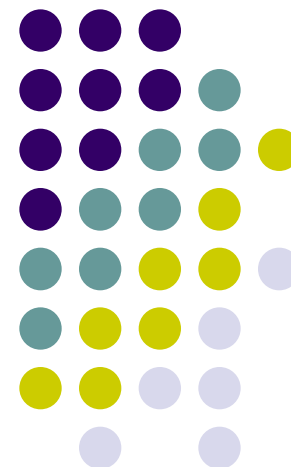


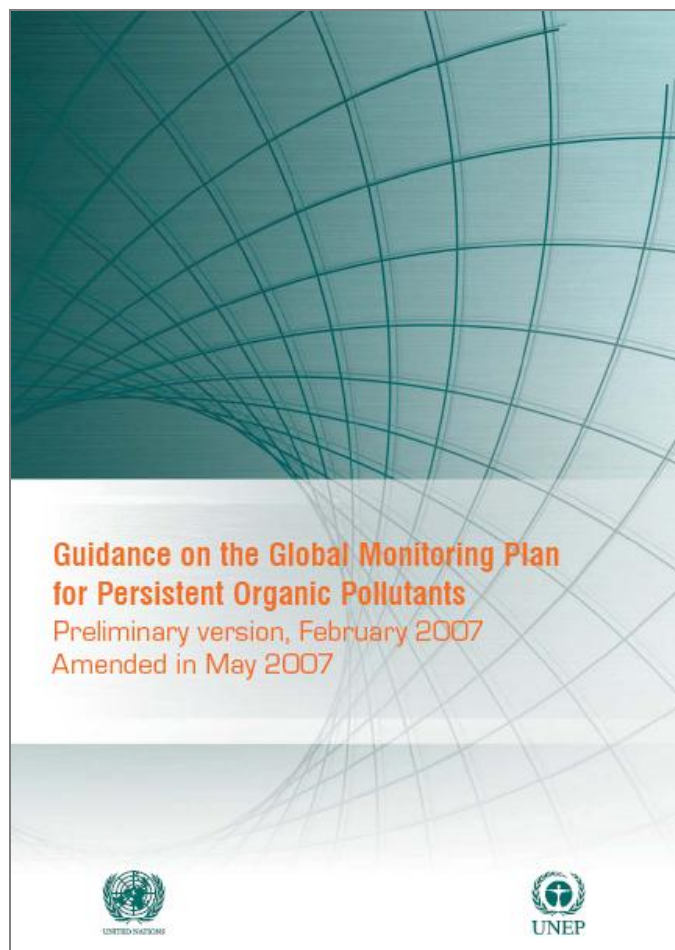
# Global Monitoring Plan on POPs



United Nations Environment Programme (UNEP)  
Chemicals Branch/DTIE  
chemin des Anémones 11-13  
CH-1219 Châtelaine (GE)  
Switzerland  
[Science.chemicals@unep.org](mailto:Science.chemicals@unep.org)



