



# PROJECT IDENTIFICATION FORM (PIF) <sup>1</sup>

PROJECT TYPE: Full-sized Project  
 TYPE OF TRUST FUND: GEF Trust Fund

## PART I: PROJECT IDENTIFICATION

Project Title:	Continuing regional Support for the POPs Global Monitoring Plan under the Stockholm Convention in the Africa Region		
Country(ies):	DR Congo, Egypt, Ethiopia, Ghana, Kenya, Mali, Morocco, Mauritius, Senegal, Tanzania, Togo, Tunisia, Uganda, Zambia	GEF Project ID: <sup>2</sup>	4886
GEF Agency(ies):	UNEP	GEF Agency Project ID:	
Other Executing Partner(s):	UNEP/DTIE Chemicals Branch together with Environmental Toxicology and Quality Control Laboratory, Mali and University of Nairobi, Chemistry Department, Nairobi, Kenya	Submission Date:	11.09.2012
GEF Focal Area (s):	Persistent Organic Pollutants	Project Duration (Months)	48
Name of parent program (if applicable): <ul style="list-style-type: none"> <li>• For SFM/REDD+ <input type="checkbox"/></li> </ul>		Agency Fee (\$):	420,800

### A. FOCAL AREA STRATEGY FRAMEWORK<sup>3</sup>:

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
CHEM-1	1.5 Country capacity built to effectively phase out and reduce releases of POPs	1.5 Country capacity built to effectively phase out and reduce releases of POPs	GEFTF	3,948,000	6,614,000
(select) (select)			(select)		
(select) (select)	Others		(select)		
Sub-Total				3,948,000	6,614,000
Project Management Cost <sup>4</sup>			GEFTF	200,000	1,848,000
Monitoring and Evaluation			GEFTF	60,000	0
<b>Total Project Cost</b>				<b>4,208,000</b>	<b>8,462,000</b>

<sup>1</sup> It is very important to consult the PIF preparation guidelines when completing this template.

<sup>2</sup> Project ID number will be assigned by GEFSEC.

<sup>3</sup> Refer to the reference attached on the [Focal Area Results Framework](#) when filling up the table in item A.

<sup>4</sup> GEF will finance management cost that is solely linked to GEF financing of the project. PMC should be charged proportionately to focal areas based on focal area project grant amount.

## B. PROJECT FRAMEWORK

<b>Project Objective:</b> To strengthen capacity for implementation of the revised POPs Global Monitoring Plan in the African region and create the conditions for sustainability of the networks						
<b>Project Component</b>	<b>Grant Type</b>	<b>Expected Outcomes</b>	<b>Expected Outputs</b>	<b>Trust Fund</b>	<b>Indicative Grant Amount (\$)</b>	<b>Indicative Co-financing (\$)</b>
Develop the regional components for the project	TA	Regional coordination of POPs monitoring activities for implementation of the revised Global Monitoring Plan is strengthened, taking into account the lessons learned from the first project	<ol style="list-style-type: none"> <li>1. Functional regional management structure</li> <li>2. Detailed workplan for the project, including strategies for demonstrating the value of monitoring data for national policy-making</li> <li>3. Updated UNEP POPs laboratory database, including laboratories from newly included countries and information related to new POPs and new matrices</li> <li>4. List of needs of identified laboratories for POPs analysis</li> </ol>	GEFTF	236,000	362,000
Upgrade the network for air samples to comply with the revised and amended guidance document and include more sites/countries	TA	Network for air samples in the region is upgraded, including more sites/countries and in compliance with revised and amended guidance document	<ol style="list-style-type: none"> <li>1. Clear Terms of Reference for participants in the air sampling network</li> <li>2. Sites description for new air samplers</li> <li>3. Existing samplers include newly listed POPs and sustainability of existing sorbents tested</li> <li>4. Needs for the creation of a global network of active samplers assessed</li> </ol>	GEFTF	660,000	1,768,000
Training	TA	Technical personnel is able to carry out sampling in participating countries and analysis in designated laboratories of the 12+10 POPs	<ol style="list-style-type: none"> <li>1. Strengthened capacity of participating laboratories for sampling and analysis of the 12+10 POPs in core matrices</li> <li>2. Enhanced knowledge of methodologies for monitoring PFOS in water</li> <li>3. Enhanced knowledge of methodologies for monitoring brominated flame retardants</li> </ol>	GEFTF	1,862,000	2,884,000
Quality enhancement	TA	Quality of laboratory analysis of presence of POPs in African countries enhanced	<ol style="list-style-type: none"> <li>1. Plan for inter-laboratory framework</li> <li>2. Documented results of analysis of reference materials and proficiency tests from the 2nd inter-calibration study</li> <li>3. List of recommendations for strengthening of the plan for inter-laboratory framework</li> <li>4. Documented results of analysis of reference materials and proficiency tests from the 3rd inter-calibration study</li> </ol>	GEFTF	280,000	400,000

