

# Final Results Workshop of the UNEP/GEF project on ‘Tools for the New POPs’ and Inception Workshop for UNEP/GEF project on ‘Implementation of the GMP in Asia’

**Air samples: guidelines and experiences from the GEF GMP1  
projects**

Esteban Abad

Dioxin Laboratory

Hanoi, Vietnam, 25<sup>th</sup>- 27<sup>th</sup> January 2016

## Lines of action included in the collaboration

- The objective of the Global Monitoring Plan (GMP) is to support the evaluation of the effectiveness of the Stockholm Convention concerning environmental background levels.
- The Conference of the Parties has decided that the evaluation of air samples and levels in breast milk or human blood is first priority.
- The analysis of air monitoring will be conducted using passive air samplers (PAS) for sampling of persistent organic pollutants (POPs).

## Lines of action included in the collaboration

- ***In situ* inspections:**

Evaluate and detect the strengths and weaknesses of the laboratories participating in the POPs monitoring network

- **Organization of workshops:**

*In situ* training and capacity to complement the technical expertise for the analysis of POPs in the laboratories of the Monitoring Network

- **Collaboration in the supply of the materials and consumables** needed to carry out the analysis of POPs in the laboratories participating in the POPs monitoring network

- **Analytical complementation** of those issues that cannot be approached by the countries participating in the Project because of lack of resources.

## Lines of action included in the collaboration

### Mother's milk samples

- UNEP in collaboration with WHO
- 12 POPs in mother's milk
- Analysis at the State Laboratory for Chemistry and Veterinary Food Analysis (CVUA) in Friburg, Germany
- Containers for mother's milk samples were sent through the CSIC via its contacts with other European agencies

### Intercalibration exercise

- Matrices: Ash, Sediment, Fish and mother's milk
- Analytes: Dioxins and furanes, dioxin-type PCB, labelling PCB and Organochlorinated pesticides

## Lines of action included in the collaboration

### 1st phase in 2009

#### First project CUBA

CSIC in collaboration with UNEP-Chemicals with funds from the Global Environment Facility (GEF) and SAICM's (Strategic Approach to International Chemicals Management) QSP (Quick Start Programme)

#### First proposal

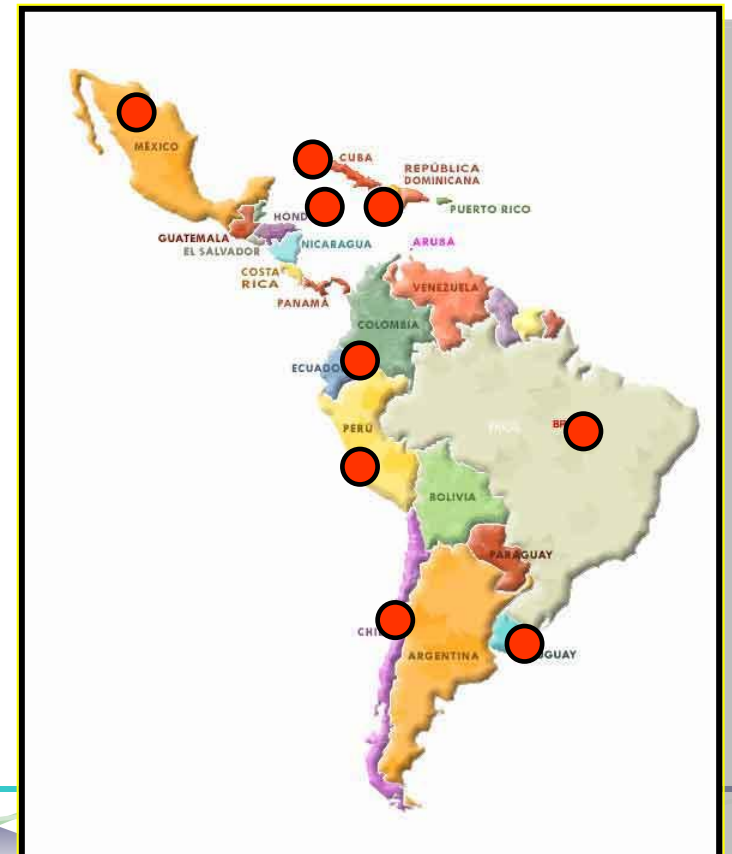
Sustainable identification and correction of any weakness observed in the Cuban laboratories in charge of providing data on the POPs to the GMP as described in the Stockholm Convention.

## 2nd phase of the project

Strategic objective involves training of and scientific co-operation with several countries in the Region

### Latin America

- Mexico
- Peru
- Barbados
- Antigua & Barbuda
- Bahamas
- Haiti
- Ecuador
- Brazil
- Chile
- Uruguay
- Caribbean (including Cuba)



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## HUMAN MILK

The project follows the WHO protocol. The WHO Reference laboratory will analyze the national pool to provide the official data to the Conference of the Parties, whereas the national/local laboratories - where capacity exists - will analyze either the whole pool or the individual samples that constitute the pool. Target analytes are the 12 initial POPs.

**Project outcomes**

- Standard operation procedures for monitoring and POPs analysis in air and human milk.
- Laboratories equipped and trained personnel for sampling and analysis.
- Experiences in participation in international inter-calibration studies.
- Generation and availability of high quality data on POPs in Latin America and the Caribbean region.
- Regional Report for Latin America and the Caribbean for the first evaluation of the effectiveness of the implementation of the Stockholm Convention.
- Regional workshops for the preparation of monitoring plan and discuss final results.