# Guidance for Global Monitoring Plan



UNEP/GEF projects have contributed to the development of the guidance to the GMP

UNITED  
NATIONS



SC

UNEP/POPS/COP.6/INF/31

Distr.: General  
4 February 2013

English only



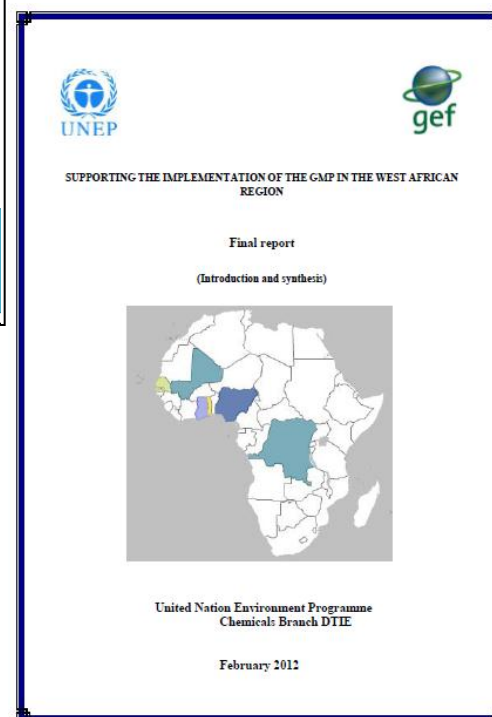
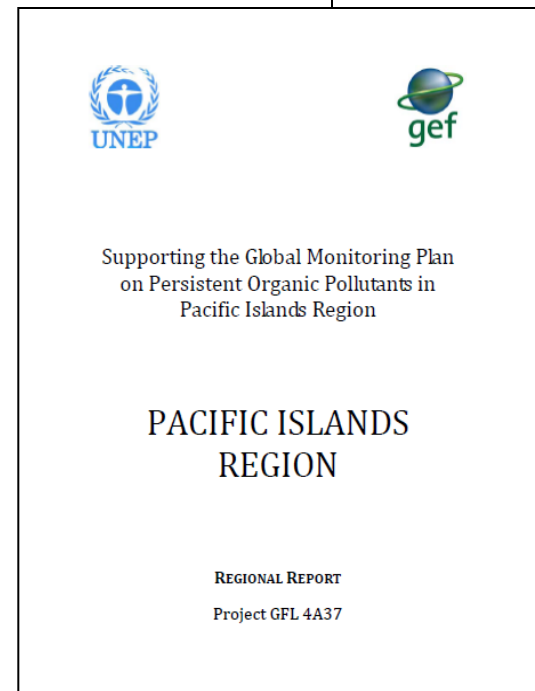
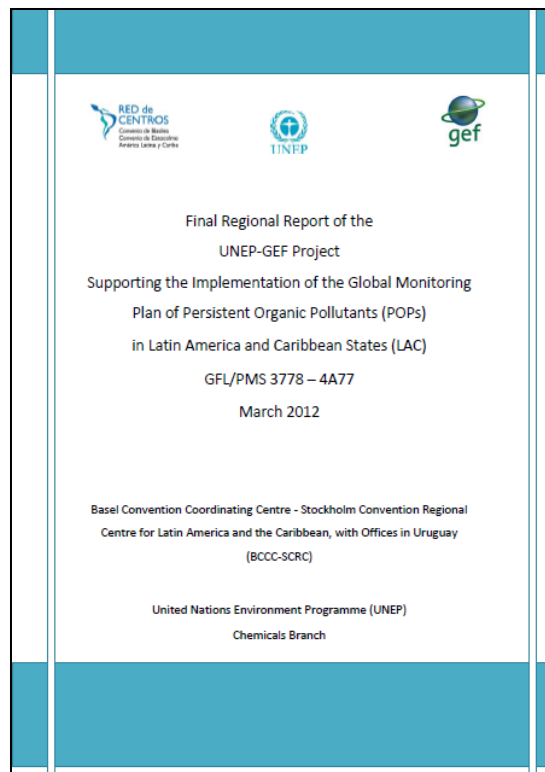
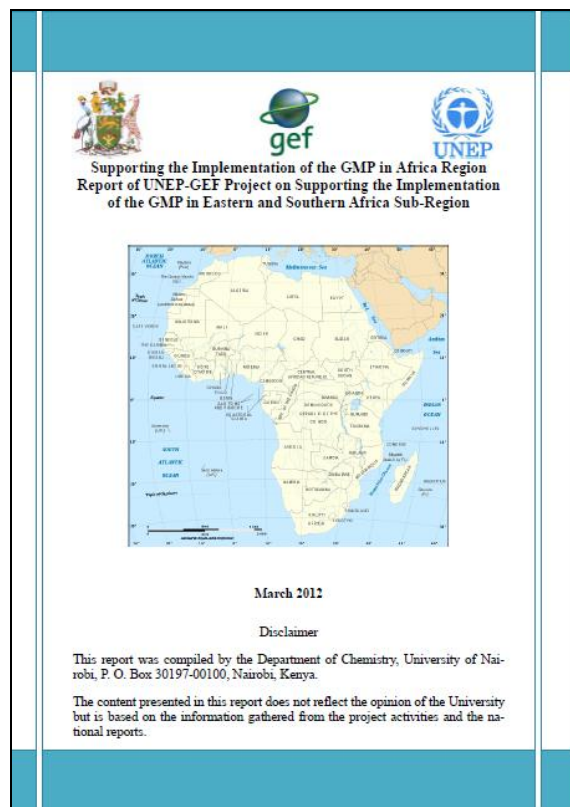
**Stockholm Convention  
on Persistent Organic  
Pollutants**