Analysis of national GMP samples	TA	High quality data on presence of POPs in African countries available	1. Mothers' milk sample containers collected; pools prepared, and shipped to the laboratories 2. Cartridges from air samplers collected and shipped to the laboratories 3. Samples analyzed at subregional POPs laboratory and in back-up laboratories 4. Summary reports	GEFTF	560,000	900,000
Lessons learned and dissemination of results	TA	Governments and stakeholders engaged in the implementation of the GMP issue in countries and reporting to Conference of the Parties	1. A list of recommendations for development of the action plan for the establishment of sustained POPs monitoring infrastructure in the region, taking into account the outcomes of and lessons learned from the project 2. Plan for the establishment of sustained laboratory infrastructures in the region, including a business plan 3. Lessons learned collected and collated in a lessons learned report 4. Reports and information material for dissemination of the project's results at national and international levels	GEFTF	350,000	300,000
Sub-Total					3,948,000	6,614,000
Project Management Cost <sup>5</sup>				GEFTF	200,000	1,848,000
Evaluation cost (UNEP)				GEFTF	60,000	-
<b>Total Project Costs</b>					<b>4,208,000</b>	<b>8,462,000</b>

### C. INDICATIVE Co-financing FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
National Government	DR Congo, Egypt, Ethiopia, Ghana, Kenya, Mali, Morocco, Mauritius, Senegal, Tanzania, Togo, Tunisia, Uganda, Zambia	Unknown at this stage	8,262,000
GEF Agency	UNEP	In-kind	200,000
<b>Total Co-financing</b>			<b>8,462,000</b>

### D. GEF/LDCF/SCCF/NPIF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY<sup>1</sup>

GEF Agency	Type of Trust Fund	Focal Area	Country Name/Global	Grant Amount (a)	Agency Fee (b) <sup>2</sup>	Total c=a+b
UNEP	GEFTF	Persistent Organic Pollutants	Regional	4,208,000	420,800	4,628,800
<b>Total Grant Resources</b>				<b>4,208,000</b>	<b>420,800</b>	<b>4,628,800</b>

<sup>1</sup> 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

<sup>2</sup> Please indicate fees related to this project.

<sup>5</sup> Same as footnote #3.

## **PART II: PROJECT JUSTIFICATION**

### **A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

#### A.1.1 The [GEF focal area/LDCF/SCCF](#) strategies /[NPIF](#) Initiative:

The GEF is the 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 1<sup>st</sup> 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.*” The project is therefore in line with the GEF chemicals strategy’s objective 1: phase out POPs and reduce POPs releases.

#### A.1.2. For projects funded from LDCF/SCCF: the LDCF/SCCF eligibility criteria and priorities:

NA

#### A.1.3 For projects funded from NPIF, relevant eligibility criteria and priorities of the Fund:

NA

#### A.2. National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NIPs, PRSPs, NPFE, etc.:

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

### **B. PROJECT OVERVIEW:**

#### B.1. Describe the baseline project and the problem that it seeks to address:

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 regional and global transport. The GMP focuses initially on the core media 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. Among other things, the Monitoring Report stresses the limited data available and constrained capacity for sustained monitoring in the African region. In order to improve this situation for future assessments, the reports stresses that “*Capacity-building for persistent organic pollutant monitoring programmes for most countries in the region remains the top priority recommendation*” and provides some detailed recommendations in this regard. These include in particular: “*performance of inter-calibration tests; improving skills for sampling and analysis; strengthening the infrastructure in existing laboratories to provide capability to analyse the core media; institution of quality assurance and quality control policies and procedures; and financial assistance to establish long term programmes and self-sufficient laboratories.*” (Stockholm Convention on Persistent Organic Pollutants (December 2008), *First Regional Monitoring report Africa Region*, <http://chm.pops.int/Portals/0/Repository/COP4/UNEP-POPS-COP.4-INF-19.English.PDF> )

The COP4 also 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) and during COP5 added endosulfan as a POP to be listed in Annex A (Decision SC-5/3).

This project will be designed based on the results from the GEF GMP project (2009-2012), which focused on the 12 original POPs. This project will include the new POPs added during COP-4 and COP-5. This project will also continue the training of staff in participating laboratories and strengthening the performance of sampling and analysis that 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 African countries for monitoring POPs concentrations in the key media and will facilitate reporting under the effectiveness evaluation. This project will also develop a long-term effectiveness evaluation plan for the region, which will ensure frequent generation of data and provision of it to the Stockholm Convention.