Governments and stakeholders are aware on details in implementation of the GMP issue in their national implementation plan and reporting to the COP.

## LECHE MATERNA

El proyecto sigue el protocolo de la OMS. El laboratorio de Referencia de la OMS analizará el pool de muestra de cada país para proporcionar los datos oficiales a la Conferencia de las Partes, mientras que los laboratorios nacionales / locales, donde existe la capacidad - o bien se analizará el pool de muestra o las muestras individuales que constituyen el pool. Los analitos a determinar son los 12 contaminantes orgánicos persistentes iniciales.

**Resultados esperados:**

- Procedimientos estandarizados de operación para muestreo y análisis de COP en aire y leche materna.
- Laboratorios equipados y personal capacitado para muestreo y análisis.
- Participación de ejercicios internacionales de inter-calibración.
- Generación y disponibilidad de datos de alta calidad sobre COP en América Latina y el Caribe.
- Informe regional de América Latina y Caribe para la primera evaluación de la eficacia de la implementación del Convenio de Estocolmo.
- Talleres regionales de preparación del plan de monitoreo y discusión de resultados finales.

Gobiernos y las partes interesadas son conscientes de los detalles en la ejecución del GMP en sus Planes Nacionales de Implementación y en los informes presentados a la Conferencia de las Partes.

Supporting the Implementation of the  
**Global Monitoring Plan of Persistent Organics Pollutants (POPs)**  
in Latin America and Caribbean States (LAC)

Soporte en la Implementación del

### Background data-Mother's milk Antecedentes- Datos en leche materna

#### Levels of selected POPs in human milk

Legend: Antigua & Barbuda, Chile, Uruguay, Barbuda, Jamaica, Mexico, Peru, Uruguay.

#### Concentration PCDD/PCDF dioxin like PCBs in human mother's milk

Legend: Chile y Uruguay, Barbuda.

**Main objectives**

To build regional capacity on analysis and data generation for POPs in air and human milk for the Global POPs Monitoring (GMP) to enable Latin America and Caribbean countries to identify trends in concentrations over time, evaluate the effectiveness of the Convention implementation, contribute to the global report submitted to the Conference of the Parties of Stockholm Convention. Project executing organization: UNEP Chemicals Branch (global coordinator), Regional Coordinator: Stockholm Convention Regional Centre for LAC in Uruguay.

**Alicance geográfica / Geographical scope:**  
Latin America and Caribbean región: Antigua & Barbuda, Brazil, Chile, Ecuador, Jamaica, Mexico, Peru and Uruguay.

**Linkages with other interventions**

WHO: with its 4<sup>th</sup> and 5<sup>th</sup> rounds of the breast milk study will form an essential part in this project and so directly contribute with POPs data to the GMP.  
Environment Canada: project activities are coordinated to ongoing global air monitoring programme of Environment Canada.  
SAICM QSP: two SAICM projects in four LAC countries will be coordinated with this UNEP-GEF project.

**Reference laboratories / Laboratorios de referencia:**  
IDAEA - CSIC Barcelona Spain.

## AIR

They are placed in each participating country polyurethane passive samplers (PUF) as the Global Atmospheric Passive Sampling (GAPS) and the analysis of POPs are made in local laboratories and the reference laboratory: IDAEA CSIC-Barcelona, Spain

## AIRE

Se colocan en cada país participante muestreadores pasivos de poliouretano (PUF) según el Programa Mundial de Muestreo Atmosférico Pasivo (GAPS) y los análisis de COP son realizados en laboratorios locales y el laboratorio de referencia: IDAEA CSIC-Barcelona, España.


### UNEP-GEF AIR MONITORING SITES

Country	Site Name	Coordinates
Antigua & Barbuda	Jardines Kingston	17°59'39"N 79°47'37"W
Mexico BA • Mantec Azules	Lacandon Ran Forest - Montes Azules, Chiapas, Estación Chuj	16°59'38" N 90°47'54" W
Ecuador UR • Quito	Parque de la Radio Mariposa (ex Hotel Jardín García Moreno 711 y Sate)	0°12'12" S 78°50'30" W
Peru UR • Lima		12°54' S 77°3' W
Chile • Coyhaique		45°51' S 72°02' W
Brazil UR • Curitiba	Parque Instrumentos & Planning Agency	
Brazil UR • Pinheiros	São Paulo: SP, Av. Prof. Frederico Hermann Jr. 345, Alto de Pinheiros, São Paulo, SP	23°33'37" S 46°42' S
Brazil IND • Vila Parati	Cubaés - 95 R. Praia Anhemão, Cubatão, SP, 70, Vila Parati, Cubatão, SP	23°41'37" S 46°42' S
Brazil UR AGR • São José do Rio Preto	SP São João, 2025, Cordeiro Alencastro Esplanada, São José do Rio Preto, SP	22°08'42" S 48°47'13" W
Uruguay UR • Montevideo	Centro Comercial 3, Calle de las Industrias	34°51' S 54°07' W

**Clasificación del Área o zona de muestreo**  
Agricultural AG | Background BA  
Industrial-urban IU | Rural RU | Urban UR



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Centro Regional del Convenio de Estocolmo  
URUGUAY

Informe del Taller Regional de Inicio del Proyecto UNEP/GEF "Apoyo en la Implementación del Plan de Monitoreo Global de COPs en los países de América Latina y el Caribe"


El Taller Regional de Inicio del Proyecto UNEP/GEF "Apoyo en la implementación del Plan de Monitoreo Global de COP en los países de América Latina y el Caribe" fue organizado en forma conjunta por PNUMA Químicos t en Centro Regional del Convenio de Estocolmo de Uruguay. Dicho taller tuvo lugar desde el 4 al 6 de noviembre de 2009 en las instalaciones del Laboratorio Tecnológico del Uruguay en Montevideo Uruguay.