Conference of the Parties to the Stockholm  
Convention on Persistent Organic Pollutants  
Sixth meeting  
Geneva, 28 April–10 May 2013  
Item 5 (i) of the provisional agenda\*

Matters related to the implementation of the  
Convention: effectiveness evaluation

**Guidance on the global monitoring plan for persistent  
organic pollutants**

# Four UNEP/GEF GMP Projects (GEF-4)



## UNEP/GEF Project “Establishing the Tools for the Analysis of Nine New POPs”



### A LABORATORY GUIDE TO PFC ANALYSIS

PLAY FILM

FRENCH SUBTITLES

SPANISH SUBTITLES

ENGLISH SUBTITLES

Instructive movie for download from <http://www.youtube.com/watch?v=Rcjgq8HTMxs>

For further information: [science.chemicals@unep.org](mailto:science.chemicals@unep.org)

**Presentation: Tuesday, 30 April 2013, Room 3**



# POPs Analysis and Monitoring

## Pacific Islands Region

- GMP Regional Report of Pacific Islands Region
- GMP National Report of Kiribati
- GMP National Report of Marshall Islands
- GMP National Report of Niue
- GMP National Report of Palau
- GMP National Report of Solomon Islands
- GMP National Report of Samoa

## GRULAC Region

- GMP Regional Report of GRULAC Region (en, sp)
- GMP National Report of Antigua and Barbuda
- GMP National Report of Brazil
- GMP National Report of Chile
- GMP National Report of Ecuador
- GMP National Report of Jamaica
- GMP National Report of Mexico (sp)
- GMP National Report of Peru (sp)

## East and South Africa

- GMP Regional Report of E+S Africa
- GMP National Report of Egypt
- GMP National Report of Ethiopia
- GMP National Report of Kenya
- GMP National Report of Mauritius
- GMP National Report of Uganda
- GMP National Report of Zambia

## West Africa

- GMP Regional Report of West Africa (en, fr)
- GMP National Report of DR Congo (fr)
- GMP National Report of Ghana
- GMP National Report of Mali (fr)
- GMP National Report of Nigeria
- GMP National Report of Senegal (fr)
- GMP National Report of Togo (fr)

## Cross-cuttings

- IVM Mirror samples Final Report (Africa, Pacific, Barbados)
- MTM Report. Analysis of dl POPs in PUF samples (Africa and Pacific Islands)
- MTM Report dl-POPs in National Samples
- UNEP Report: Passive air sampling (PAS)

## Interlaboratory Assessments

- Biennial Global Interlaboratory Assessment on POPs – Round 1

## Regional and national reports

## Training reports

- Fiji Training Report

- Regional Report for GRULAC
- Reports of Antigua and Barbuda (en, sp); Brazil (sp); Chile (sp); Ecuador (sp); Jamaica (en, sp); Mexico (sp); Peru (sp); Uruguay (sp)

- Egypt Training Report
- Kenya Training Report
- Mauritius Training Report
- Zambia Training Report

- Ghana Training Report
- Mali Training Report
- Senegal Training Report



March 2002

Division

This report was compiled by the Department of Chemistry, University of the Witwatersrand, Johannesburg, South Africa.

The report presented in this report does not reflect the opinion of the University but is based on the information gathered from the project activities and the related reports.



# UNEP's Capacity Building (2010)

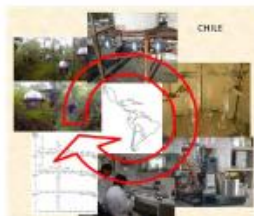


by CSIC, IVM VU Amsterdam, MTM Örebro

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; 2011)	2	
<b>Total:</b>	<b>20</b>	<b>32</b>



Informe de Desarrollo de Capacidades del PNUMA para el  
Análisis de COP en América Latina - Chile  
Capacitación en las Instalaciones del Instituto de Salud Pública  
de Chile y Resultados de las Muestras Nacionales



CHILE

Preparado por  
Laboratorio de Dioxinas  
Departamento de Química Ambiental  
Instituto de Diagnóstico Ambiental y Estudios del Agua (IDAEA)  
Consejo Superior de Investigaciones Científicas (CSIC)

Para

Programa de las Naciones Unidas por el Medio Ambiente  
División de Tecnología, Industria y Economía  
Sub-división Productos Químicos

Barcelona, Septiembre de 2011

Report of UNEP Capacity Building for POP analysis -  
On-Site Training of Staff of Laboratory of Environmental Quality  
Control Laboratory of Ceres-Locustox in Dakar, Senegal  
4 – 12 October 2010

