level and so to contribute with national data to the GMP.

3. Proposed alternative scenario, with a brief description of expected outcomes and components of the project

The present project intends to assist countries in the Asian region that are Parties to Stockholm Convention to respect their obligations under Article 16 (i.e., effectiveness evaluation of the Convention) by generating sufficient high quality data on the presence and transport of POP in the region. To achieve this, the project will strengthen capacity for implementation of the revised POPs Global Monitoring Plan in the region and create the conditions for sustainability of the networks (see the Objective tree in Annex B).

Depending on the analytical laboratory capacity in the participating countries, POPs labs will be trained in the analysis of POPs (including the new POPs). Typically, laboratories specialize in a particular class of compounds or matrix (*e.g.*, air). Furthermore, there are likely to be some specialized in basic POPs (pesticides and PCB), and fewer with the capacity for dioxin analysis or analysis of PBDE or PFOS. Dioxin analytical capacity exists in Vietnam. It is anticipated that analytical training courses will be held in each country; each course having between 3 and 10 lab staff. According to the GMP Guidelines, there will be one pooled mothers milk sample collected per country. This sample should comprise milk from 50 donor mothers. Large countries might generate two pooled samples of 50 donors each. Each country anticipates that

¹⁰ See UNEP/POPS/COP.4/33, *Global monitoring report under the global monitoring plan for effectiveness evaluation*, pp.11-12 (available at: <http://chm.pops.int/Implementation/GlobalMonitoringPlan/MonitoringReports/tabid/525/Default.aspx>)

mothers milk sampling would be led by one senior public health scientist and working together with a team of up to 10 nurses or students to establish nation-wide coverage. The teams will receive training in the interviewing and sampling techniques necessary. It is understood that the national laboratories may not be necessarily capable to analyse the 11 “new” POPs. Therefore new partnerships and collaboration with specialized laboratories may be necessary.

The GMP Guidelines recommends that 15-20 sites per region are equipped with passive air samplers (PAS). This project covers about one fifth of the countries in the region. We will establish at least one PAS sampling site in each country. Each sampling site will generate 4 results for each group of POPs so that each country will be characterized with 4 measured data sets per year (8 data sets during 2-years exposure). Each country will have one PAS network coordinator with people in the field responsible for collecting the exposed PUF samples and exchanging the PUFs in the sampler. The project will build national capacity to maintain the network of PAS.

This project will also develop detailed guidelines, protocols and manuals as well as training of staff in participating laboratories and strengthening the performance of sampling and analysis will enable the national laboratories to improve their ability to analyse POPs according to international standards consistent with GMP Guidelines. In this regard, the project will strengthen the capacity of Asian countries for monitoring POPs concentrations in the core matrices and will facilitate reporting under the GMP. This project will also develop a long-term monitoring plan for the region (through a roadmap), which will ensure frequent generation of data and input into the regional and global monitoring plans and finally report to the Conference of the Parties to the Stockholm Convention.

Moreover, the momentum generated by the Bi-ennial Global Interlaboratory Assessment on Persistent Organic Pollutant, will be maintained with this project, since laboratories and the users of analytical data have understood that the results must be trustworthy between data generators. Laboratories that performed well are aware that they need to continue demonstrating their proficiency, and laboratories not yet at the necessary performance level are willing to improve and undergo further tests to finally achieve the performance target. All laboratories and clients/ stakeholders are aware that each of the interlaboratory comparison studies is a snap-shot and that the proficiency of the laboratories will change upon exterior factors such as change in personnel, acquisition of new equipment and sometimes even procurement of analytical standards or consumables. For each POP or each matrix that will be analysed for the first time in a POPs laboratory, the laboratory must demonstrate its capabilities on an objective, internationally agreed basis. The First Round of the Bi-ennial Global Interlaboratory This exercise allows to assess the performance of the labs in undertaking high quality/reliable POPs analysis. Assessment on Persistent Organic Pollutants had 83 laboratories from 47 countries participating. It is envisaged to have a similar coverage and distribution of laboratories for the two coming rounds of interlaboratory studies, which – upon approval of this and sister projects - will be implemented in 2015 and 2017, respectively.

Due to the boundaries of the final objective (*i.e.*, implementing the Global Monitoring Plan at regional level) some limitations are given in the project, such as:

- i. The sampling locations cannot be changed during the project’s implementation (and afterwards);
- ii. Sampling for all three core matrices (*i.e.*, air, water, human milk) has to follow agreed plans and methods, and therefore, no deviations are permitted;
- iii. Interpretation of the results need to be carefully done by respecting/protecting the individual donor (in case of the human milk) and not over-interpreting the results;
- iv. It should be noted that high concentrations of POPs in a country may negatively influence important economic activities, such as tourism.

Since the Global Monitoring Plan does explicitly not address hot-spots, it is not envisaged (and actually would be against the objectives of the Global Monitoring Plan) that highly contaminated sites will be assessed or analysed in this project.

The situation analysis behind the project design can be found in the form of problem and objective trees in Annex B. The expected outcomes, outputs and related activities of the project are listed below. Related indicators and assumptions can be found in the logical framework in Annex A.

Project component 1: Securing conditions for successful project implementation.

Expected outcome:

Relevant stakeholders for project implementation in the Asian region are committed to carry out the agreed responsibilities.

Expected output:

Technical and administrative support provided for the implementation of the project and organization of process established in the Asian Region.

Planned activities:

- Key stakeholders sign legal documents to carry POPs monitoring activities for all 23 POPs in the region;
- Organise a regional inception workshop to launch the project and detail the activities and responsibilities with a workplan and budget;
- Update POPs laboratory databank with information on new laboratories, new POPs and new matrices.

Project component 2: Capacity building and data generation on analysis of core abiotic matrices (air and water).

Expected outcome:

Regional network and national capacity to carry out air and water sampling is enhanced in the Asian region, and high quality data is generated on the presence of initial and new POPs in the region.

Expected output:

Training reports and sectoral reports on POPs analysis undertaken on two abiotic core matrices (i.e., air and water) in the Asian Region.

Planned activities:

- Identify the sampling sites for air monitoring in the region, and provide them sampling equipment and materials to make them operational;
- Identify strategic sampling sites for water monitoring in the region, and provide them sampling equipment and materials to make them operational;
- Provide equipment, training and guidelines to make operational the national laboratories undertaking analysis of abiotic matrices in the region;
- Analyse national samples for air and water and report high quality data for the region;
- Summarize results of analysis from the region in two distinctive sectoral reports, i.e. one for air and one for water.

Project component 3: Capacity building and data generation on analysis of core biotic matrices (human milk).

Expected outcome:

Regional network and national capacity to carry out human milk sampling is enhanced in the Asian region, and high quality data is generated on the presence of initial and new POPs in the region.

Expected output:

Training reports and sectoral report on POPs analysis undertaken on one biotic core matrix (6th round of human milk survey) in the Asian Region.

Planned activities:

- Provide materials and guidelines to countries in the region to undertake sampling of human milk for the 6th round of UNEP/WHO survey;
- Provide materials, training and guidelines to national laboratories in the region to undertake analysis of human milk samples;
- Successfully implement the 6th round of human milk survey in the Asian region, with high quality data reported by the UNEP/WHO reference laboratory;
- Compare results of the 6th round of human milk survey with data from earlier rounds and report them to the Global Monitoring Plan.

Project component 4: Assessment of existing analytical capacities and reinforcement of national POPs monitoring.

Expected outcome:

Accuracy of POPs assessment in the Asian region is consolidated by performance evaluation of national laboratories, as well as by analysis of additional matrices of major national interest.

Expected output:

Assessment report of existing analytical capacities prepared and report on POPs analysis undertaken in samples of national priority (other than core matrices) in the Asian Region.

Planned activities:

- Organise two rounds of the “Bi-ennial Global Interlaboratory Assessment for POPs Laboratories” implementing the 3rd and 4th round and prepare a report summarizing the test results;
- At national level, each country identifies, collect and analyse samples of major interest for national chemicals management (such as fish or other foodstuffs but also sediments and soils), with high quality data being reported.

Project component 5: Securing conditions for sustainable POPs monitoring.

Expected outcome:

Contribution to regional report for the GMP is performed, and a roadmap for sustainable POPs monitoring for the Asian region in global context is developed.

Expected output:

Assessment reports contributing to regional report for the GMP undertaken, and a roadmap for sustainable POPs monitoring developed for the Asian region.

Planned activities:

- Develop conclusions, lessons learned and recommendations from GMP phase 2 for future monitoring plan;
- Prepare a state-of-the-art report to picture the present situation of POPs in the Asian region’s environment and humans;
- Develop a roadmap for sustainable POPs monitoring in the Asian region

A.5 INCREMENTAL /ADDITIONAL COST REASONING: DESCRIBE THE INCREMENTAL (GEF TRUST FUND/NPIF) OR ADDITIONAL (LDCF/SCCF) ACTIVITIES REQUESTED FOR GEF/LDCF/SCCF/NPIF FINANCING AND THE ASSOCIATED GLOBAL ENVIRONMENTAL BENEFITS (GEF TRUST FUND) OR ASSOCIATED ADAPTATION BENEFITS (LDCF/SCCF) TO BE DELIVERED BY THE PROJECT:

Incremental cost reasoning

In line with the GMP implementation plan, the project builds on existing POPs monitoring programmes and networks, and operates in close collaboration with the coordination groups established under the Stockholm Convention. The GEF funding will cover the incremental costs of the regional activities being performed regarding POPs analysis.

This project will also further strengthen the capacity of the laboratories at the Vietnam Environment Administration (VEA) and the Vietnam-Russian Tropical Research Centre (VRTC) with appropriate training and programmes in dioxin analysis; the perspectives to include the analysis of new POPs are promising. Without the GEF resources, the programmes would not be able to perform collection and analysis of POPs containing sample with sufficient quality and comparability for the 12 initial POPs and there will be no data available for 11 newly listed POPs. As a result, data from the region would be missing from the monitoring report, while the Asian region is critical for assessing global transport and levels of POPs.

Global environmental benefits

The global environmental benefit has to be seen in the context of the efforts of the COP to establish an effective global system for monitoring of the effectiveness of the implementation of the Stockholm Convention. The project contributes to these efforts by strengthening the monitoring capacity at national level and with this enabling the participating countries to contribute national data to the GMP in a regionally and internationally agreed and harmonized approach.