Se contó con la participación de representantes de los países que endosaron dicho proyecto : Brasil, Chile, Ecuador, Jamaica, México, Perú y Uruguay ( los representantes de Antigua y Barbuda no pudieron arribar a tiempo), representantes de dos proyectos SAICM QSP (del PNUMA): Bahamas, Barbados, Cuba y Haití, invitados por parte de la Secretaría del Convenio de Estocolmo: Argentina, Colombia y Costa Rica, expertos pertenecientes al Laboratorio CSIC de España y en monitoreo de aire de Environment Canada, representantes del PNUMA-DGEF, PNUMA-Químicos , PNUMA ROLAC y del Centro Regional del Convenio de Estocolmo de Uruguay. Se adjunta el listado de participantes en el Anexo I.

El Taller se desarrolló de acuerdo a la agenda que se adjunta al presente informe como Anexo II. Las distintas presentaciones fueron recopiladas en un CD que fue entregado al finalizar el taller a todos los participantes.

Luego de la apertura la representante del PNUMA Químicos Dra Heide Lore Fiedler realizó una introducción al proyecto, explicando los objetivos del mismo, las actividades a desarrollar y los resultados esperados. Seguidamente los países participantes del proyecto UNEP/GEF y los de los proyectos SAICM realizaron presentaciones sobre sus experiencias en monitoreo de COPs en aire y leche materna y el estado de situación de los laboratorios tanto en infraestructura como en experiencia en análisis de COPs. Se hicieron exposiciones por parte de los expertos tanto en monitoreo de aire Dr Tom Hämer, Environmental Canada como el Dr Esteban Abad, CSIC, sobre análisis de COPs. También se presentó el informe para la Evaluación de la Eficacia de GRULAC presentado en la COP4 (4ª reunión de la conferencia de las partes).

1



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## Lines of action included in the collaboration

### Conclusions

- Organize the organizational structure of the project.
- Conduct a sub-regional workshop to promote an in-depth discussion on the working plan for the implementation of the project.
- Need to develop strategies for future contributions on POPs to the GMP.
- Drafting of protocols and manuals for capture of samples.
- Appointment of a person in charge per participating country for:
  - Capture of Air samples
  - Mother's milk sampling
  - POPs analysis (including the identification of the national POPs)
- NON PHYSICAL inspection of the laboratories selected to conduct the analysis of POPs.

## Lines of action included in the collaboration

### Conclusions

- Training of the staff in charge of implementing the network for the capture of air samples.
- Identification of the points for the capture of air samples.
- Identification of potential mother's milk donors.
- Training of the national laboratories in charge of performing the analysis of POPs in a developed country's laboratory.
- Involvement of the laboratories participating in the project in international intercalibration exercises.
- Organization of a final sub-regional workshop to evaluate the results obtained in the project, as well as to communicate the results obtained and lessons learned during the project.

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## Questionnaire for the assessment of the existing capacities



Evaluación de las Capacidades  
Existentes y las Necesarias para el  
Análisis de COPs en Países en Desarrollo



Questionario para Laboratorios que Analizan COPs

### 1 IDENTIFICACION

Nombre del laboratorio:	
Dirección:	
Ciudad / Estado:	
País:	
Código Postal:	
Teléfono:	
Fax:	
E-mail:	
Sitio Web:	
Persona de Contacto:	

#### Tipo de Laboratorio

Público/Gubernamental  Privado  Privado

#### Rol del Laboratorio

--

Dimensión del Laboratorio (en metros cuadrados)

--

Tiempo de Funcionamiento del Laboratorio (años)

--

### 2 PERSONAL

Número Total:	
Jefaturas:	
Profesionales:	
Técnicos:	
Otros:	

### 3 PROGRAMA DE ASEGURAMIENTO DE LA CALIDAD

- 3.1 Cuenta el laboratorio con un sistema de calidad establecido ?
- 3.2 Posee el laboratorio un programa de aseguramiento de la calidad ?
- 3.3 Comentarios