Jacco Koekkoek

Institute for Environmental Studies (IVM), VU University, Amsterdam, the  
Netherlands

Report of UNEP Capacity Building for POP analysis – On-Site Training of Staff of  
the Laboratory of the Department of Chemistry, University of Zambia, Lusaka,  
Zambia, 11-22 October 2010

Stefan van Leeuwen, Sjoerd van Beuzekom

Institute for Environmental Studies (IVM), VU University, Amsterdam, the Netherlands



Report of UNEP capacity building for POP analysis – On-site training of  
staff of Quality Control of Agricultural Products (QCAP) at the Central  
Laboratory of Residue Analysis of Pesticides & Heavy Metals in Food  
in Giza, Egypt, 1-4 November 2010

Jessika Hagberg and Anna Kärrman

MTM Research Centre, School of Science and Technology, Örebro University, Sweden

2011-03-09

Report of UNEP Capacity Building for POP Analysis – On-Site Training of Staff of  
Laboratory of the Directorate of Government Analytical Laboratory in Kampala,  
Uganda, 2-12 August 2010

Jacob de Boer, Kees Swart

Institute for Environmental Studies (IVM), VU University, Amsterdam, the Netherlands

# Location of PAS

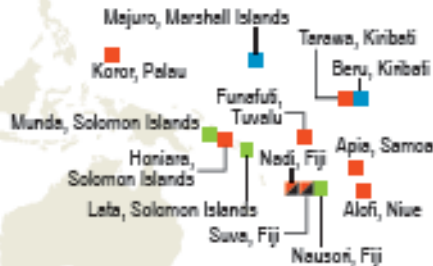
## Latin American & Caribbean regional group



## African regional group



## Asia-Pacific regional group



### Sampling sites



Map produced by ZOI Environment Network, June 2012

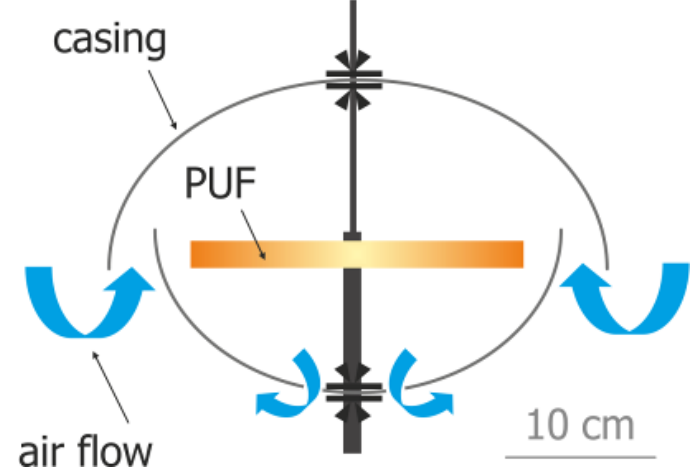
Exposure for 3 consecutive months  
4x3 months (2010-2011)  
PCDD/PCDF: aggregated into one year