As Parties to the Convention, African 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. Two GEF MSP projects entitled “Supporting the Implementation of the Global Monitoring Plan of POPs in Eastern, Southern African Region or Western African Countries”, *resp.* were conducted in Africa by UNEP DTIE Chemicals Branch with financial assistance from the GEF from 2009 to 2012, in parallel to three other regional projects (Pacific Islands Region, and GRULAC). This project enabled provision of quality data on human exposure and environmental concentration of the 12 POPs originally included for the effectiveness evaluation.

This series of projects has generated an abundance of results and lessons learned. Highlights include:

**Capacity building at POPs Laboratories:**

In the four UNEP/GEF GMP project participated 28 countries from the Pacific Islands, African and Latin American/Caribbean regions; four more countries from GRULAC – Bahamas, Barbados, Cuba, and Haiti – received similar training from UNEP financed by the SAICM QSP programme, which served as co-financing to the GRULAC GEF MSP project. This complementarity resulted in the following training courses that UNEP organized in the regions through its Expert Laboratories:

Region (Funding)	Number of training courses for POPs Labs	Number of countries participating
Pacific project (GEF)	1	8
West Africa project (GEF)	3	6
South-East Africa project (GEF)	5	6
GRULAC Project (GEF):	7	8
GRULAC Project (SAICM)	2	4
Regional WS (AMS, BCN):	2	
<b>Total:</b>	<b>20</b>	<b>32</b>

In addition, developing country laboratories have been provided with consumables and small materials such as GC columns, analytical standards, solvents or sorption materials. In the African region through the two UNEP/GEF MSP projects, the UNEP Expert Laboratories at IVM VU Amsterdam and Örebro University trained laboratories in Egypt, Ghana, Kenya, Mali, Mauritius, Senegal, Uganda, and Zambia. The Democratic Republic of Congo, Ethiopia and Togo did not have POPs laboratories. In Nigeria, it was not possible to realize a training session, however, the laboratory has been supplied with the protocols. In general, it can be stated that all laboratories had some experiences with POPs analysis and equipment was present although sometimes not fully operational. Further, it should be noted that in Egypt, a well established dioxin laboratory was present that also successfully participated at the interlaboratory study. The main objective of the training was towards the core matrices, polyurethane foams (PUFs) and mothers’ milk but also other matrices of national interest were included.

**Mothers’ milk**

The WHO/UNEP protocol for the collection and analysis of pooled mothers’ milk has been adapted by the regional coordinator to the national needs. Where necessary, advise and courses were given. The WHO/UNEP Reference laboratory in Freiburg, Germany, provided the countries with glassware

where necessary. From the African region a quite comprehensive set of mothers' milk pool were received. It should be noted that the first set consisted of the co-financed samples (from Stockholm Convention secretariat through agreement between UNEP and WHO) from Democratic Republic of Congo, Ghana, Kenya, Mali, Mauritius, and Uganda. The second set of samples was collected and analyzed during these two African GEF projects and included only the sample from Togo; Ethiopia will have the sample ready in spring 2012.

POPs could be detected in all samples from all regions; however at different scales. Highest concentrations were observed for DDT, followed by PCB. Aldrin and endrin were not identified in any sample; mirex and toxaphene were detected only in few cases and at low concentrations. Dioxin-like POPs were detected in all samples with PCDD/PCDF and dioxin-like PCB (dl-PCB) contributing to the total toxic equivalent (TEQ). Interestingly, there were countries with higher contribution through PCDD/PCDF; others had more PCB. In the GRULAC region, PCDD/PCDF and dl-PCB were present in all samples. For comparison, the total TEQ in the Africa region was 12.5 pg g<sup>-1</sup> fat; similar to the PCDD/PCDF concentrations in the GRULAC region, which ranged from 2.4 pg TEQ g<sup>-1</sup> fat to 9.7 pg g<sup>-1</sup> fat; dl-PCB were lower and the total TEQ had a maximum of 12.1 pg-g<sup>-1</sup> fat.