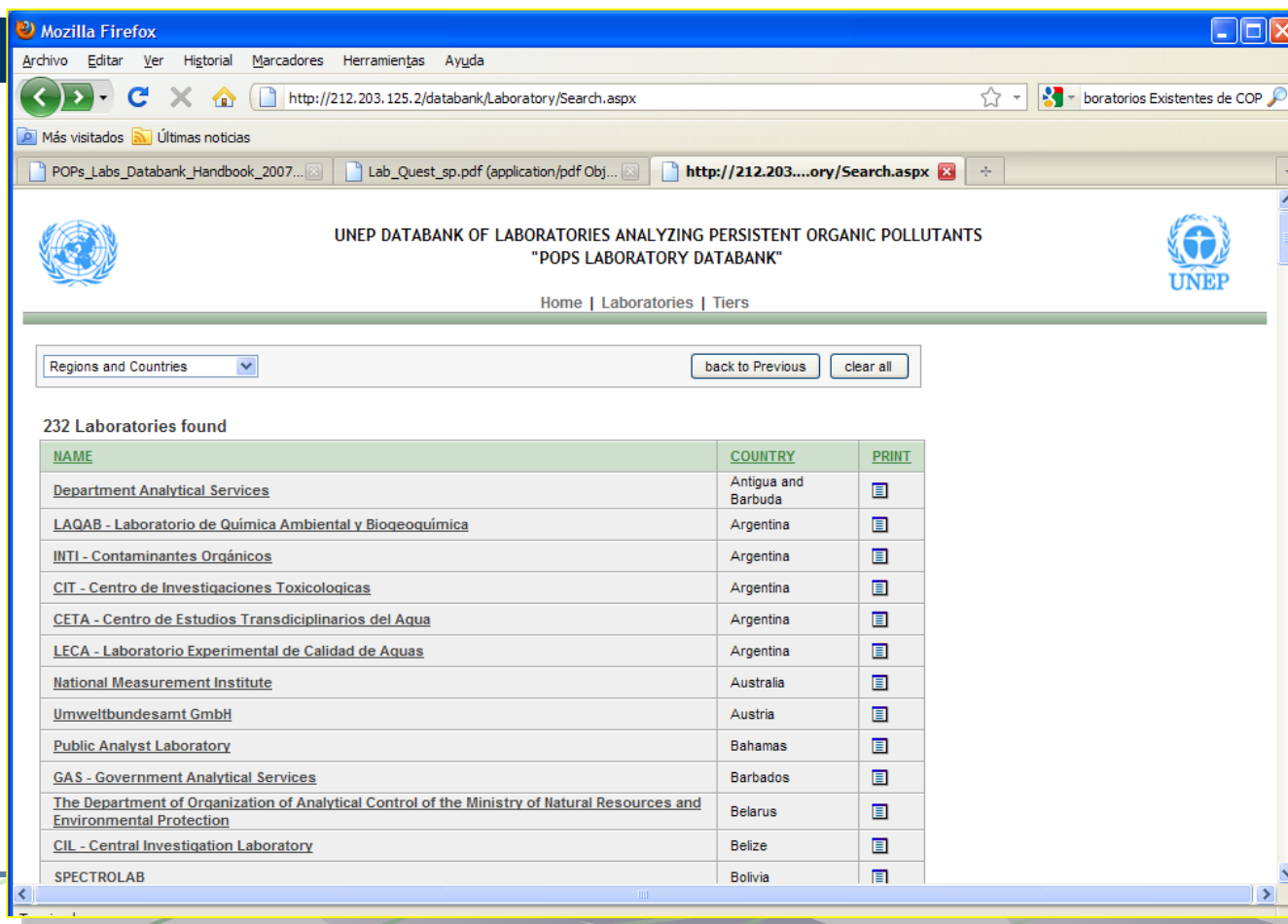
### 4 ACREDITACION

Por favor ingrese la información de acuerdo al tipo de COP y matriz (Ej. ISO 17025)

COP	Matriz	Tipo de Acreditación
Plaguicidas		
HCB		
PCB		
6/7 indicador PCB d-PCB (TEQ)		
PCDD/PCDF 2,3,7,8-subst. Cong. (TEQ) Homólogos		














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## Database of the laboratories analyzing POPs