# PAS used in 3 regions



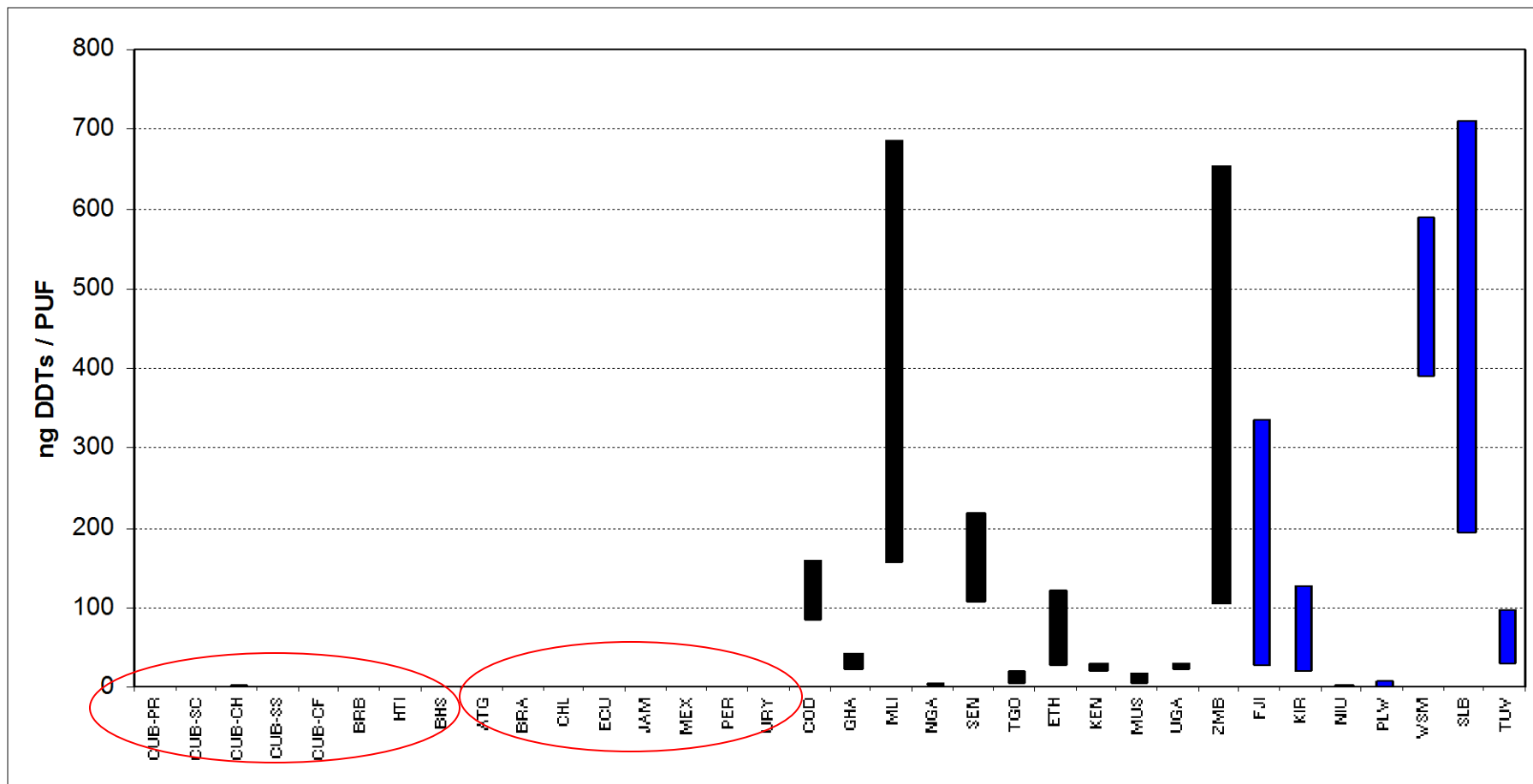
GAPS sampler in Pacific ↑  
Spanish sampler in GRULAC →  
MONET sampler in Africa ↓