In African samples the DDT concentrations ranged from 211 ng g<sup>-1</sup> fat to 1,743 ng g<sup>-1</sup> fat, which was higher than in the GRULAC region (range: 119 ng g<sup>-1</sup> fat-626 ng g<sup>-1</sup> fat). At a late stage in 2012, the pooled sample from Ethiopia came in with the highest concentration of DDTs that were analysed by the WHO/UNEP Reference Laboratory so far. More than 20,000 ng DDTs per gram fat were detected; notably, about 50% of these were from "fresh" p,p'-DDT. In general, POPs pesticides but also PCB were higher in Africa than in Latin America; toxaphenes, heptachlors were typically below 10 ng g<sup>-1</sup> fat. HCB had a maximum of 14 ng g<sup>-1</sup> fat in GRULAC and only 5 ng g<sup>-1</sup> fat in Africa. Mirex was the only POP that had higher concentrations in GRULAC than in Africa (a known fact that mirex had very limited applications in the past. Drins were higher in Africa (11.2 ng g<sup>-1</sup> fat) than in the GRULAC region (max 7.6 ng g<sup>-1</sup> fat) but still in the same order of magnitude.

#### **Ambient air with Passive Air Samplers (PAS)**

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 analyzed for POPs pesticides and indicator PCB. Presently, we can only use the data that were generated by the expert laboratories 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.

The results show large differences between POPs and regions. For example: Africa and Pacific Islands region was high in DDT and drins (aldrin, endrin, dieldrin) whereas in GRULAC region all concentrations were extremely low. On the other, 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 was 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 African States were securely detected and relatively high; especially in DRC, Ghana and Mali. However at global level, countries such as Cuba and Peru had higher concentrations. The highest TEQs were observed in Cuba, Peru, Democratic Republic of Congo, and Ghana.

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.

### **Interlaboratory comparison study:**

With the assistance of GEF funding, the so far largest interlaboratory study on persistent organic pollutants, named the "First Worldwide UNEP Interlaboratory Study for Persistent Organic Pollutants (POPs)" 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 Study 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 undertake chemical analysis.

The basis for the interlaboratory study is laid down in the **Databank of Operational POPs Laboratories**, which was developed by the UNEP/GEF Global project on POPs laboratory capacity building<sup>6</sup> from 2005 to 2007. Since that Chemicals Branch maintains this databank and makes it available on its 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 Worldwide UNEP Interlaboratory Study on POPs, which offered a number of test samples for analysis (i.e., standard solutions for POPs pesticides, for PCB, and for dioxin-like POPs; and real samples such as sediment, fish, mothers' milk and flyash).

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:

1. 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);
2. 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).

As can be seen from the summary above, the African region is equipped with quite a number of POPs laboratories including one dioxin laboratory in Egypt and one laboratory that uses bioassays for the determination of biological toxicity equivalents (South Africa; outside of these GEF projects).

It was also noted that some laboratories have been too optimistic: they registered for the interlaboratory study (and received the test samples) but were not able to submit the results within the time period (8 weeks). For the POPs pesticide standard solution, the performance of the African laboratories was reasonable (RSD > 45%), better than for GRULAC but not sufficient (target <25%). For real samples (sediment, fish, mothers' milk), the results were not yet acceptable (>100%) and further training is needed so that laboratories improve and then finally will be able to deliver their own results to the Global Monitoring Plan rather than relying on POPs Expert laboratories.

In order to determine the "true" concentration of (here) 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 and 5/18. 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  $\pm 12.5$  %.

The assessment showed that while the measurement of test solutions was largely satisfactory, results for real sample matrices - sediment, fish, human milk - more frequently were unsatisfactory to demonstrate downward trends as required under the Convention. Particular difficulties were

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<sup>6</sup> Assessment of Existing Capacity and Capacity Building Needs to Analyze POPs in Developing Countries, WebSite <http://www.chem.unep.ch/Pops/laboratory/default.htm>

experienced in the analysis of media 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). 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 analyzing 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 is not yet at the desired or necessary level. Especially for true samples – sediment, fish, mothers' milk – the relative standard deviations range up to 250%, which indicates that certain laboratories still have severe difficulties.

For the African region, it can be concluded that:

The participating countries and the two coordinators of the African projects clearly expressed the need and in the interest to continue POPs Monitoring projects utilizing and improving established partnerships and co-operations. They concluded that the first phase of the project produced atmospheric data on POPs and in mothers's milk in Africa that was in non existence before. It trained various laboratories in the passive air sampling, analysis, quantitation and standardization of results. It enhanced collaboration between countries and laboratories. Further it enabled the African laboratories to work together with developed countries laboratories.

Despite these modest achievements the period was too short for mastering all the analytical techniques. Only two or three persons were trained in each country in greater depths to undertake POPs analysis. National laboratories got only one workshop training. The data quality needs to be perfected over a period of years to be reliable and to be useful for policy advice. Some of the laboratories need some equipment that would enhance their capacities.