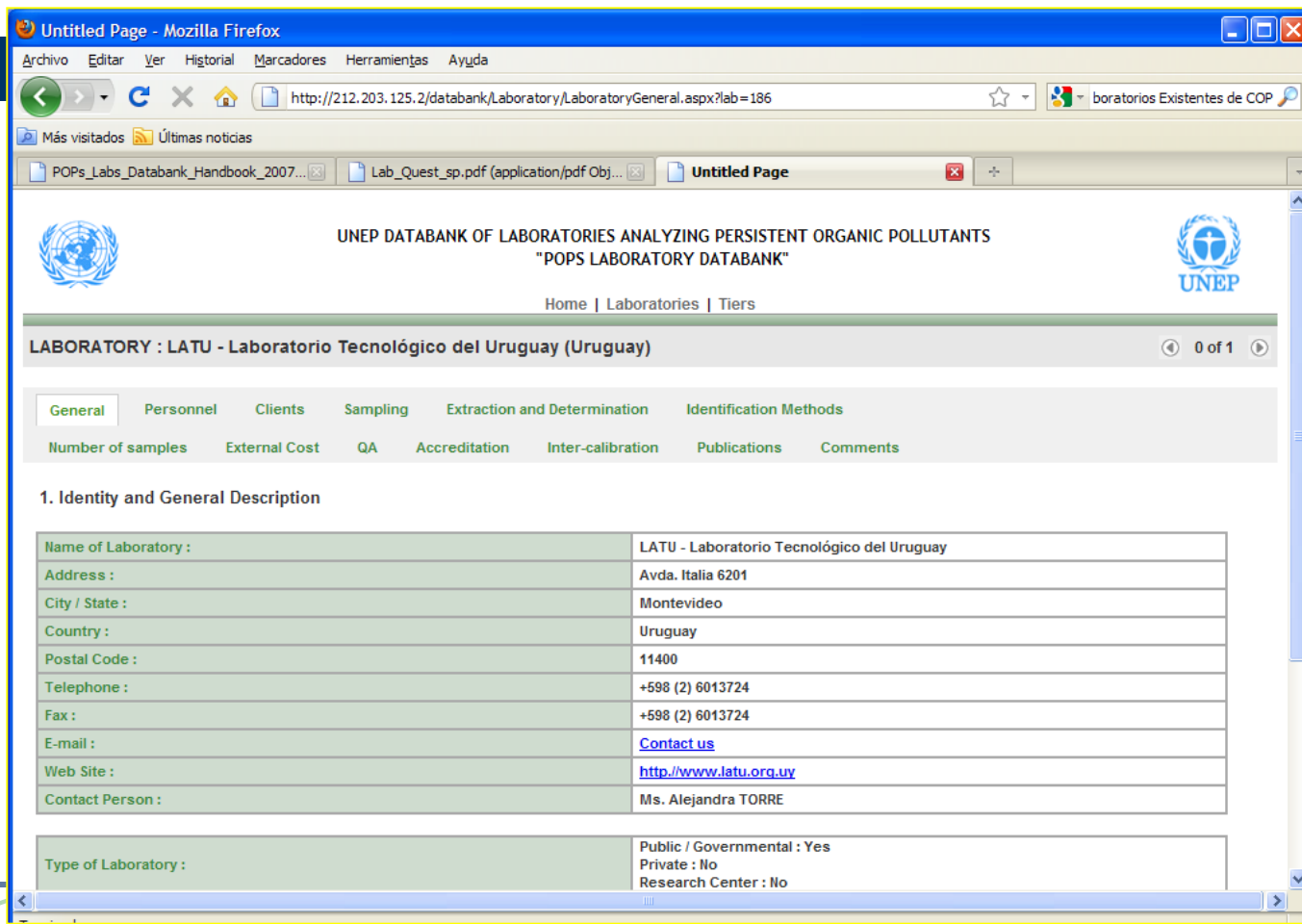
Regions and Countries

232 Laboratories found

NAME	COUNTRY	PRINT
<a href="#">Department Analytical Services</a>	Antigua and Barbuda	
<a href="#">LAQAB - Laboratorio de Química Ambiental y Bioquímica</a>	Argentina	
<a href="#">INTI - Contaminantes Orgánicos</a>	Argentina	
<a href="#">CIT - Centro de Investigaciones Toxicológicas</a>	Argentina	
<a href="#">CETA - Centro de Estudios Transdisciplinarios del Agua</a>	Argentina	
<a href="#">LECA - Laboratorio Experimental de Calidad de Aguas</a>	Argentina	
<a href="#">National Measurement Institute</a>	Australia	
<a href="#">Umweltbundesamt GmbH</a>	Austria	
<a href="#">Public Analyst Laboratory</a>	Bahamas	
<a href="#">GAS - Government Analytical Services</a>	Barbados	
<a href="#">The Department of Organization of Analytical Control of the Ministry of Natural Resources and Environmental Protection</a>	Belarus	
<a href="#">CIL - Central Investigation Laboratory</a>	Belize	
<a href="#">SPECTROLAB</a>	Bolivia	

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## Database of the laboratories analyzing POPs



UNEP DATABANK OF LABORATORIES ANALYZING PERSISTENT ORGANIC POLLUTANTS  
"POPS LABORATORY DATABANK"

Home | Laboratories | Tiers

LABORATORY : LATU - Laboratorio Tecnológico del Uruguay (Uruguay) 0 of 1

General Personnel Clients Sampling Extraction and Determination Identification Methods

Number of samples External Cost QA Accreditation Inter-calibration Publications Comments



### 1. Identity and General Description

Name of Laboratory :	LATU - Laboratorio Tecnológico del Uruguay
Address :	Avda. Italia 6201
City / State :	Montevideo
Country :	Uruguay
Postal Code :	11400
Telephone :	+598 (2) 6013724
Fax :	+598 (2) 6013724
E-mail :	<a href="#">Contact us</a>
Web Site :	<a href="http://www.latu.org.uy">http://www.latu.org.uy</a>
Contact Person :	Ms. Alejandra TORRE

Type of Laboratory :  
Public / Governmental : Yes  
Private : No  
Research Center : No

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## First Interlaboratory Exercise


**UNITED NATIONS ENVIRONMENT PROGRAMME**


Programme des Nations Unies pour l'Environnement    Programa de las Naciones Unidas para el Medio Ambiente  
 Организация Объединённых Наций по окружающей среде    برنامج الأمم المتحدة للبيئة

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**Expression of Interest to Participate in the  
 First Worldwide UNEP Intercalibration Study on Persistent Organic Pollutants**  
 1 January 2009 to 30 November 2010

The importance of accurate results in the analysis of persistent organic pollutants (POPs) in order to make data acceptable and comparable between laboratories, is one of the prerequisites for reporting under the Stockholm Convention and for decision making elsewhere. With respect to the Stockholm Convention, the needs for POPs analysis arise for the Global POPs Monitoring Plan under the effectiveness evaluation, the performance levels for PCDD/PCDF associated with the application of best available techniques in a number of source categories, and the provisional definition of the low POP content in waste.

The global UNEP/GEF project on "Assessment of Existing Capacity and Capacity Building Needs to Analyse Persistent Organic Pollutants in Developing Countries" has concluded that POPs laboratories should successfully participate in international interlaboratory comparison studies in relevant matrices at least every three years, preferably annually. Starting in February 2009, UNEP/DTIE Chemicals Branch is organizing the **First Worldwide UNEP Intercalibration Study on Persistent Organic Pollutants**. The intercalibration study is open to all laboratories that are registered in UNEP's POPs Laboratory Databank (<http://www.chem.unep.ch/databank/Home/Welcome.aspx>), where necessary, please update your information; new registrations are welcome (questionnaires for updating existing information or for new registration are available from <http://www.chem.unep.ch/POPsLaboratory/default.htm>). The intercalibration samples will be provided through IVM, VU Amsterdam, the Netherlands for basic POPs and MTM Centre, Centre University, Sweden for dioxin-like POPs.