# PAS exposed in 32 countries



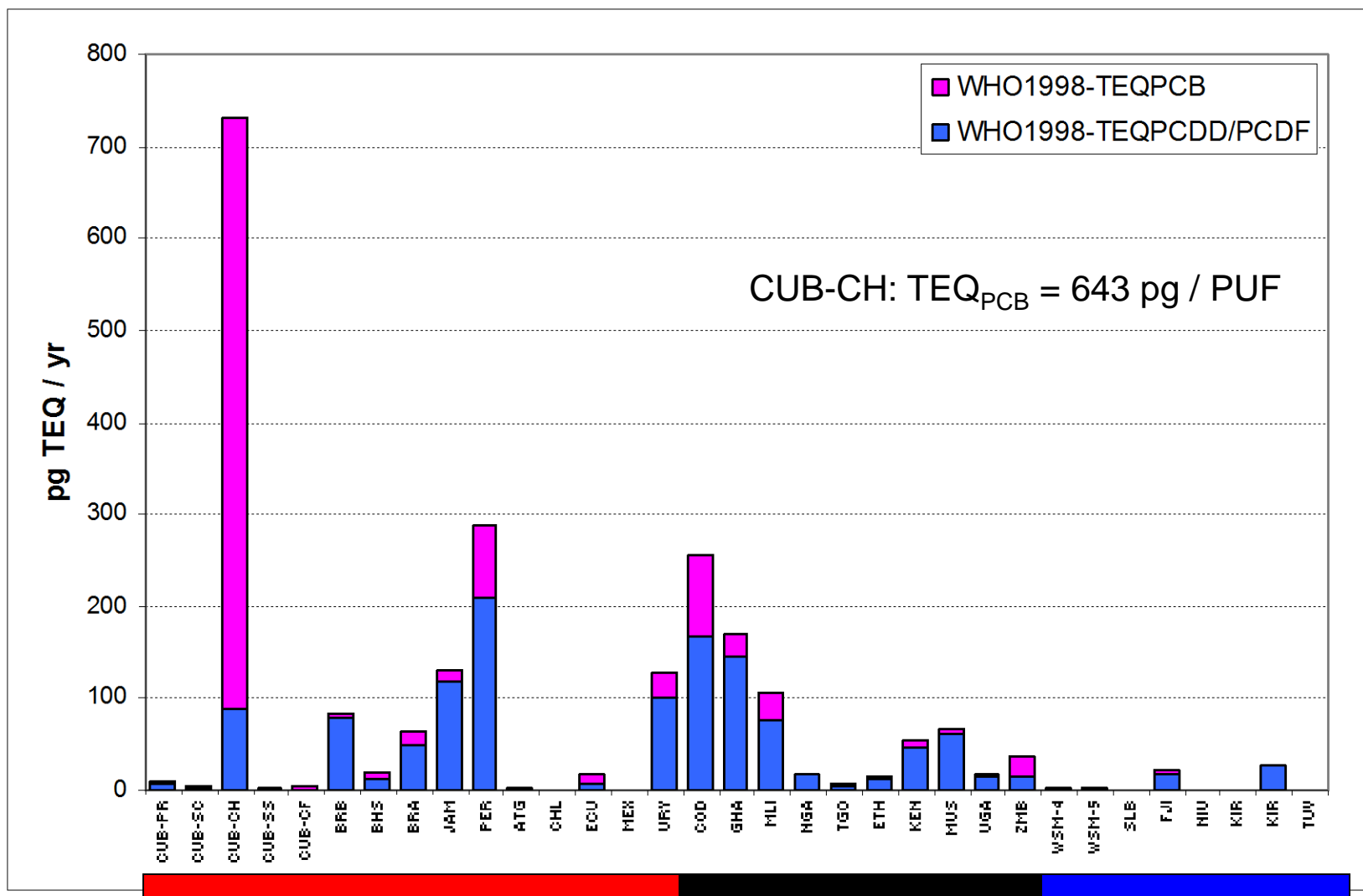
# DDTs in PAS (2010-2011)



Each bar represents min-max  
of 4 measurements



# dl-POPs in PUFs: Annual aggregate



# Human milk sampling



## UNEP-coordinated Survey of Mothers' Milk for Persistent Organic Pollutants

### Guidelines for Organization, Sampling and Analysis

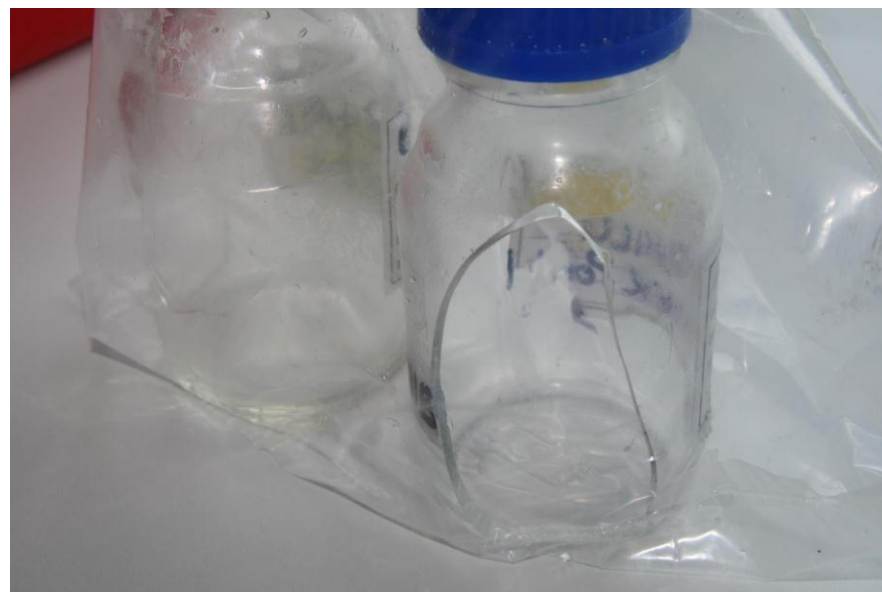
Chemicals Branch  
United Nations Environment Programme (UNEP)