The participation of African countries in this inter calibration study has helped to standardize the methods used for screening persistent organic pollutants in different matrices. Moreover the analytical capabilities of laboratories have been strengthened

In general, the performance of IVM and MTM laboratories did differ in some extend from the performance of African region laboratories Therefore it is suggested to rapidly improve POPs analysis in the region

In the overall, the project was the first in the region, which enabled the participating countries to obtain the results on the levels of POPs in mother's milk and the air.

The laboratories experienced challenges due to the complexity of the method of analysis of POPs in the selected matrices. None of the laboratories in the participating countries in West African countries were able to analyze the dioxins and furans.

Human milk analysis revealed the presence of different persistent organic pollutants in mother's milk samples with DDT having the highest concentration while

The project on the monitoring of POPs in two priority matrices provided capacity building for the national laboratories. It also raised awareness of decision makers in considering the level of contamination of human being and the environment. The results obtained in the mother's milk samples show the need for continuous monitoring of POPs and to propose mitigation for the reduction of the levels of potential exposure to the POPs.

For further participation of the African countries in the monitoring of POPs there is a need of strengthening of analytical capacity for basic POP and to foresee the analysis of the new POP which seems to be more complex.



There is every indication that the relevant stakeholders have bought into and taken ownership of the project. However, there is the need for political will by decision makers to ensure the sustainability of the project

The maintenance of laboratory equipment should be a priority for further study.

The set up of national laboratory which would allowed all countries to be more independent with regard of routine monitoring of POP nationwide.

To extend the project activities to other matrices such foodstuffs, water, the aquatic resources, etc.

In line with the conclusions and recommendations of the 1<sup>st</sup> monitoring reports, several challenges and capacity-building needs were put forward in order to enable the region to effectively contribute to future monitoring reports and for countries to fulfill their obligations under the Stockholm convention. These include:

- Improve/perfect the process established in phase 1, including improving political visibility of the project and its value for Sound Management of Chemicals (SMC), improve coordination between national/regional levels, develop mechanisms for South-South collaboration and sharing of experience, more training for laboratory personnel;
- Ensure continuity/sustainability of the effort, including continued inter-calibration studies to improve quality of analysis and comparability of data within the region;
- Include more countries and sites where data were missing for the first report;
- Include new POPs and provide adequate training and capacity-building.

The present project is proposed as a continuation of the 1<sup>st</sup> project presented above, and intends to continue building capacity of countries in the region for sustained monitoring of POPs in a step-by-step process, as called for by the Stockholm Convention COP. The goal of the project is therefore to strengthen capacity for implementation of the revised POPs Global Monitoring Plan in the African region and create the conditions for sustainability of the networks.

In particular, proposed activities will include updating of the UNEP POPs laboratory database; training of participating laboratories in sample collection, transport, storage and analysis; development of a regional inter-laboratory framework for improving quality of sample analysis; collection and analysis of human and environmental samples in contribution to the 2<sup>nd</sup> monitoring report; and development of a plan for establishment of sustained laboratory infrastructures in the region.

The First Worldwide UNEP Interlaboratory Study on POPs 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 2013 and 2015, respectively. The increase in number of countries participating is desirable; however, more important would be the continuous participation of the same laboratories in such proficiency testing to improve already existing capacities but to include more POPs and more matrices. This project will also build capacity in participating countries on monitoring “new” POPs. It is understood that the national laboratories trained for the 12 initial POPs may not be necessarily capable to analyze the 10 “new” POPs. Therefore new partnerships and collaboration with specialized laboratories may be necessary.

With this project, the momentum generated by the First Worldwide UNEP Interlaboratory Study, will be maintained 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. All laboratories and clients/ stakeholders are aware that each of the interlaboratory comparison studies is a snapshot 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 analyzed for the first time in a POPs laboratory, the laboratory must demonstrate its capabilities on an objective, internationally agreed basis.

- B.2. [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/NPIF) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:

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. Without the GEF resources, the programmes would not be able to perform collection and analysis of POPs containing sample with sufficient quality and comparability. As a result, data from the region would be missing from the monitoring report, while the Africa region is critical for assessing global transport and levels of POPs.

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.

This project will continue to assist countries to build capacity on POPs monitoring in the region and will use as a baseline the results obtained from the UNEP GEF project to support the Africa programme to build capacity on GMP (2009-2012). In addition, this project will include the new POPs adopted during COP-4 and COP-5. The capacity building for POPs monitoring programs for most countries in the region remains to be a priority and the continuation of the GMP activities has been highlighted as a regional need in different fora, including COP-5. One of the main conclusions of the Phase I of the GMP project for POPs (2009-2012) indicated that more qualified data on POPs concentration are needed in order to improve and complement the baseline of POPs levels in the region. In particular, resources are required to improve analytical facilities and methods for the determination of all POPs. This entails more trained personnel and the acquisition of appropriate analytical facilities and the funds to maintain and operate the instruments.