Participation in the 1<sup>st</sup> Worldwide UNEP Intercalibration Study on POPs is free-of-charge for eligible developing country laboratories participating in regional UNEP-coordinated GEF or SARC/QSP projects (for details, see <http://www.chem.unep.ch/pops/GMP/default.htm> and click on regions). Laboratories from developed countries or from developing countries not included in these projects can participate at their own costs (to cover materials, shipment of intercalibration samples, and handling fees).

With this form, UNEP Chemicals is inviting POPs laboratories worldwide to express their interest to participate in the First Worldwide UNEP Intercalibration Study on POPs. Kindly return the filled form (below) to Dr. Heidelese FIEDLER, at [heidelese.fiedler@unep.org](mailto:heidelese.fiedler@unep.org) to express your interest in participating in the study and to detail your preferred participation as soon as possible but not later than 31 March 2010.

Name of Laboratory:	E-mail:
Contact Person:	
Address*:	Phone:
Postal Code:	
City:	Fax:
Country:	

\* Shipment address

My laboratory is interested in analyzing the following matrices and POPs and provide the analytical results according to the reporting scheme and timetable (analysis within ca. 8 weeks after receipt):

Matrix of Intercalibration Sample	Persistent Organic Pollutant				Instrumentation (Indicative: ECD, LRMS, HR MS)
Standard Solution	Verendres	PCB-	PCDD/PCDF	dioxin	
Soil/Sediment	Verendres	PCB-	PCDD/PCDF	dioxin	
Fly Ash	Verendres	PCB-	PCDD/PCDF	dioxin	
Fish	Verendres	PCB-	PCDD/PCDF	dioxin	
Mother's Milk	Verendres	PCB-	PCDD/PCDF	dioxin	



## Participating Laboratories

**BRAZIL**

CETESB

**URUGUAY**

DINAMA

**ECUADOR**

Ecotoxicology  
Laboratory  
Agrocalidad

**JAMAICA**

LATU  
Pesticide Research  
Laboratory

**CHILE**

ISPCH

**MEXICO**

CENICA

EULA

INHA  
CEINPET  
CEAC

**PERU**

DIGESA

**CUBA**

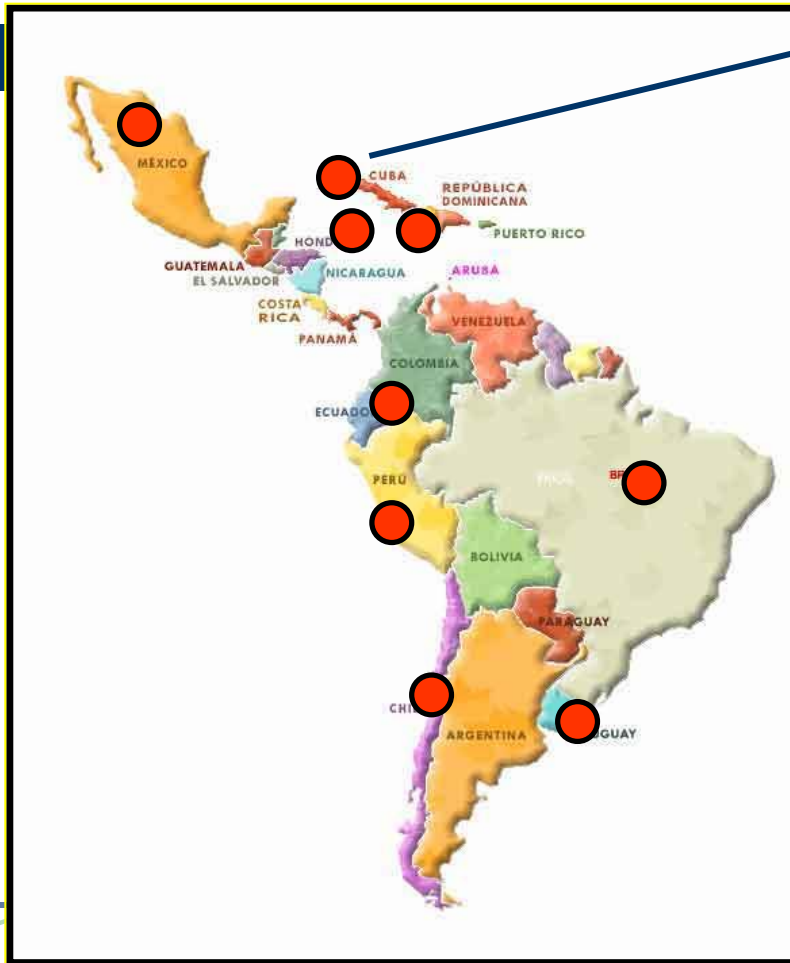
CIMAB  
INISAV

SENASA

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## Inspections

April 2009:



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## 'Training and capacity building' calendar

Lab Training Planner 2010																																						
	mon	tue	wed	thu	fri	sat	sun	mon	tue	wed	thu	fri	sat	sun	mon	tue	wed	thu	fri	sat	sun	mon	tue	wed	thu	fri	sat	sun	mon	tue	wed	thu	fri	sat	sun	mon	tue	
June		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30							
July				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
August						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
September			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30						
October					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
November	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								
December			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					