In addition, the project will contribute to the current efforts towards improving the understanding of human exposure to and environmental concentration of POPs at the national, regional and global levels including spatial and time trends. As such, the project will facilitate the adoption of effective risk reduction measures at the national and international levels, and therefore the minimization of the global risks to humans and the environment.

A.6 RISKS, INCLUDING CLIMATE CHANGE, POTENTIAL SOCIAL AND ENVIRONMENTAL RISKS THAT MIGHT PREVENT THE PROJECT OBJECTIVES FROM BEING ACHIEVED, AND MEASURES THAT ADDRESS THESE RISKS:

A program involving seven countries has obvious logistical risks. So far, UNEP has not implemented POPs projects involving most of these countries (NIPs were undertaken with Cambodia, Thailand), however laboratories from Vietnam and Thailand have participated in UNEP's interlaboratory assessments (1st and 2nd round); no other agency has been active in this region organizing interlaboratory assessments. Outside of the UN system, the South-East Asia POPs monitoring programme led by Japan has "unified" most of these countries so that the UNEP/GEF project will be able to build on existing cooperation. WHO has been a long-term partner in POPs work in the region and has representatives in Fiji, Samoa and Kiribati. All countries have WHO focal points. Hence, the project builds on an already existing network with proven capacity to carry out the project activities. The logistical issues will be further discussed during the sub-regional workshop to be held in component 1 of the project, and the issues will be addressed in the revised work plan and project arrangements.

The other major risk is the ability to do the laboratory work. For Quality Assurance purpose, a number of samples will be analyzed in an experienced partner laboratory.

Table 2: Summing up of risks and mitigation measures identified:

Risk identified	Mitigation measure
Logistical risks inherent to a programme involving seven countries	<ul style="list-style-type: none"> - The liaison work will be facilitated by VEA; - The project will also build on the POPSEA network - Lessons learned from the 1st POPs monitoring project concerning administrative issues and technical orientation will be taken into account in this project. For this reason, UNEP has been assigned as executing agency
Inability to conduct laboratory work	<ul style="list-style-type: none"> - The capacity of POPs laboratories has not yet been assessed. Therefore, the knowledge about the real situation of the capacities and performance of most laboratories is unknown (exception are the three laboratories in Vietnam). For quality assurance purpose, a number of samples will be analyzed in an experienced partner laboratory.

A.7 COORDINATION WITH OTHER RELEVANT GEF FINANCED INITIATIVES

The project contributes to output 522 of the Expected Accomplishment 5(b) of UNEP Programme of Work (PoW), namely: “Thematic Assessments of environmental transport and fate of chemicals, and monitoring of trends in chemicals production, handling, movement, use, release and disposal, catalyze coordinated action on chemicals management in the UN system”. The project is coordinated with other PoW outputs, and provides inputs for them (e.g., lessons learned, best practices and guidance materials).

In addition to be implemented in tandem with the other GMP2 projects “Continuing regional support for the POPs Global Monitoring Plan under the Stockholm Convention in the Africa/Latin American and Caribbean¹¹/Pacific Islands region”, and especially with the sub-regional project in the Pacific Islands region. The project will build on the outcomes of the ongoing **UNEP/GEF** global project “**Establishing the Tools and Methods to Include the Nine New POPs into Global Monitoring Plan**”:

This project is at its final stage and has created the necessary basis to address the analysis of nine new POPs according to international standards. It provides training on how to analyse new POPs, and lays down the scientific and practical modalities at regional level to provide global monitoring data for environmental concentrations and human exposure. The results are updated and amended guidance documents and input into regional reports and regional POPs monitoring systems. This project (the GMP project in the Asian region) will use the guidelines developed under the global monitoring project. In reverse, this project will contribute to the UNEP/GEF Global new POPs analytical project through experiences gained on the ground.

6th Round of the UNEP/WHO human milk survey:

This project has been launched jointly by the World Health Organisation (WHO), and UNEP, represented by the Secretariat of the Basel, Rotterdam and Stockholm Conventions (BRS Secretariat) and UNEP/DTIE Chemicals Branch at the extraordinary meeting of the Conferences of the Parties in April/May 2013 (COP-6 for Stockholm, COP-11 for Basel and COP-6 for Rotterdam conventions). The project uses the same guidelines and the same Reference Laboratory and will

¹¹ GEF Project ID 4886 “Continuing Regional Support for the POPs Global Monitoring Plan under the Stockholm Convention in the Africa Region” and GEF Project ID 4881 “Continuing Regional Support for the POPs Global Monitoring Plan under the Stockholm Convention in the Latin American and Caribbean Region”.

generate one joint report for the Global Monitoring Plan and submission to the next meeting of the Conference of the Parties to the Stockholm Convention (COP-7, 2015). This large global project will share responsibilities and funds whereby the BRS Secretariat through WHO will assist eligible developing countries that have participated in previous rounds of the survey and the UNEP/GEF projects will assist countries/parties participating in UNEP's regional GEF projects. This survey will provide data on POPs concentrations in human milk in the Asian region as part of the global 6th round of the human milk survey that has been launched by WHO and UNEP

B. ADDITIONAL INFORMATION NOT ADDRESSED AT PIF STAGE:

B.1 DESCRIBE HOW THE STAKEHOLDERS WILL BE ENGAGED IN PROJECT IMPLEMENTATION.

This project contributes to UNEP Programme of Work output 522 (also named 5B2): "Thematic Assessments of environmental transport and fate of chemicals, and monitoring of trends in chemicals production, handling, movement, use, release and disposal, catalyze coordinated action on chemicals management in the UN system". It contributes to the first indicator under expected accomplishment (b): "Increase in the number of Governments addressing priority chemical issues, including their obligations under the chemicals MEAs, through the use of risk assessment and management tools provided by UNEP".

Table 3: Stakeholders participation in the project

Key stakeholders	Role in the proposed project
(ISO) International Standards Organisation and ILAC International Laboratory Accreditation Cooperation (ILAC) as well as (International Union of Pure and Applied Chemistry) (IUPAC)	<ul style="list-style-type: none"> - Guarantee that (other) internationally agreed standards are followed.
Expert laboratories from Free University Amsterdam, IVM VU, the Netherlands, and Örebro University, MTM Centre, Sweden	<ul style="list-style-type: none"> - Organize training and mirror analysis of samples, and organization of inter-calibration studies; - MTM Centre Örebro also serves as reference laboratory for PFOS in human milk
WHO/UNEP Reference laboratory for human milk at Chemisches Untersuchungsamt Freiburg (CVUA Freiburg), Germany	<ul style="list-style-type: none"> - Undertakes the analysis of lipophilic POPs in human milk and assists in matters related to this core matrix
RECETOX-Czech Republic	<ul style="list-style-type: none"> - Assist in matters related to air monitoring
Participating countries from the Asian region; mainly through their ministries of environment (for component 2) and ministries of health (for component 3)	<ul style="list-style-type: none"> - Provide significant input to Article 16 of the Stockholm Convention by providing sub-regional data to the effectiveness evaluation and the Global Monitoring Plan for POPs; - Establishment and maintenance of the air and water networks - Collect/organize the collection of human milk and blood samples for the GMP through the mothers donating the breast milk and blood; - Provide human milk donors with results of the analysis and the interpretation of it.
Staff operating the networks together with the laboratories in the region	<ul style="list-style-type: none"> - Maintain the sampling network for ambient air - Receive training and consumables/spares

	<ul style="list-style-type: none"> – Generate national data in a systematic and comparable way that will characterize their exposure to POPs.
Japan Environmental Sanitation Center (JESC); as well as the National Institute for Environmental Studies (NIES), Japan	<ul style="list-style-type: none"> – JESC and NIES will support the GEF GMP2 project with in-kind cofinancing in the form of personnel, office facilities and equipment, laboratory infrastructure and equipment, as well as bilateral assistance through collaboration and coordination with other projects in relation to POPs (i.e., POPSEA). Through the implementation of POPSEA, they will play a crucial role in the post-GEF project's sustainability of monitoring activities in the region.

The roles of the IA, EA and Project Steering Committee will be the following:

Implementing Agency (IA): This project will be implemented by UNEP and internally executed by the Chemicals Branch of UNEP DTIE. As Implementing Agency, UNEP will be responsible for the overall project supervision, overseeing the project progress through the monitoring and evaluation of project activities and progress reports. It will report the project implementing progress to GEF and will take part in the project Steering Committee. UNEP will closely collaborate with the EA and provide it with administrative support in the implementation of the project.

Executing Agency (EA): The participating countries as well as VEA (in Vietnam) were consulted to determine the executing agency (EA). All of them expressed their desire to replicate the successful model from GMP1 project and have UNEP DTIE Chemicals as the EA. This is based on several considerations, such as UNEP's known expertise and proven track record (e.g. in GMP1 project). As EA, UNEP DTIE Chemicals will execute, manage and be responsible for the project and its activities on a day-to-day basis. It will provide technical support to participating countries and regional laboratory and establish the necessary managerial and technical teams, as needed, to execute the project. It will search for and hire expert organizations and consultants necessary for technical activities and supervise their work. UNEP/DTIE Chemicals Branch will closely liaise with the Stockholm Convention Secretariat, other co-funding partner, including the World Health Organization which is implementing a global human milk survey. Financial transactions, audits and reports will be carried out in accordance with UNEP procedures. .

Project Steering Committee (PSC) will be established, and will meet at the beginning, mid-point and prior to the end of the project. The PSC will assess the progress of the project and give advice and guidelines. The PSC is composed of UNEP IA, the Secretariat of the Basel, Rotterdam and Stockholm Convention (BRS Secretariat), the World Health Organisation (WHO) and donor institutions such as expert laboratories, Recetox (hosting the GMP databank), and VEA (as a partner in the South East Asia POPs Monitoring project lead by Japan; VEA will be the main partner of UNEP EA in the region).

As is shown in the graphical sketch below, the EA makes agreement with all partners in the project (*i.e.*, beneficiary countries in the Asian Region, expert laboratories, consultants, and procurements if necessary). By implementing the agreements, the partners report back to the EA and interact among themselves according to project activities.