The Preliminary results of the UNEP GEF Project for the African Region under the Global Monitoring Plan for POPs (2009-2012) concluded that:

- The first phase of the GEF project produced for the first time atmospheric data and mothers' milk data on POPs. However as a first exercise, this data needs to be improved;
- Laboratory equipment and their maintenance are of primary importance for POPs monitoring;
- The time was too short for mastering all the analytical techniques and the data quality needs to be perfected over the years;
- Human milk analysis revealed the presence of different persistent organic pollutants in mothers' milk samples with DDT as the POPs with highest concentration; the results obtained in the mothers' milk samples show the need for continuous monitoring of POPs and to propose mitigation for the reduction of levels of potential exposure
- The need to extend the project activities to other matrices such as foodstuff, water, the aquatic resources, etc;
- The need to extend this project to the new 10 adopted POPs

Valuable data has been generated during the first phase of the GEF project. However, this data is not comprehensive for the region and can be improved. Participating countries have stressed the need to continue the POPs monitoring activities in order to raise awareness about POPs in the countries and to strengthen the regional capacity to monitor POPs. Challenges remain ahead in order to enable the region to effectively contribute to future monitoring reports, these include:

- Political visibility of the project and its contribution to Sound Management of Chemicals;
- Improve coordination at national and regional levels

- Ensure continuity/sustainability of the effort, including continued inter-calibration studies to improve quality of data
- Include more countries in these projects

Beside the technical outputs, this project also aims at raising awareness of national level which will be reflected in the adoption of regulatory frameworks that will support the implementation of GMP in the region. Furthermore, the laboratory training and inter-calibration studies will provide countries with the appropriate tools to monitoring POPs not only in the environment and health, but also in other matrices of interest which may support economic growth in the country (e.g. export of food). This may provide a good basis to sustain the GMP networks and may bring an economic dimension to it.

- B.3. 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). As a background information, read [Mainstreaming Gender at the GEF](#).

As the proposed project is of a scientific nature that does not directly impact people's productive activities, 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 core matrices of the POPs GMP.

The collection of mothers' 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. 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.

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.

- B.4. Indicate risks, including climate change risks that might prevent the project objectives from being achieved, and if possible, propose measures that address these risks to be further developed during the project design:

A program involving 14 countries has obvious logistical risks. The former project consisted of two sub-regional coordinators at the Toxicology Laboratory in Mali and University of Nairobi in Kenya. Both regional executing institutions are well established in their regions and delivered to the global coordinator at Chemicals Branch in UNEP/DTIE. All countries have WHO focal points. With this the project builds on an already existing network with proven capacity to carry out the project activities.

Some issues, in particular with respect to logistics, were raised at the final workshop of the African POPs monitoring projects, which was held as a combined workshop for the UNEP/GEF West African and East-Southern African countries (Amsterdam, 28 February-2 March 2011). These issues were further discussed during a brainstorming meeting on POPs monitoring (Geneva, Switzerland, 14-15 July, 2011) gathering the partners of the first round of the UNEP/GEF POPs monitoring projects. These issues and difficulties are mainly related to funds transfer from the sub-regional coordinator (in Mali and Kenya, *resp.*) to the participating countries with losses through volatility in exchange rates, banking costs; problems with timely communication between the country coordinators and the subregional coordinator. Another challenge was the delay in the collection of the human milk samples due to ethical issue at the level of the Ministries of Health. Possible solutions and approaches were proposed. These will be further discussed during the sub-regional workshop to be held in component 1 of this new project, and the issues will be addressed in the revised workplan and project arrangements.

The not yet satisfactory performance of the POPs laboratories constitutes another risk. However, this was expected and time is needed to reach overall satisfactory performance. The participating laboratories and their hosting institutions have demonstrated a high degree of dedication to the monitoring issue and with time – 4 years assumed for this new project – it can be expected that the

laboratories will improve as they receive further training and more samples from national and international clients. Laboratories interested and adequately equipped for PFOS analysis – criteria to be established through the UNEP/GEF project on New POPs Monitoring<sup>7</sup>. It is therefore expected that at least or two laboratories will be enabled to deliver analytical results for the newly included POPs. The laboratories equipped with mass spectrometers will be the first candidates for the analysis of the brominated flame retardants, such as PBB and PBDE. For external quality assurance and quality control, a number of samples will be analyzed in an experienced partner laboratory.