# Final Results Workshop of the UNEP/GEF project on 'Tools for the New POPs' and Inception Workshop for UNEP/GEF project on 'Implementation of the GMP in Asia'

## Professors

JAMAICA



Dr. B. Gomara



Dr. E. Moyano

CHILE



Mrs. M.G. Martrat



Dr. O. Núñez



Mr. C. Galban

BRAZIL



Mr. J. Sauló



Mr. M.A. Agrados

MEXICO



Mr. K. Martínez



Mr. J. Parera

URUGUAY



Dr. J. Caixach



Mr. C. Planes

ECUADOR



Mrs. M.G. Martrat



Mr. M.A. Agrados

CUBA



Dr. E. Abad



Mr. J. Parera

PERU



Mr. J. Sauló



Mr. K. Martínez

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## PROCUREMENTS

## CUBA



## AIR SAMPLES

- The objective of the Global Monitoring Plan (GMP) is to support the evaluation of the effectiveness of the Stockholm Convention in relation to environmental background levels.
- The Conference of the Parties has decided that the air monitoring and exposure in breast milk or human blood to these pollutants is the priority objective.
- The objective of air monitoring plan will be conducted by means of passive air samplers (PAS) for sampling of persistent organic pollutants (POPs).



## AIR SAMPLES



**PASSIVE AIR SAMPLERS  
SHIPPED TO COUNTRIES:**

**110**

**POLYURETHANE FOAM  
SHIPPED TO COUNTRIES:**

**420**

## AIR SAMPLES

CAMPAIGN	It correspond to:
I	First Campaign
II	Second Campaign
III	Third Campaign
IV	Fourth Campaign


### SUMMARY OF UNEP CODES FOR PASSIVE AIR SAMPLERS (PAS)

SAMPLER NUMBER	It corresponds to:
1	Analysis of basic POPs in Expert Lab (CSIC)
2	Analysis of basic POPs in Expert Lab (CSIC)
3	Analysis of basic POPs in National Laboratory
4	Analysis of basic POPs in National Laboratory
5	Analysis of dioxin-like POPs (dl-POPs) in Expert Lab (CSIC), (annual average)
6	Analysis of dioxin-like POPs (dl-POPs) in National Laboratory, (annual average)
7	Analysis of dioxin-like POPs (dl-POPs) in National Laboratory (quarterly sampling)
8	Analysis of dioxin-like POPs (dl-POPs) in National Laboratory (quarterly sampling)

## AIR SAMPLES




### PROCEDURE FOR THE ASSEMBLY AND DISASSEMBLY OF PASSIVE AIR SAMPLERS (PAS)



	PROCEDIMIENTO PARA EL MONTAJE Y DESMONTAJE DE CAPTADORES PASIVOS DE AIRE (PAS)	Hoja 1 de 11 Rev. 3
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PROCEDIMIENTO PARA EL MONTAJE Y DESMONTAJE DE  
CAPTADORES PASIVOS DE AIRE (PAS)

1. INTRODUCCIÓN
2. OBJETIVO
3. ALCANCE
4. REALIZACIÓN
  - 4.1. MONTAJE Y PUESTA EN MARCHA
  - 4.2. DESMONTAJE
5. MANTENIMIENTO
6. ANEXOS
7. HISTÓRICO DE MODIFICACIONES

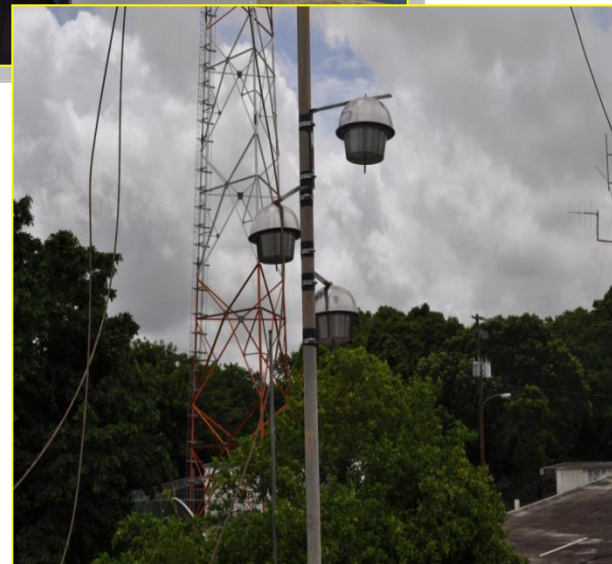
Dibujado por:  Fdo: M. Abalos LABORATORIO DE DIOXINAS IDREA-CSIC Fecha: 29/06/2010	Revisado por:  Fdo: E. Abad LABORATORIO DE DIOXINAS IDREA-CSIC Fecha: 29/06/2010	Aprobado por:  Fdo: H. Friedler UNEP Chemicals Branch Fecha: 29/06/2010
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# Final Results Workshop of the UNEP/GEF project on 'Tools for the New POPs' and Inception Workshop for UNEP/GEF project on 'Implementation of the GMP in Asia'

BAHAMAS



Barbados





# Final Results Workshop of the UNEP/GEF project on 'Tools for the New POPs' and Inception Workshop for UNEP/GEF project on 'Implementation of the GMP in Asia'

BRAZIL



ECUADOR (QUITO)