A graphical sketch is shown in the Figure below:

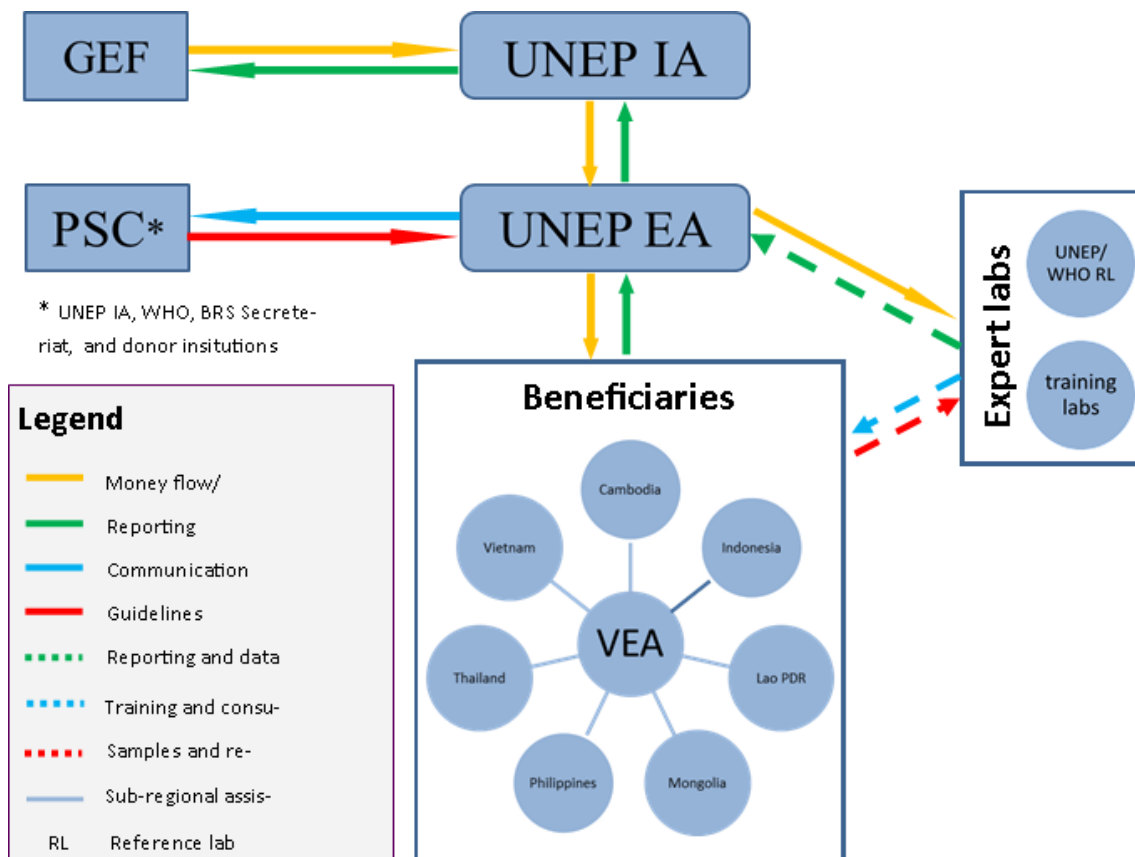


Table 4: Implementation arrangements – Steering Committee

Actor		Role in the project
Steering Committee	UNEP/DTIE Chemicals Branch (IA)	– Implementing agency, overall supervision of the project, monitoring progress
	World Health Organization	– IGO responsible for human health, cooperation partner that is implementing the global human milk survey jointly with UNEP/DTIE Chemicals Branch and the BRS Secretariat.
	BRS Secretariat	– Leadership on issues related to the Stockholm Convention in general and Global Monitoring Plan specifically. Co-funding partner
	Donor institutions	– Expert laboratories that provide training and backstopping to developing countries and to UNEP
UNEP/DTIE Chemicals Branch (EA)		– Executing Agency, responsible for legal arrangements with participating countries and support institutions; technical and scientific backstopping and closely liaise with the Secretariat of the Basel, Rotterdam and Stockholm conventions

B.2 DESCRIBE THE SOCIOECONOMIC BENEFITS TO BE DELIVERED BY THE PROJECT AT THE NATIONAL AND LOCAL LEVELS, INCLUDING CONSIDERATION OF GENDER DIMENSIONS, AND HOW THESE WILL SUPPORT THE ACHIEVEMENT OF GLOBAL ENVIRONMENT BENEFITS (GEF TRUST FUND/NPIF) OR ADAPTATION BENEFITS (LDCF/SCCF):

General socio-economic benefits

The general public is the indirect beneficiary of the project since for most of the countries national data will be generated for the first time in a systematic and comparable way that will characterize their exposure to POPs. The ambient air data will provide information as to the “import” of POPs from neighbouring regions and the human data will provide information as to the present exposure at the top of the food-chain. More generally, data generated through the project will allow a more accurate knowledge of human exposure and environmental concentration of POPs at the national, sub-regional and global levels, therefore enabling an assessment of the effectiveness of the measures adopted and the development of more efficient measures where relevant. In addition, the POPs laboratory will apply the standards as established in “Good Laboratory Practices” (GLP) which includes in particular the laboratory management of human resources.

Gender dimensions

The proposed project is of a scientific nature that does not directly impact people’s productive activities. Therefore the gender equity issue takes a different dimension than for pure emissions reductions activities. 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 will be conducted on the basis of the ethical clearance as required by WHO, and after signature of the statement of interest by both, health and environment sector.

Contributions to MDGs and UNDAFs

The UNDAFs of all the seven countries involved in this project have been analyzed, in order for the project to be in line with them. The UNDAFs are directly linked to the MDGs, with the aim to allow their achievement at the national level.

This project is coordinating and providing scientific guidance towards four of the MDGs, namely:

- eradicating extreme poverty (see explanation in the next paragraph) by avoiding exposures to harmful substances which causes lost wages due to illness, the death of current or potential wage earners, or financial hardship brought about by the crippling costs of medical expenses and long-term care for the chronically ill or for children with severe developmental problems
- improving maternal health through identification of highly exposed mothers (at national scale) and initiating/triggering counter-measures;
- ensuring environmental sustainability through identification of primary pollutants and initiation of countermeasures; and
- developing a global partnership for development.

For society as a whole, the health effects of exposures to harmful substances and hazardous waste lead to an increase in public health costs, loss in productivity, and a legacy of health and environmental problems passed down to future generations. The improper management of chemicals perpetuates a vicious cycle of resource degradation, increasing poverty and the erosion of livelihoods.

B.3 EXPLAIN HOW COST-EFFECTIVENESS IS REFLECTED IN THE PROJECT DESIGN:

The project builds on a GEF project implemented by UNEP from 2009 to 2012 (*i.e.*, GMP Phase 1 project) and its conclusions and recommendations, which have been incorporated here to enhance efficient and cost-effective implementation. It is worth noting that the external terminal evaluation of the Phase 1 project rated the projects' implementation as cost-effective. Hence, the factors of success identified in the evaluation have been replicated in Phase 2, namely: (i) partnerships with strategic players (*i.e.*, key organisations, agencies, and academic and research institutions); (ii) building on relevant existing programmes in the region (*e.g.*, WHO milk survey); (iii) the adoption of existing procedures (WHO guidelines for human milk sampling); (iv) engaging local stakeholders (*e.g.* for identification of sites and mother's milk donors).

The international coordination by UNEP/DTIE Chemicals Branch as the executing agency have been chosen in order to increase efficiency. However, the project follows the approach of identifying and building on what is already existing in the region whenever possible/relevant.

Cost-effectiveness has also been considered in the choice of samplers for core matrices. Instead of using expensive active samplers, passive air samplers (PAS) have been selected as the main tool for the monitoring of POPs in the air, as they are really cheap and easy to use while being reliable. The use of PAS increases the sustainability of the project, as they are consequently more appropriate for the local context in terms of post-project monitoring activities in the region. Hence, these cheaper, more easy to use monitoring tools make capacity building measures (*e.g.*, trainings) much more relevant and efficient as well.

The project is investigating with the Japan Environmental Sanitation Center (**JESC**) the potential collaboration or coordination with the POPSEA project in order to avoid duplications/overlaps and increase efficiency. Such collaboration could have the potential to increase the sustainability of the project as well. Indeed, JESC has been working on POPs monitoring with the South East Asian region for a number of years. In doing so, assistance was given to neighbouring developing countries in setting up an air network and to undertake analysis of the sorbents in the passive and active air samplers (*e.g.*, PUFs). POPSEA has generated analytical results for about seven years from the region. However, the programme does not include PCDD/PCDF and dioxin-like PCB in its analysis. Also, the new POPs such as PBDE and PFOS are not included. Hence, there might be interesting complementarity to capitalise on between the two projects (*i.e.*, GMP UNEP/GEF project and POPSEA), and an opportunity to consolidate the post-GEF project exit strategy for ongoing POPs' monitoring activities and increasing data quality in the region.

The project also intends to communicate with the Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the Northwest Pacific Region (**NOWPAP**), since this regional IGO has shown close interest in POPs monitoring in the region. The project's data and findings could be very beneficial to the NOWPAP's mandate and efforts, and interesting collaboration and synergies' opportunities could be found (*e.g.*, for mainstreaming). Indeed, POPs affect marine life and the human populations who rely on it, through bio-accumulation in the food-chain.

C. DESCRIBE THE BUDGETED M & E PLAN:

The project will follow UNEP standard monitoring, reporting and evaluation processes and procedures. Reporting requirements and templates are an integral part of the UNEP legal instrument to be signed by the executing agency. The project M&E plan is consistent with the GEF Monitoring and Evaluation policy.

Day-to-day management and monitoring of the project activities will be the responsibility of the executing agency, UNEP/DTIE Chemicals Branch. VEA will assist the executing agency within the region and maintain frequent contact with the participating countries. UNEP/DTIE Chemicals Branch will submit half-yearly progress reports to the implementing agency at UNEP. She will also be responsible for the issuing of legal documents such as small-scale funding agreements (SSFAs) with participating governments and other institutions, especially expert laboratories assisting in the capacity building activities of the project according to the work plan and expected outcomes.

The half-yearly reports will include progress in implementation of the project, financial report, a work plan and expected expenditures for the next reporting period. It will also identify obstacles occurred during implementation period.

Each participating country will nominate a national coordinator, responsible for the coordination and oversight of national activities. In consultation with UNEP the national coordinator will identify suitable national institutions to carry out the activities on the ground such as the sampling of air, water, and human milk. They will also identify samples of national interest for POPs analysis.