**B.5. Identify key stakeholders involved in the project including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable:**

Key stakeholders and beneficiaries are Governmental Ministries and Agencies including the national focal points for the Stockholm Convention, research institutions, and to a lesser extent private institutions. The main beneficiary is the Conference of the Parties to the Stockholm Convention and especially the Parties from the African region. The participating countries will be able to 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.

The main direct beneficiaries will be the participating laboratories receiving training and consumables/spares. Other direct beneficiaries are the environment and health sectors in all participating countries. *Jointly, they will collect/organize the collection of mothers' milk and blood samples for the GMP through the mothers donating the breast milk and blood.*

Ministries of Environment or other related institutions from the participating countries involved in the implementation of the monitoring component of the NIP will enhance their experiences in ambient air monitoring and interpretation of data.

Indirect beneficiaries are the general public since for most of the countries the first time, national data will be generated 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 neighboring regions and the human data will provide information as to the present exposure at the top of the food-chain. The staff operating the networks together with the laboratories in the region but also in cooperation with the expert laboratories will share experiences and mutually assist each other.

UNEP DTIE Chemicals Branch will be the executing agency for the Africa project; closely cooperating with the regional executing institutions, Environmental Toxicology and Quality Control Laboratory in Bamako, Mali and University of Nairobi, Kenya. UNEP will provide administrative and technical supervision in the implementation of the project. All three together will closely liaise with the Stockholm Convention Secretariat, other co-funding partner, including the World Health Organization who is implementing the next round of the global mothers' milk survey.

Key stakeholders in the project will be ISO (International Organization for Standardization) and ILAC (International Laboratory Accreditation Cooperation) as well as IUPAC (International Union of Pure and Applied Chemistry) to guarantee that (other) internationally agreed standards are followed. In reverse, the results and criteria from the UNEP/GEF projects will feed into their decision documents and projects.

In order to provide highest technical standards, it is envisaged that the Executing Partner will subcontract the expert laboratories from Free University Amsterdam-IVM, the Netherlands, and Örebro University-MTM Centre, Sweden, for training and mirror analysis of samples, and organization of inter-calibration studies. The WHO Reference laboratory for mothers' milk at Chemisches Untersuchungsamt Freiburg (CVUA Freiburg), Germany, will assist in matters related to this ore matrix. Further coordination will be done with the programs implementing air monitoring activities such as Environment Canada, RECETOX-Czech Republic.

**B.6. Outline the coordination with other related initiatives:**

Within UNEP, this project forms part of two projects under our Programme of Work (PoW) in the biennium 2012-2013 and beyond into the next Medium Term Strategy (MTS). The development of

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<sup>7</sup> UNEP/GEF MSP project "Establishing the Tools and Methods to Include the Nine New POPs into Global Monitoring Plan", GFL 4B97

global guidelines and standards together with the interlaboratory comparison study is embedded in project 52-P5 "Schemes for reporting of progress in sound management of harmful substances and hazardous waste and tools for monitoring and assessment" under the priority area "Harmful Substances and Hazardous Waste". Output C "Capacity built and inventory of chemical analytical laboratories and their performances established for use in the chemicals and waste MEAs/international agreements" addresses the quality assurance/quality control aspect of chemical analytical laboratories.

The activities in the developing countries and the coordination with the Secretariat of the Stockholm Convention is demonstrated by the project 53-P3"

This was conducted by Chemicals Branch of UNEP's Division of Technology, Industry and Economics from 2009 to 2011 within its project 52-P5.

This project will have direct linkages to the global new POPs GEF project and will use the guidelines developed under that project. In reverse, this project will contribute to the UNEP/GEF Global new Pops analytical project through experiences gained on the ground.

UNEP DTIE Chemicals Branch will assist the Executing Agency to coordinate with other UNEP/GEF regional projects on POPs monitoring, including the UNEP/GEF project "Supporting the Implementation of the Global Monitoring Plan of 12 initial and 10 new POPs in East and South East Asia", to be submitted to GEF Sec soon, as well as projects in Africa, and Latin America and the Caribbean.

The project will also contribute to the 6th round of the UNEP/WHO mothers' milk survey by providing data on POPs concentrations in mothers' milk in the Africa sub-region

#### **C. DESCRIBE THE GEF AGENCY'S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:**

##### **C.1. Indicate the co-financing amount the GEF agency is bringing to the project:**

UNEP will provide an in-kind co-finance of approximately 200,000 USD to the project. UNEP co-finance will focus on technical support and liaison with relevant institutions and programmes (e.g. the Stockholm Convention, GMP projects in other regions) and representation at key meetings.