PERU (LIMA)



# Final Results Workshop of the UNEP/GEF project on 'Tools for the New POPs' and Inception Workshop for UNEP/GEF project on 'Implementation of the GMP in Asia'



BARBADOS



MEXICO



URUGUAY

ANTIGUA AND  
BARBUDA





## MIRROR SAMPLES

14	Exchange of national samples for POPs analysis in developing country laboratory and <b><u>mirror analysis</u></b> in back-up laboratory	For non-POPs lab countries Bahamas in exchange with expert lab during 2010; possibly together with air samples
		POPs lab countries: After training

## 2 MIRROR SAMPLES PER COUNTRY OF CHOICE MATRICES:

SEDIMENTS  
MOTHER'S MILK  
FISH

## MIRROR SAMPLES

### PROBLEMS SENDING MIRROR SAMPLES

- **WRONG DESCRIPTION OF THE SAMPLE IN THE POST PARCEL**
- **DELAY IN DELIVERY OF SAMPLE -> SPOILING!**
- **WRONG ADDRESS**
- **PAYMENT OF EXCESSIVE CUSTOMS DUTIES**  
-> PRO-FORMA INVOICE OVER 100 DOLLARS
- **NEED TO SEND PROPERLY COOLED SAMPLES**

## MIRROR SAMPLES

### Indicator PCBs

Description	PCB-IND ng/g	
	CSIC	Country
Sedimento	-	-
Sedimento	0.51	0.56
Suelo	-	0.06
Pescado liofilizado	5.24	460.1
Pescado	19.4	-
Sedimento	13.5	1.65
Leche materna	0.12	-
Leche	-	-
Sedimento	0.38	-
tejido de Oncorhynchus mykiss	-	-
Sedimento	-	-
Muestra ambiental testigo nº2	-	-
Muestra ambiental testigo nº1	-	-
Bahía Habana CUBA	-	-
Bahía Cienfuegos CUBA	0.98	-
Perna Viridis INHA (06/06/11), CUBA	-	-
Muestra suelo 17, CUBA	-	-
Muestra suelo 67, CUBA	-	-
Bahía de Matanzas, CUBA	-	-
Guira de la Melena, CUBA	-	-
San Antonio de los Baños, CUBA	-	-
Human Milk	0.10	-
Pescado fresco	172.6	0.61
Pescado liofilizado	7.72	69.78
Sedimento	2.86	8.75
Muestra de lodo	0.59	-
Leche materna	-	-
Suelo	0.7	-
Sedimento	0.38	-

## MIRROR SAMPLES

### Dioxin-like POPs

Country	Description	PCDD/F pg WHO-TEQ/g		DL-PCB pg WHO-TEQ/g	
		CSIC	Country	CSIC	Country
	Human Milk	0.31	-	0.2	-
	Pescado fresco	10.61	-	-	-
	Pescado liofilizado	0.54	6.6	0.77	8.6
	Sedimento	75.43	14.8	-	-
	Muestra de lodo	-	-	-	-
	Leche materna	-	-	-	-

## MIRROR SAMPLES

Air samples. POPs: dioxin-like POPs, PCBs

COUNTRY	compounds	CSIC result	Results COUNTRY
	PCDD/F ng WHO-TEQ/PUF	0.035	-
	DL-PCB ng WHO-TEQ/PUF	0.016	-
	PCB-IND ng/PUF	49.7	-
	PCB-IND ng/PUF	4.9	-
	PCB-IND ng/PUF	6.3	-
	PCB-IND ng/PUF	2.9	-
	PCB-IND ng/PUF	640.1	-
	PCB-IND ng/PUF	5.8	-
	PCDD/F ng WHO-TEQ/PUF	0.023	-
	DL-PCB ng WHO-TEQ/PUF	0.004	-
	PCB-IND ng/PUF	18.5	-
	PCDD/F ng WHO-TEQ/PUF	0.015	-
	DL-PCB ng WHO-TEQ/PUF	0.005	4.9
	PCB-IND ng/PUF	40.5	37.1
	PCB-IND ng/PUF	4.4	-
	PCB-IND ng/PUF	41.9	19.8
PCB-IND ng/PUF	0.63	-	
PCB-IND ng/PUF	9.7	0.1	
PCB-IND ng/PUF	1.9	-	





# Final Results Workshop of the UNEP/GEF project on 'Tools for the New POPs' and Inception Workshop for UNEP/GEF project on 'Implementation of the GMP in Asia'

## Lines of action included in the collaboration

### Workshops: Project Completion



**Final Workshop for UNEP/GEF and SAICM QSP Projects “Support to the Global Monitoring Plan of POPs in Latin American and Caribbean Countries”,  
CSIC – Laboratorio de Dioxinas,  
Barcelona, Spain, 21-25 March 2011**



**Final Workshop for UNEP/GEF Projects “Support to the Global Monitoring Plan of POPs in West Africa and East-Southern Africa”,  
IVM VU Amsterdam - Institute for Environmental Studies  
Amsterdam, the Netherlands, 28 February-4 March 2011**



# Final Results Workshop of the UNEP/GEF project on ‘Tools for the New POPs’ and Inception Workshop for UNEP/GEF project on ‘Implementation of the GMP in Asia’

**Air samples: guidelines and experiences from the GEF GMP1  
projects**

Esteban Abad

**Dioxin Laboratory**

Hanoi, Vietnam, 25<sup>th</sup>- 27<sup>th</sup> January 2016