The Project Steering Committee (PSC) will comprise UNEP IA, the World Health Organisation (WHO), the Secretariat of the Basel Rotterdam and Stockholm conventions (BRS Secretariat) and donors such as expert laboratories, Recetox (in function of the Stockholm Convention Regional Centre and host of the GMP databank). The PSC will monitor the progress of the project and give advice as to implementation issues. The PSC meetings will be held back to back with major meetings (*e.g.*, the inception workshop and the final lessons learned workshop), in association with COP-BRS Secretariat meeting. At month 12, the PSC will meet through teleconference. Hence, no additional fund is needed for travel and DSA.

Table 5: Monitoring and Evaluation Budget

M&E activity	Purpose	Responsible Party	Budget GEF (US\$)	Time-frame
Inception workshop	Awareness raising, building stakeholder engagement, detailed work planning with key groups, defining key sectors in each participating country, agreement on budget	UNEP EA in cooperation with USP/IAS	0	Within two months of project start
Inception report	Provides implementation plan for progress monitoring	UNEP Chemicals EA	0	Within one month of the Inception Workshop
Half-yearly progress reports		UNEP EA	0	
PIRs		UNEP EA with UNEP TM	0	Months 26, 38, 50
Final report	Reviews effectiveness against implementation plan, highlights technical outputs, identifies lessons learned and likely design approaches for future projects, assesses likelihood of achiev-	UNEP	0	At end of project implementation

	ing design outcomes			
Project review and steering by PSC	Assesses progress, effectiveness of operations and technical outputs; Recommends adaptation where necessary and confirms implementation plan.	PSC	0	Months 2, 24, and 48
Mid-term evaluation	Reviews project performance at mid-term, to analyze whether the project is on track, what problems and challenges the project is encountering, and which corrective actions are required	UNEP (Task Manager or Evaluation Office)	35,000	Month 24
End-term financial audit at national level	Reviews use of project funds against budget and assesses probity of expenditure and transactions at national level.	UNEP	0	Month 44
Independent Terminal evaluation	Reviews effectiveness, efficiency and timeliness of project implementation, coordination mechanisms and outputs Identifies lessons learned and likely remedial actions for future projects Highlights technical achievements and assesses against prevailing benchmarks	UNEP TM in coordination with UNEP Evaluation Office (EO)	35,000	At end of project implementation
Independent Financial Audit	Reviews use of project funds against budget and assesses probity of expenditure and transactions	N/A for internally executed projects	0	
Total indicative M&E cost			70,000	

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT(S) ON BEHALF OF THE GOVERNMENT(S):** (Please attach the Operational Focal Point endorsement letter(s) with this form. For SGP, use this OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Dr. Lonh HEAL	Director General	TECHNICAL AFFAIRS MINISTRY OF ENVIRONMENT KINGDOM OF CAMBODIA	20/02/2012
Mr. Dana KARTAKUSUMA	Assistant to the Minister	MINISTRY OF ECONOMY AND SUSTAINABLE DEVELOPMENT REPUBLIK INDONESIA	27/10/2012
Mr. Khampadith KHAMMOUNHEUANG	Acting Director General	DEPARTMENT OF ENVIRONMENT MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT LAO PDR	15/03/2012
Mr. Enkhbat ALTANGEREL	Director	ECOLOGICALLY CLEAN TECHNOLOGY AND SCIENCE DIVISION MINISTRY OF NATURE, ENVIRONMENT AND TOURISM MONGOLIA	12/03/2012
Atty. Analiza REBUelta-TEH	Undersecretary/ Chief of Staff	DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES REPUBLIC OF THE PHILIPPINES	24/02/2012
Mr. Chote TRACHU	Permanent Secretary	MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT THAILAND	12/06/2013
Dr. Van Tai NGUYEN	Director General	ISPONRE/MONRE SR. VIETNAM	24/04/2012

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for CEO endorsement/approval of project.

Agency Coordinator, Agency Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Brennan van Dyke Director, UNEP GEF Coordination Office			Jorge Ocaña Correa Task Manag- er	+41 22 917 81 95	jorge.ocana@unep.org

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

OVERALL GOAL: Protect human health and environment from toxic exposure to POPs

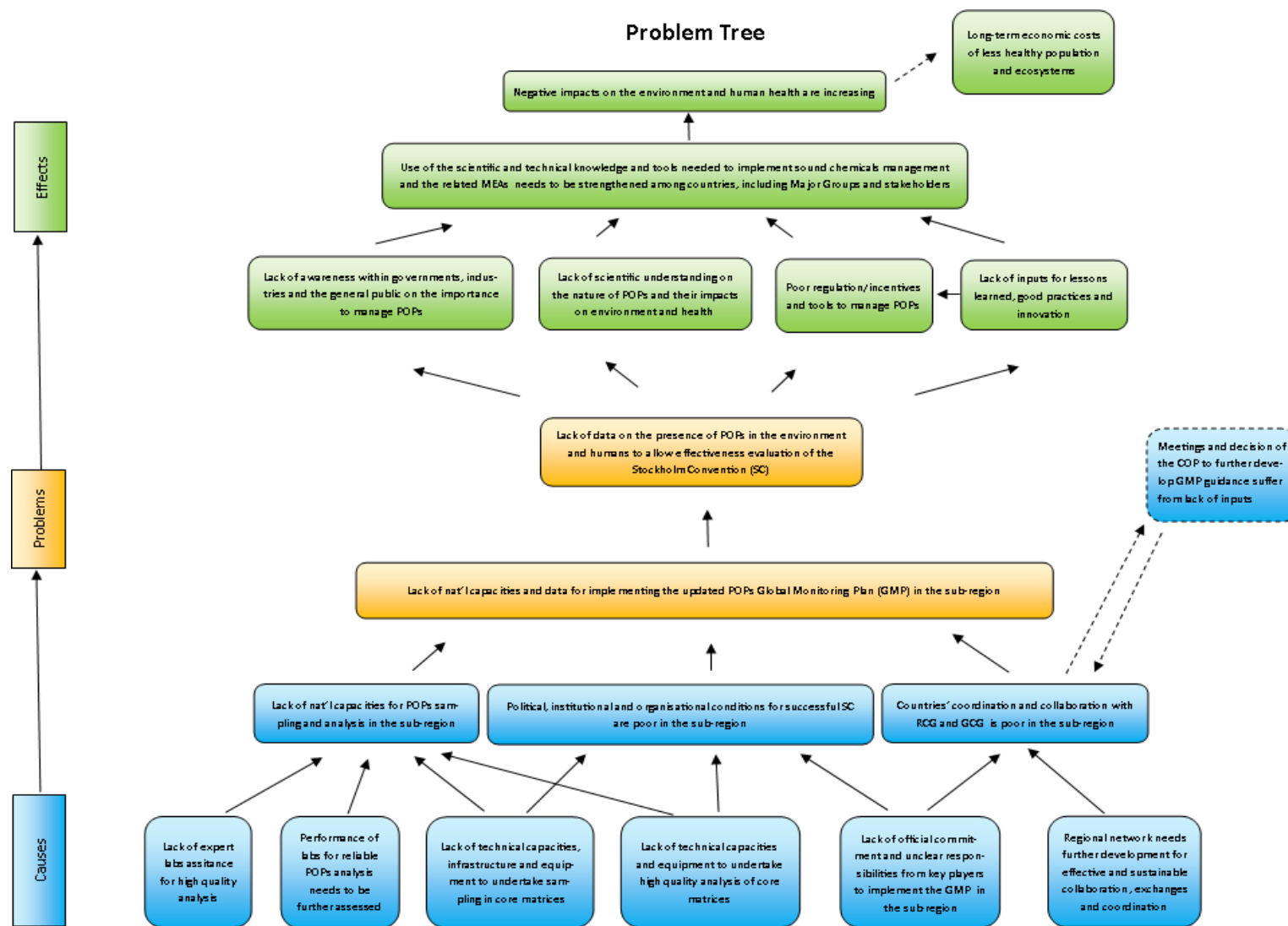
UNEP Programme of Work			
<p>Expected Accomplishment 5(b): Countries, including Major Groups and stakeholders, increasingly use the scientific and technical knowledge and tools needed to implement sound chemicals management and the related MEAs</p> <p>Output. 522: Thematic Assessments of environmental transport and fate of chemicals, and monitoring of trends in chemicals production, handling, movement, use, release and disposal, catalyze coordinated action on chemicals management in the UN system</p> <p>Indicator (i): Increase in the number of Governments addressing priority chemical issues, including their obligations under the chemicals MEAs, through the use of risk assessment and management tools provided by UNEP</p>			
Project outcome	Indicators	Means of verification	Assumptions and risks
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 Asian Region	<ul style="list-style-type: none"> # of countries capable to undertake sampling in the core and other matrices for POPs analysis <u>Baseline:</u> 0 <u>Target:</u> 6 (100% in this project) # of countries with reported data on up to 23 POPs; <u>Baseline:</u> 0 <u>Target:</u> 5 # of regional roadmap for sustainable POPs monitoring published. <u>Baseline:</u> 0 <u>Target:</u> 1 	<ul style="list-style-type: none"> Shipment documentation on samples sent for analysis; Reports of training in POPs analysis at UNEP website; Data are visualized and accessible, e.g. via GMP data-bank or UNEP's website; Regional roadmap document. 	<ul style="list-style-type: none"> (Co-)funding parties provide the funds they have committed; Political commitment among the participating countries stays active throughout the project; No natural or man-made disasters occur that may affect the implementation of the project; No vandalism affects the national network infrastructures (esp., for air and water); Financial and human resources are sufficient; Trained staff remains in place.
Project outputs	Indicators	Means of verification	Assumptions and risks