##### **C.2. How does the project fit into the GEF agency's program (reflected in documents such as UNDAF, CAS, etc.) and staff capacity in the country to follow up project implementation:**

The fifth thematic priority (Harmful Substances and Hazardous Waste) of the UNEP Mid Term Strategy 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 the UNEP 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 and Chemicals Branches, for the years 2010 – 2013. The Mid Term Strategy for the years 2014-2017 is currently under development and will include the Subprogram 5 on Harmful Substances and Hazardous Waste), so continuous support for the project is ensured.

UNEP has Chemicals and POPs related staff capacity in the Regional Office for Africa (ROA), based in Naitobi, Kenya. The UNEP Regional Office for Africa will assist UNEP DTIE to identify further opportunities of cooperation with ongoing and planned activities in the region. UNEP DTIE and UNEP ROA have started to identify potential common activities on chemicals wastes and capacity


building. Last but not least, experts from the UNEP DTIE and ROA offices will provide substantial input throughout the duration of this project.

**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 template. For SGP, use this [OFP endorsement letter](#)).

<b>NAME</b>	<b>POSITION</b>	<b>MINISTRY</b>	<b>DATE</b> <i>(dd/mm/yyyy)</i>
Mr. Vincent KASULU SEYA MAKONGA Directeur de Développement Durable, Ministère de L'Environnement, Conservation de la Nature, Eaux et Forets Congo DR	GEF Operational Focal Point	Ministère de L'Environnement, Conservation de la Nature, Eaux et Forets	15.03.2012
Mr. Hossam HEGAZY Chief Executive Officer, Egyptian Environmental Affairs Agency, Ministry of State for Environmental Affairs Egypt	GEF Operational Focal Point	Ministry of State for Environmental Affairs	19.03.2012
Dr. Tewolde Berhan GEBRE EGZIABHER Director General, Federal Environmental Protection Authority Ethiopia	GEF Political /Operational Focal Point	Federal Environmental Protection Authority	30.08.2012
Dr. Raymond BABANAWO Technical Director, Ministry of Environment, Science and Technology (MEST) Ghana	GEF Operational Focal Point	Ministry of Environment, Science and Technology	14.03.2012
Dr. Ayub MACHARIA AG, Director General, National Environment Authority (NEMA) Kenya	GEF Operational Focal Point	National Environment Authority	19.03.2012
Dr. Alamir Sinna TOURE Head, Department of Studies and Planning Agence de l'Environnement et de L'Assainissement Mali	GEF Operational Focal Point	Agence de l'Environnement et de L'Assainissement	15.03.2012
Mr. Ali MANSOOR Financial Secretary, Ministry of Finance and Economic Development Mauritius	GEF Operational Focal Point	Ministry of Finance and Economic Development	20.03.2012
Mr. Mohamed BENYAHIA Director of Partnership, Communications & Cooperation, Ministry of Energy Mining, Water & Environment Morocco	GEF Operational Focal Point	Ministry of Energy Mining, Water & Environment	19.03.2012
Mr. Ndiaye Cheikh SYLLA Directeur Environnement et Etablissement Class, Ministry of Environment Senegal	GEF Political /Operational Focal Point	Ministry of Environment	02.05.2012
Dr. J. Ningu Director of Environment Tanzania	GEF Operational Focal Point	Vice-President's Office	05.09.2012
Mr. Djiwonou FOLLY Ingénieur des Travaux des Eaux et Forets, Ministère de l'Environnement et des Ressources Togo	GEF Operational Focal Point	Ministère de l'Environnement et des Ressources	15.03.2012
Mrs. Sabria BNOUNI Deputy Director, Ministry of Environment Tunisia	GEF Operational Focal Point	Ministry of Environment	01.06.2012
Mr. Keith MUHAKANIZI Deputy Secretary to the Treasury, Ministry of Finance, Planning & Economic Development Uganda	GEF Political /Operational Focal Point	Ministry of Finance, Planning & Economic Development	02.06.2012
Dr. Kenneth NKOWANI Director, Environment and Natural Resources Management Department Zambia	GEF Operational Focal Point	Environment and Natural Resources Management Department	26.03.2012

**B. GEF AGENCY(IES) CERTIFICATION:**

<b>This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.</b>					
<b>Agency Coordinator, Agency name</b>	<b>Signature</b>	<b>Date</b> <i>(mm/dd/yyyy)</i>	<b>Project Contact Person</b>	<b>Telephone</b>	<b>Email Address</b>
Maryam NIAMIR-FULLER Director, UNEP GEF Coordination Office		09/10/20 12	Jorge OCAÑA CORREA Task Manager	+41 22 917 81 95	<a href="mailto:jorge.ocana@unep.org">jorge.ocana@unep.org</a>