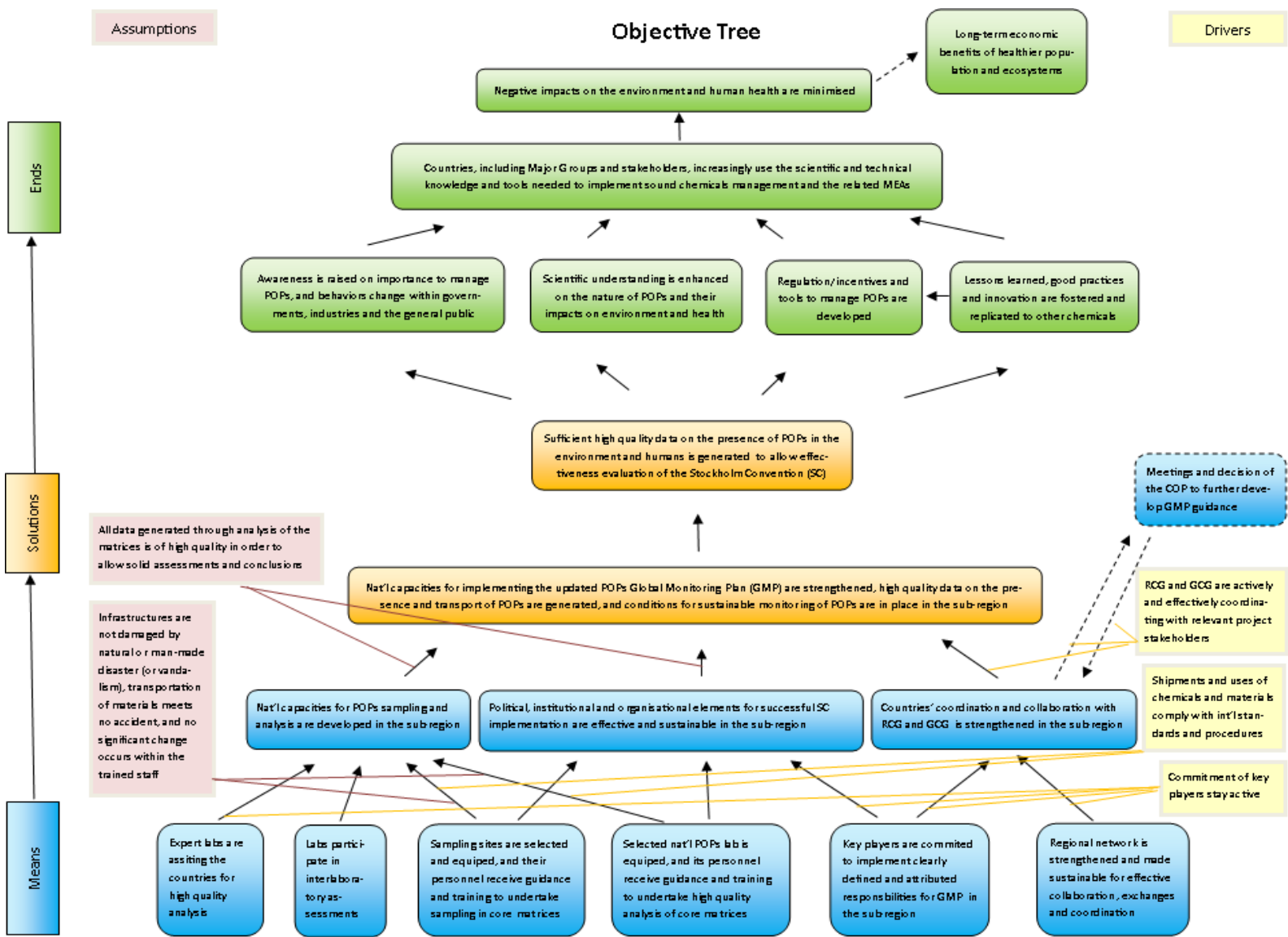
<p>1. Technical and administrative support provided for the implementation of the project and organization of process established in the Asian Region</p>	<ul style="list-style-type: none"> # of national project implementation agreements signed <u>Baseline:</u> 0 <u>Target:</u> 6 # of laboratories submitted information to UNEP for updating information in the databank <u>Baseline:</u> 0 <u>Target:</u> At least 4 	<ul style="list-style-type: none"> Agreements with national entities for project execution available at the EA upon request UNEP laboratory databank website includes information provided by project countries 	<ul style="list-style-type: none"> Legal agreements are in place during the project period UNEP laboratory databank is accessible
Project output Milestones			Expected Milestone delivery date
M1.1: Relevant stakeholders, POPs laboratories and POPs monitoring activities identified			31 December 2014
M1.2: Regional inception workshop held and workplan agreed			30 June 2015
<p>2. Training reports and sectoral reports on POPs analysis undertaken on two abiotic core matrices (i.e., air and water) in the Asian Region</p>	<ul style="list-style-type: none"> # of countries that carried out sampling in abiotic matrices <u>Baseline:</u> 0 <u>Target:</u> At least 5 # of training reports for analysis of abiotic matrices <u>Baseline:</u> 0 <u>Target:</u> 3 # of sectoral reports developed in abiotic matrices <u>Baseline:</u> 0 <u>Target:</u> 2 (one on air; one on water) 	<ul style="list-style-type: none"> Photos of PAS and water samplers at specified sites available at the EA upon request Training report available on UNEP website Sectoral reports (2) one on air and one of water available at UNEP's website 	<ul style="list-style-type: none"> No natural or man-made disaster damages the sampling sites (its adequacy for sampling) or the air sampling materials Personnel ready to dedicate time and expertise over the period of two years Training of national laboratories is adequate and effective
M2.1 Hands-on training to national laboratories on abiotic samples concluded			31 December 2015
M2.1 All national samples are taken and in the laboratory for analysis			30 June 2017
<p>3. Training reports and sectoral report on POPs analysis undertaken on one biotic core matrix (6th round of</p>	<ul style="list-style-type: none"> # of countries that carried out sampling in biotic matrices <u>Baseline:</u> 0 	<ul style="list-style-type: none"> Shipment documents from Asian countries to the reference lab available at the EA 	<ul style="list-style-type: none"> Infrastructure and practical arrangements can be realized as planned

<p>human milk survey) in the Asian Region</p>	<p><u>Target:</u> At least 5</p> <ul style="list-style-type: none"> • # of training report for analysis of biotic matrices <p><u>Baseline:</u> 0</p> <p><u>Target:</u> 2</p> <ul style="list-style-type: none"> • # of sectoral reports developed in biotic matrices <p><u>Baseline:</u> 0</p> <p><u>Target:</u> 1</p>	<ul style="list-style-type: none"> • Training report available on UNEP website • Sectoral report for 6th human milk survey available at UNEP's website 	<ul style="list-style-type: none"> • No substantial changes in personnel
<p>M3.1 Hands-on training to national laboratories on biotic samples concluded</p>			<p>31 December 2015</p>
<p>M3.2: 6th round of human milk survey concluded and report available</p>			<p>31 December 2016</p>
<p>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 Asian Region</p>	<ul style="list-style-type: none"> • # of rounds for interlaboratory assessments held <p><u>Baseline:</u> 0</p> <p><u>Target:</u> 2</p> <ul style="list-style-type: none"> • # of countries having high quality data reported for samples of major national interest. <p><u>Baseline:</u> 0</p> <p><u>Target:</u> Up to 3</p>	<ul style="list-style-type: none"> • Bi-ennial Global Interlaboratory Assessment reports available through UNEP's website • Reports containing quantitative results of POPs analysis. 	<ul style="list-style-type: none"> • Financial and human resources are sufficient; • Other regions, including developed country regions, are interested and participate in both rounds of interlaboratory assessment (OECD countries finance their participation).
<p>M4.1: First round of Interlaboratory assessment concluded and report available</p>			<p>30 June 2016</p>
<p>M4.2: Second round of Interlaboratory assessment concluded and report available</p>			<p>30 June 2018</p>
<p>5. Assessment reports contributing to regional report for the GMP undertaken, and a roadmap for sustainable POPs monitoring developed for the Asian region</p>	<ul style="list-style-type: none"> • # of assessments on POPs presence in the region and its capacity to analyse them <p><u>Baseline:</u> 0</p> <p><u>Target:</u> Two assessments, i.e. (i) presence of POPs through quantitative data; (ii) analytical capacity and performance of the national laboratories in the region</p> <ul style="list-style-type: none"> • # of regional roadmap for sustainable POPs monitor- 	<ul style="list-style-type: none"> • Assessment reports available through UNEP's website • Regional roadmap document • Report from final workshop available in UNEP's website 	<ul style="list-style-type: none"> • The quality of the data gathered through analysis of the matrices is of sufficient quality to undertake assessments and draw conclusions and lessons learned in order to design a roadmap • Project has proceeded at pace and coverage as anticipated • Financial and human resources are sufficient

	<p>ing in the region, with strategy for implementation, milestones and timetable in a regional roadmap.</p> <p><u>Baseline:</u> 0</p> <p><u>Target:</u> 1</p> <ul style="list-style-type: none"> • # of countries providing inputs to develop conclusions and lessons learned on GMP phase 2, as well as recommendations and future plans <p><u>Baseline:</u> 0</p> <p><u>Target:</u> At least 5 national sets of recommendations</p>		
M5.1: Draft report on the present situation of POPs in the region's environment and humans and draft regional summary report available			31 December 2017
M5.2: Final workshop concluded, with a report including conclusions, lessons learned, recommendations and roadmap for future monitoring plan in the Asian region			30 June 2018

ANNEX B: SITUATION ANALYSIS





ANNEX C: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

ANNEX D: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS¹²

A. PROVIDE DETAILED FUNDING AMOUNT OF THE PPG ACTIVITIES FINANCING STATUS IN THE TABLE BELOW:

N/A

¹² If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities.

ANNEX E: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF/NPIF Trust Fund or to your Agency (and/or revolving fund that will be set up)

N/A

ANNEX F: TECHNICAL INFORMATION ON PAS SAMPLING

1. Ambient air sampling using passive air samplers (PAS)

Generic principle of passive air samplers (PAS)

Ambient air monitoring for POPs is a challenging task. Next to the habitual difficulties inherent to the accurate detection and quantifications of POPs in environmental samples, the low concentrations of POPs in air require sampling techniques accumulating volumes of air that are large enough to overcome analytical detection limits. To sample large and well-known volumes of air within an acceptable period of time (typically a few hours to a few days), active air samplers proved to be the method of choice. However, active air samplers have some relevant disadvantages. Instrumental acquisition costs, demand of maintenance, as well as requirement of reliable power supply, are crucial limitations to the use of active air samplers, in particular in countries with limited financial resources.

Passive air samplers (PAS) have been developed as simple and cost-effective alternatives to active air samplers and they have been recommended for use in the global monitoring projects under the Stockholm Convention. Polyurethane foam (PUF) disks proved to be adequate adsorbents in PAS. PAS used in the UNEP/GEF projects are identical to the devices used in several previous networks; they consist of a PUF disk protected from dry and wet deposition by a stainless steel casing. The general layout and principle of the circulating air is shown in **Error! Reference source not found..**

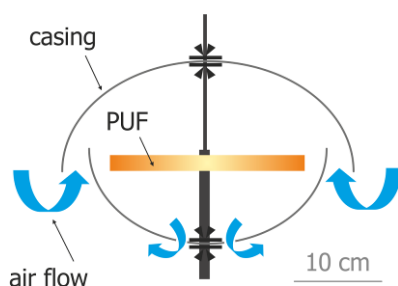


Figure 1 : Cross section through a passive air sampler (pas) equipped with a polyurethane foam (puf) disk as adsorbent for airborne persistent organic pollutants (pops)

Deployment of PAS and collection of PUF

In the UNEP/GEF monitoring projects, three types of passive air samplers have been and will be used. Such differentiation is necessary due to practical issues such as not to brake existing networks, *i.e.*, MONET in Africa, accessibility of samplers. Although slightly different in shape, all types follow the principle as shown above and the results have proven to be comparable. In the previous project, the respective providers of the samplers also provided cleaned PUFs, wrapped in aluminum foil; each PAS was delivered with five PUFs for a 1-year sampling: four PUFs for the four seasons and one in reserve or as a laboratory blank. Table shows the distribution of the PAS according to UNEP/GEF project and the providers.

PAS will be installed vertically at about 1.5 m to 2.0 m above ground or above the roof of a building. PAS will be exposed for two consecutive years in each country and PUFs will be changed every three months.

Table 1: Type and distribution of pas and pufs

Regional project	Provider/shipment from	Reference
Africa	Recetox	MONET
Asia	TBD	South-east Asia network
Pacific Islands	Tisch Co. (USA) through USP/IAS	GAPS
Latin America and the Caribbean	CSIC	Spanish network



Figure 2: PAS used in the GRULAC region



Figure 3: PAS used in the African region



Figure 4: PAS used in the Pacific Islands region

For the positioning and installation of samplers, a document with a standard operating procedure was prepared and provided to the participants of these projects. Whenever possible, the instructions provided in the standard operating procedure were followed by the operators on site. The regional representation of the sampling site was one of the most important criteria that had to be considered. Sampling locations should not be heavily influenced by POP emissions from very close local sources, but rather sample air representative of a wide region around the site.

A description of all selected sites was provided. PAS were located in urban and industrial regions, as well as in rural and remote sites (**Error! Reference source not found.**).

Location of PAS samplers

Table 2: GRULAC -location of sampling sites from GMP 1 project; site assignment for GMP 2 project (country, ISO-3 alpha code, site, type, latitude, longitude, altitude)

Country	ISO 3-apha code	Site	Type	Latitude	Longitude	Altitude (m a.s.l.)
Antigua and Barbuda	ATG	St. Phillip's	rural	17° 4' N	61° 45' W	17
Argentina	ARG	TBD at inception meeting				
Barbados	BRB	St. James or Christ Church ¹	urban	13° 11' N, 13° 05' N	59° 37' W, 59° 31' W	72, 97
Brazil	BRA	São Paulo	urban	23° 33' S	46° 43' W	727
Chile	CHL	Canal Melchor	rural	45° 35' S	72° 09' W	424
Colombia	COL	TBD at inception meeting				
Ecuador	ECU	Quito	urban	00° 13' S	78° 30' W	2820
Jamaica	JAM	Kingston	urban	17° 60' N	76° 47' W	2
Mexico	MEX	Monte Azules, Chiapas	background	16° 08' N	90° 54' W	50
Peru	PER	Lima	urban	11° 54' S	77° 03' W	162
Uruguay	URY	Montevideo	industrial	34° 51' S	56° 07' W	40

Table 3: West, East, and Southern Africa - location of sampling sites from GMP 1 project; site assignment for GMP 2 project (country, ISO-3 alpha code, site, type, latitude, longitude, altitude)

Country	ISO 3-apha code	Site	Type	Latitude	Longitude	Altitude (m a.s.l.)
Dem. Rep. Congo	COD	Kinshasa	urban	04° 21' S	15° 17' E	450
Ethiopia	ETH	Addis Ababa	urban	09° 01' N	38° 49' E	2383
Ghana	GHA	Accra	urban	5° 39' N	0° 10' W	77
Kenya	KEN	Nairobi	urban	01° 15' S	36° 44' E	1841
Mali	MLI	Bamako	urban	12° 06' N	08° 02' W	336
Mauritius	MUS	Reduit	urban	29° 13' S	59° 30' E	310
Morocco	MOR	TBD at inception meeting				
Nigeria	NGA	Abuja Sheda	rural	8° 53' N	7° 3' E	210
Senegal	SEN	Ngoye/Bambey	rural	14° 38' N	16° 25' W	23
Tanzania	TZA	TBD at inception meeting				
Togo	TGO	Kouma-Konda	rural	06° 57' N	00° 35' E	64
Tunisia	TUN	TBD at inception meeting				
Uganda	UGA	Soroti	urban	01° 42' N	33° 37' E	1061
Zambia	ZMB	Lusaka	urban	15° 19' S	28° 27' E	1152

Table 4: Pacific Islands location of sampling sites from GMP 1 project; site assignment for GMP 2 project (country, ISO-3 alpha code, site, type, latitude, longitude, altitude)

Country	ISO 3-alpha code	Site	Type	Latitude	Longitude	Altitude (m a.s.l.)
Fiji	FJI	Suva Nausori or Nadi	urban-industrial or rural	18° 08' S, 18° 02' S, 17° 45' S	178° 27' E, 178° 33' E, 177° 27' E	6, 30, 22
Kiribati	KIR	Tarawa or Beru	Urban or background	01° 21' N, 01° 21' S	172° 59' E, 175° 59' E	2
Marshall Islands	MHL	TBD at inception meeting				
Niue	NIU	Alofi	urban	19° 04' S	169° 55' E	59
Palau	PLW	Koror ¹	urban	7° 20' N	134° 28' E	20
Samoa	WSM	Apia ¹	urban	13° 50' S	171° 45'	141
Solomon Islands	SLB	Honiara, Munda or Lata	Urban or rural	09° 25' S, 08° 20' S, 10° 43' S	159° 58' E, 157° 15' E, 145° 48' E	55, 4, 24
Tuvalu	TUV	Funafuti	urban	08° 32' S	179° 12' E	3
Vanuatu	VUT	TBD at inception meeting				

Scheme for the set-up of the PAS and the analysis of POPs

Table 5: Assignment of samplers, PUFs, and analytes according to laboratory

No of sampler	Number of PUFs	Group of analytes / POPs in the group	Number of analyses <i>per</i> year
Sampler 1	PUFs 1-4	For basic POPs pesticides in expert back-up laboratory drins, chlordanes, DDTs, HCHs, heptachlors, mirex, HCB, pentachlorobenzene, endosulfans, toxaphenes, chlor-decone	4 toxaphene, annual sample only
Sampler 2	PUFs 1-4	For basic POPs in national POPs laboratory drins, chlordanes, DDTs, HCHs, heptachlors, mirex, HCB, pentachlorobenzene, endosulfans, toxaphenes, chlor-decone	4 toxaphene, annual sample only
Sampler 3	PUFs 1-4	For indicator PCB in expert back-up laboratory 6 indicator PCB	4
Sampler 4	PUFs 1-4	For indicator PCB in national POPs laboratory 6 indicator PCB	4
Sampler 5	PUFs 1-4	For dioxin-like POPs in expert back-up laboratory (combined into one extract as annual average) 17 PCDD/PCDF, 12 dl-PCB	1
Sampler 6	PUFs 1-4	For dioxin-like POPs in national dioxin laboratory (combined into one extract as annual average) 17 PCDD/PCDF, 12 dl-PCB	1
Sampler 7	PUFs 1-4	For dioxin-like POPs in expert back-up laboratory (each exposure to generate one seasonal data point; total of 4 per year and country) 17 PCDD/PCDF, 12 dl-PCB	4
Sampler 8	PUFs 1-4	For dioxin-like POPs in national laboratory (each exposure to generate one seasonal data point; total of 4 per year and country) 17 PCDD/PCDF, 12 dl-PCB	4
Sampler 9	PUFs 1-4	For BFR in expert laboratory 8 PBDE, HBCD, PBB	4
Sampler 10	PUFs 1-4	For BFR in national laboratory 8 PBDE, HBCD, PBB	4
Sampler 11	PUFs 1-4	For PFOS in expert laboratory 6 PFAS	4
Sampler 12	PUFs 1-4	For PFOS in national laboratory 6 PFAS	4

2. Countries that participated in the 5th round of the human milk survey

All efforts will be undertaken to support countries that participated in the 5th round of the WHO/UNEP milk survey participating in the component 3 of this project, *i.e.*, 6th round of the human milk survey. The following table summarizes the institutions that have been supported in the 5th round

Table 6: Africa - countries and coordinators where human milk samples were collected and analysed during the implementation of the regional project during GMP phase 1

Country	Laboratories	Human milk coordinator
DR Congo		Prof. Dr José OKON-D'AHOKA Université Pédagogique Nationale (UPN) Directeur du Programme National de Promotion de la Médecine Traditionnelle et des Plantes Médicinales (PNMT/PM) Ministère de la Santé Kinshasa/RD Congo Email: okondahu-ka_fr@yahoo.fr
Egypt	The Central Laboratory of Residue Analysis of Pesticides and Heavy Metals in food	Prof. Dr. Gehad Abu Al Atta Laboratory coordinator: Elmarsafy Ashraf Mahmoud Central Lab of Residue Analysis of Pesticides and Heavy metals in Food (QCAP). 208 Port Saied St. Elsaida zenab – Cairo Email: Ashnour@live.com
Ethiopia	No established POPs labora- tory	Mr. Habtamu Wodajo Environmental Protection Authority Laboratory Addis Ababa Email: habwodajo@yahoo.com
Ghana	Pesticide Residue Laboratory (Organic Residue Laboratory) of GAEC.	Dr. Edith Clarke Occupational and Envi-ronmental Health Unit, Gha- na Health Service, PMB, Ministries, Accra Email: essieclarke@yahoo.com; ochealth@ghana.com
Kenya	Laboratory at the Depart- ment of Chemistry, Universi- ty of Nairobi	Dr. Ms. Laetitia Kanja Department of Public Health, Pharmacology & Toxicology, College of Agriculture & Veterinary Sciences, University of Nairobi, Kabete Kampus, Nairobi Email: lkanja@uonbi.ac.ke
Mali	Environmental Toxicology and Quality Control Labora- tory (ETQCL), Bamako	Dr. Samaké Raki Ba Direction Nationale de la santé, Division nutrition Ntomikorobougou Bamako Email: rbasamake@yahoo.fr rbasamake@yahoo.fr
Mauritius	National Environment Labora- tory at Reduit	Dr. Surnam NCD/BF coordinator Ministry of Health and Quality of Life
Nigeria	National Laboratory (Jawura Environmental Services Lim-	Dr. Obi Anyadiegwu Chief consultant Hospi-talia Consultaire

	ited)	Masaka Close, Zone 7 Abuja
Senegal	The Ceres-Locustox Foundation, Dakar	Dr. Aminata Touré Responsable du Departement de Toxicovigilance, Centre Antipoison; Dakar Email: amitoure@hotmail.com
Togo		Madame GOTO Ekpeti Chantal, Directrice des Laboratoires d'Analyse Chimique a l'Institut Togolais de Recherche Agricole, BP : 1163, Email : itra@cafe.tg
Uganda	Government Analytical Laboratory (DGAL) – the POPs Laboratory Pesticide Residue Laboratory	Dr. Agaba. Edson. Friday Ministry of Health, National Drug Authority Plot 46 – 48 Lumumba Avenue P.O. Box.23096 Kampala Email: agabafriday@hotmail.com and agaba_friday@yahoo.co.uk
Zambia		Dr. Nanthalile Mugala Consultant Paediatrician Diplomat: Child, Environment and Health P. O. Box 50380 Lusaka Email: nmugala@yahoo.com

Table 7: Pacific Islands countries and coordinators where human milk samples were collected and analysed during the implementation of the regional project during GMP phase 1

Country	Institution	Human milk coordinator
Niue	Department of Environment	Haden Talagi Project Coordinator Email: haden.talagi@mail.gov.nu / h_talagi@mail.nu
Samoa	Division of Environment and Conservation Ministry of Natural Resources and Environment	Fuatino Matatumua-Leota Principal Chemicals & Hazardous Waste Management Officer Email: fuatino.leota@mnre.gov.ws, fuatinol@gmail.com
Solomon Islands	Environment and Conservation Division (ECD) Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM)	Rosemary Apa Chief Environment Officer Email: rosemaryapa@gmail.com

Table 8: GRULAC countries and coordinators where human milk samples were collected and analysed during the implementation of the regional project during GMP phase 1

Country	Laboratories	Human milk coordinator
Antigua and Barbuda		Dr. Linroy Christian Department of Analytical Services Dunbars, Friars Hill, St. John's, Email: lichristian@apuainet.ag
Brazil	The Laboratory of the Center for Worker's Health and Human Ecology at FIOCRUZ	Ana Maria C. B. Braga, Thomas Krauss Fundação Oswaldo Cruz (FIOCRUZ) National School of Public Health, Centre for Workers Health and Human Ecology Studies Rua Leopoldo Bulhões, 1480, Manguinhos. Rio de Janeiro, RJ
Jamaica	Ministry of Public Health CEAC in Guayaquil	National coordinator: Prof. Tara Dasgupta Pesticide Research Laboratory Department of Chemistry University of the West Indies Email: tara.dasgupta@gmail.com tara.dasgupta@uwimona.edu.jm
Chile	Sub Departamento del Ambiente, Instituto de Salud Pública de Chile Av. Maratón 1000, Santiago E-mail : itrivino@ispch.cl	Ivan Triviño Sub Departamento del Ambiente Instituto de Salud Pública de Chile Av. Maratón 1000, Santiago E-mail : itrivino@ispch.cl
Ecuador	Did not submit a human milk sample	
Mexico		National coordinator: Ms. Ana Patricia Martínez Bolívar Director of Research on Atmospheric Monitoring and Analytical Characterization of Pollutants, National Centre for Environmental Research and Training, National Institute of Ecology Email: mabaorta@prodigy.net.mx , abolivar@ine.gob.mx
Peru	General Directorate of Environmental Health (DIGESA) – Ministry of Health Email: sosorio@digesa.minsa.gob.pe	National coordinator: Biol. E. Soledad Osorio Alva Director of the Environmental Control Laboratory. General Directorate of Environmental Health (DIGESA) – Ministry of Health Email: sosorio@digesa.minsa.gob.pe
Uruguay	LATU Technological Laboratory of Uruguay (LATU) Av. Italia 6201, Montevideo Email: atorre@latu.org.uy	National coordinator: Chem. Gabriela Medina Head of the Department of Solid Waste – Environmental Performance and Control Division, Ministry of Housing, Land Use and Environment Email: gabriela.medina@dinama.gub.uy

3. Laboratories identified in developing countries to analyse POPs

The following laboratories have participated in the first phase of the UNEP/GEF GMP. It is attempted to engage them in this GMP2 project and further enhance their capacities and capabilities. For countries, participating for the first time in the GMP project, the national coordinator together assisted by UNEP will identify a national laboratory and nominate for the project. It is expected that not all countries will have operational POPs laboratories.

Table 9: Laboratories from the African region that participated in the regional project during GMP phase 1

Country	Name of laboratory	Name of laboratory
Congo DR	Did not have an operational laboratory for POPs analysis during GMP 1	
Egypt	Central Lab of Residue Analysis of Pesticides and Heavy Metals in Food (QCAP). 208 Port Saied St. Elsaïda zenab Cairo Email: Ashnour@live.com	
Ethiopia	Did not have an operational laboratory for POPs analysis during GMP 1	
Ghana	Department of Chemistry National Nuclear Research Institute Ghana Atomic Energy Commission (GAEC) P.O. Box LG 80, Legon-Accra E-mail: dedehosae@fastmail.fm	
Kenya	Chemistry Department, University of Nairobi, Box 30197, Nairobi E-mail: madadivin2002@yahoo.com , vmadadi@uon.ac.ke	
Mali	Environmental Toxicology and Quality Control Laboratory, Central Veterinary Laboratory, BP 2295 Bamako E-mail: berthesafiatou@yahoo.com	Division Nutrition Direction Nationale de la Santé, Ministère de la Santé, BP 233 Bamako E-mail: rbasamake@yahoo.fr
Morocco	TBD by national coordinator at inception	
Mauritius	Department of Environment National Environmental Laboratory Ministry of Environment and Sustainable Development, National Laboratories Complex, Reduit E-mail: srojubally@gmail.com	Government Analyst Division Ministry of Health and Quality National Laboratories Complex, 1 st . floor, Reduit E-mail: vgoury@gmail.com

Country	Name of laboratory	Name of laboratory
Nigeria	TBD by national coordinator at inception	
Senegal	Unité Chimie Environnementale Fondation de CERES-LOCUSTOX Km. 15 route de Rufisque, BP 3300 Dakar E-mail: cereslocustox@orange.sn , bgad-ji@yahoo.fr	
Tanzania	TBD by national coordinator at inception	
Togo	Did not have an operational laboratory for POPs analysis during GMP 1	
Tunisia	TBD by national coordinator at inception	Centre International des Technologies de l'Environnement de Tunis (CITET), Tunis, has been pre-assigned for human milk/biological matrices
Uganda	Toxicology & Pesticide Residue Laboratories Government Analytical Laboratory Ministry of Internal Affairs Plot 2 Lourded Road, Nrikasero Hill Wandegeya, P.O.Box 2174, Kampala E-mail: ekaye50@yahoo.com	
Zambia	Department of Chemistry, University of Zambia, P.O. Box 32379, 10101 Lusaka E-mail: chiposyabb@yahoo.com , lengwe_judy@yahoo.com	

Table 10: Laboratories from the GRULAC region that participated in the regional project during GMP phase 1

Country	Name of laboratory	Name of laboratory
Antigua and Barbuda	Department of Analytical Services UNEP/Secretariat of the Secretariat Convention, Dunbars, Friars Hill, St. John's E-mail: lchristian@apuainet.ag	
Barbados	Government Analytical Services Culloden road BB 14018 St. Michael E-mail : pesticides@gas.gov.bb	
Brazil	Physical Chemical Analysis Division CETESB-Companhia Ambiental do Estado de São Paulo E-mail: myumikot@cetesbnet.sp.gov.br	National School of Public Health Oswaldo Cruz Foundation Rua Leopoldo Bulhões 1480 Manguinhos, Rio de Janeiro E-mail: thomas@ensp.fiocruz.br
Chile	Centro de Investigación de Ecosistemas de la Patagonia (CIEP), Bilbao 449 Coyhaique E-mail : rquiroz@intesa.cl	Sub Departamento del Ambiente Instituto de Salud Pública de Chile Av. Maratón 1000, Santiago E-mail : itrivino@ispch.cl
Colombia	TBD by national coordinator at inception	
Ecuador	Laboratorios de Agrocalidad Av. Amazonas y Eloy Alfaro, Edificio del	

Country	Name of laboratory	Name of laboratory
	MAGAP, Noveno piso Quito Email: liliarecalde@yahoo.com	
Jamaica	Department of West Indies University of the West Indies Mona, Kingston 7 E-Mail: tara.dasgupta@gmail.com , Raymond.reid@uwimona.edu.jm	
Mexico	Research and Analytical Characterization of Pollutants National Institute of Ecology San Rafael Atlixco No. 186 Col. Vicentina 09340 México D.F. E-mail : totuno@ine.gob.mx	
Peru	Atmospheric Pollutants Laboratory Environmental Control Laboratory Dirección General de Salud Ambiental Calle los Pinos 259 Urb. Camacho La Molina, Lima 12 E-mail: avega@digesa.minsa.gob.pe	Environmental Control Laboratory Or- ganic Functional Unit Dirección General de Salud Ambiental – DIGESA, Ministry of Health Jr. Las amapolas No. 350 Lince Lima 14 E-mail: digesa@digesa.minsa.gob.pe
	Director del Centro de Control de Insumos y residuos Tóxicos. Servicio Nacional de Sanidad Agraria – SENASA E-mail: olucas@senesa.gob.pe	
Uruguay	Laboratorio Tecnológico del Uruguay LATU Av. Italia 6201 Montevideo E-mail: atorre@latu.org.uy	Departamento Laboratorio Ambiental DINAMA Dirección Nacional de Medio Ambiente Ministerio de Vivienda, Ordenamiento Territorial y Medio Ambiente Galicia 1133, Montevideo http://www.dinama.gub.uy/rlau/

Table 11: Laboratories from the Pacific Islands region that participated in the regional project during GMP phase 1

Country	Name of laboratory	Name of laboratory
Fiji	Institute of Applied Sciences, University of the South Pacific Suva, E-mail: aalbersberg@usp.ac.fj	
Kiribati	Did not have an operational laboratory for POPs analysis during GMP 1	
Marshall Islands	Did not have an operational laboratory for POPs analysis during GMP 1	
Niue	Did not have an operational laboratory for POPs analysis during GMP 1	
Palau	Did not have an operational laboratory for POPs analysis during GMP 1	
Samoa	Did not have an operational laboratory for POPs analysis during GMP 1	
Solomon Islands	Did not have an operational laboratory for POPs analysis during GMP 1	
Tuvalu	Did not have an operational laboratory for POPs analysis during GMP 1	
Vanuatu	TBD by national coordinator at inception	

Table 12: Laboratories from the South-East Asian region that are pre-assigned to participate in this GMP 2 project

Country	Name of laboratory	Name of laboratory
Cambodia	Environmental Quality Research and Laboratory (MOE_LAB)	
Indonesia	TBD by national coordinator at inception	
Lao PDR	TBD by national coordinator at inception	
Mongolia	TBD by national coordinator at inception	
Philippines	TBD by national coordinator at inception	
Thailand	Dioxin Lab - VEA VietRus Center (VRTC)	
Vietnam	TBD by national coordinator at inception	

4. Laboratories that participated in the 1st and 2nd rounds of the interlaboratory assessments

Two rounds of interlaboratory assessments have been undertaken in 2009-2011 and 2012-2013. The participation of developing country laboratories has been supported through UNEP/GEF, UNEP/SAICM projects and bilateral donors such as the government of Norway (1st round) and the European Union (2nd round).

Table 13: Laboratories from Africa that participated in the global inter-laboratory assessments

Country	Name of laboratory	City	1 st	2 nd
Egypt	Central Laboratory of Residue Analysis of Pesticides and Heavy Metals in Food	Dokki, Giza	X	
Ghana	Pesticide Residue Laboratory, Ghana Atomic Energy Commission	Accra	X	X
Kenya	Kephis Analytical Chemistry Laboratory	Nairobi	X	X
Kenya	Department of Chemistry, University of Nairobi	Nairobi	X	X
Mali	Central Veterinary Laboratory	Bamako	X	X
Mauritius	Government Analyst Division	Reduit		X
Nigeria	Analytical & Environmental Lab, Chemistry Department, University of Lagos	Lagos		X
Sénégal	Ceres Locustox	Dakar	X	X
Tunisia	CITET	Tunis		X
Uganda	Directorate Of Government Analytical Laboratory	Kampala	X	X
Zambia	University of Zambia, Department of Chemistry, Analytical Services Laboratory	Lusaka	X	X

Table 14: Laboratories from Asia that participated in the global inter-laboratory assessments

Country	Name of laboratory	City	1 st	2 nd
Thailand	SECOT Co., Ltd.	Bangkok	X	X
Thailand	Environmental Laboratory	Bangkok	X	
VietNam	Institute of Marine Environment and Resources (IMER)	Haiphong	X	
Viet Nam	Center of analytical service and experimentation of Hochiminh city, Vietnam	Ho Chi Minh		X
Vietnam	Dioxin Laboratory	Ha Noi	X	X
Vietnam	Chemical and Environmental Department	Hanoi	X	X
Vietnam	Research center for Environmental Technology and Sustainable Development, VNU University of Science	Hanoi	X	X

Table 15: Laboratories from Pacific Islands that participated in the global inter-laboratory assessments

Country	Name of laboratory	City	1 st	2 nd
Fiji	Institute of Applied Sciences, University of the South Pacific	Suva	X	X

Table 16: Laboratories from GRULAC that participated in the global inter-laboratory assessments

Country	Name of laboratory	City	1 st	2 nd
Argentina	INTI Argentina	San Martín	X	X
Argentina	Lab. Environ. Chemistry & Biogeochem, University of La Plata	Florencio Varela	X	
Barbados	Governmental Analytical Services Laboratory	St. Michael	X	
Brazil	Laboratório Nacional Agropecuário - Lanagro/Mg	Pedro Leopoldo, MG	X	X
Brazil	Lab. de Microcontaminantes Orgânicos e Ecotoxicologia Aquática (CONECO)	Rio Grande	X	X
Brazil	Divisão de Análises Físico-Químicas CETESB	São Paulo	X	
Brazil	Escola Nacional de Saúde Pública (ENSP/CESTEH), Fundação Oswaldo Cruz (FIOCRUZ)	Rio de Janeiro	X	
Chile	Centro EULA - Barrio Universitario S/N Universidad de Concepción.	Concepcion	X	
Chile	FARMAVET Lab. De Farmacología vet. Area de Dioxinas Universidad de Chile	Santiago de Chile		X
Chile	Instituto de Salud Pública de Chile	Santiago	X	
Colombia	Laboratorio de Cromatografía, Universidad Industrial de Santander	Bucaramanga	X	X
Colombia	Laboratorio de Análisis de Contaminantes Persistentes	Medellín	X	
Ecuador	Laboratorio De Plaguicidas De Agrocalidad	Quito	X	X
Jamaica	Pesticide Research Laboratory Department of Chemistry, University of the West Indies	Kingston	X	X
México	National Center of Environmental Research and Training	Mexico, D.F.	X	X
Mexico	Cinvestav Unidad Merida	Merida, Yucatan	X	
Perú	Dirección de Laboratorio de Control Ambiental	Lima	X	
Perú	Unidad del Centro de Control de Insumos y Residuos Tóxicos	Lima	X	
Uruguay	Laboratorio Tecnológico del Uruguay (LATU)	Montevideo	X	X
Uruguay	Departamento Laboratorio Ambiental DINAMA	Montevideo	X	X
Uruguay	Laboratorio de Análisis Orgánico, Facultad de Química	Montevideo	X	

ANNEX G: TERMS OF REFERENCES OF PROJECT PLAYERS

The VEA will help UNEP in regional coordinating the project and will undertake the following activities:

1. Organize a sub-regional inception workshop to prepare a detailed workplan for the project implementation and to agree on Standard Operational Procedures (SOPs);
2. Liaise with the national coordinators in six participating countries and assist in the development and maintenance of the monitoring networks for air, water, human milk and support UNEP in doing agreements with the national coordinators in participating countries;
3. Coordinate the available sub-regional information for designing the workplan of this project such as existing analytical manuals and procedures, and subsequently assist in the joint development of the training and capacity building needs;
4. Coordinate provision of the necessary infrastructure to collect relevant samples in all participating countries;
5. Write a final report summarizing the activities undertaken in this project including lessons learned and future needs;
6. Provide regular updates on project progress to UNEP/DTIE Chemicals Branch and assist UNEP in the day-to-day work of project implementation;
7. Support UNEP in writing the financial statement on expenditures occurred during project implementation.

National Coordinator:

Each participating country will have a National Coordinator who is national focal point and responsible for coordinating activities in the country, include of:

1. Receiving project information from UNEP, VEA and other stakeholders and be responsible for execution at national level;
2. Contacting and connecting agencies, institutions and consultants in order to coordinate implementation activities; especially with view on the establishment and maintenance of the monitoring network for air, water, human milk;
3. Directly participating and supporting project activities conducted in the country;
4. Report on a regular basis to the executing agencies and its partners/stakeholders and nominate national experts, stakeholders, etc. ;
5. Prepare the final technical national report;
6. Manage the budget allocated to the national activities.

Partner Laboratories and Institutions/Consultants in the participating countries will:

1. Identify and assign national coordinator and national laboratories (the national coordinator will liaise with VEA as the sub-regional coordinator);
2. In cooperation with VEA identify the experts for the national ambient air, water, human milk and human's blood monitoring network and enter into an agreement with them;

3. Provide the necessary information for designing the workplan of this project such as existing analytical manuals and procedures, and subsequently assist in the joint development of the SOPs, the training and capacity building needs;
4. Receive the expert back-up laboratory and UNEP/DTIE Chemicals Branch for the inspection tour at the onset of the project and convene relevant meetings with governmental sectors concerned with POPs analysis (where POPs laboratories exist);
5. Grant access for the back-up laboratory to the laboratory/laboratories for the training course and ensure participation of relevant staff at the training course (where POPs laboratories exist adequately equipped to participate with chemical analyses in this project);
6. Coordinate provision of the necessary infrastructure to collect relevant samples in the respective participating countries;
7. Analyze the agreed samples and submit the results to the expert back-up laboratories and UNEP/DTIE Chemicals Branch (where POPs laboratories exist adequately equipped to participate with chemical analyses in this project);
8. Participate at the final workshop to discuss results and exchange views;
9. Write a final report on the activities undertaken by the laboratory (also for laboratories where only sampling may be performed) including the results, lessons learned, and future needs as well as from the national experts for air, water, human milk and human's blood networks;
10. Write the financial statement on expenditures occurred for the national activities undertaken during project implementation for this country and submit to the sub-regional coordinator.

The Expert Laboratory/ies will provide the following services:

1. Participate at the first regional workshop and provide input to the Standard Operating Procedure (SOP) development;
2. Undertake an inspection tour to the developing country laboratories – either physically or electronically - to verify infrastructure and operation of the laboratory (this activity is foreseen back-to-back with item 1 above);
3. Define needs for upgrading the laboratory with respect to spares, consumables, and training needs;
4. Prepare a report on the inspection tour and a work program for each of the laboratories for the coming months;
5. Undertake the training in the pilot laboratory according to needs identified; provide and analyze samples as a Quality Assurance/Quality Control (QA/QC) tool;
6. If adequate, organize a central training for the analysis of PFOS and brominated flame retardants if the number of such laboratories will be small;
7. Provide the necessary spares and consumables to the laboratories;
8. Prepare training manuals and final report on work undertaken in the feasibility study;
9. Provide support to the developing country laboratories and to UNEP/DTIE Chemicals Branch throughout the project

APPENDICES

1. Acronyms and abbreviations
2. Overall Project Budget
3. GEF Budget by project component and UNEP budget lines
4. Co-financing by source and UNEP Budget lines
5. Public awareness, communications and mainstreaming
6. Environmental and social safeguards
7. Workplan and timetable
8. Key deliverables and benchmarks
9. Summary of reporting requirements and responsibilities
10. Standard terminal evaluation
11. Decision making flowchart and Organigram
12. Terms of reference
13. Co-financing commitment letters from project partners
14. Endorsement letters of GEF National Focal Points
15. Draft Procurement plan
16. Tracking tools (not available)
17. Supervision Plan