July 2012

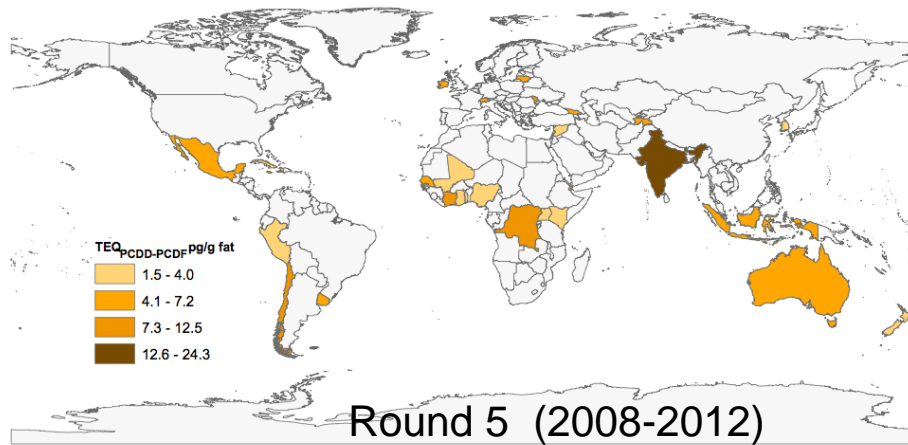
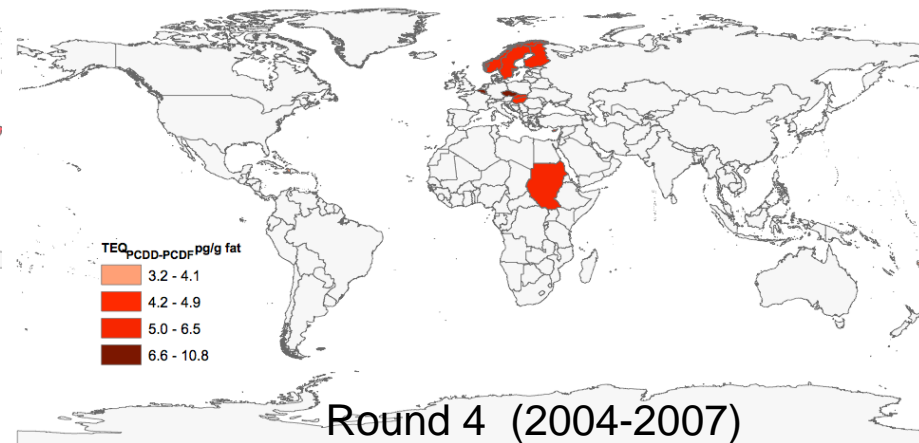
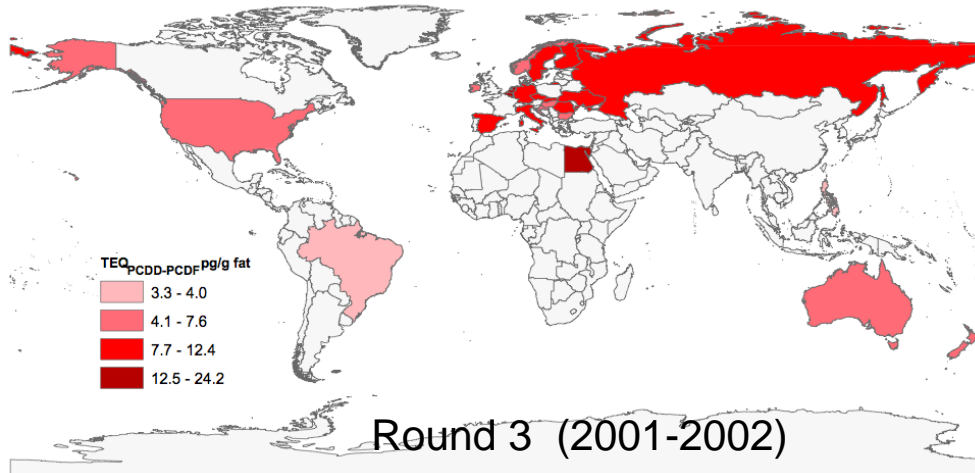




# Shipment of glass bottles

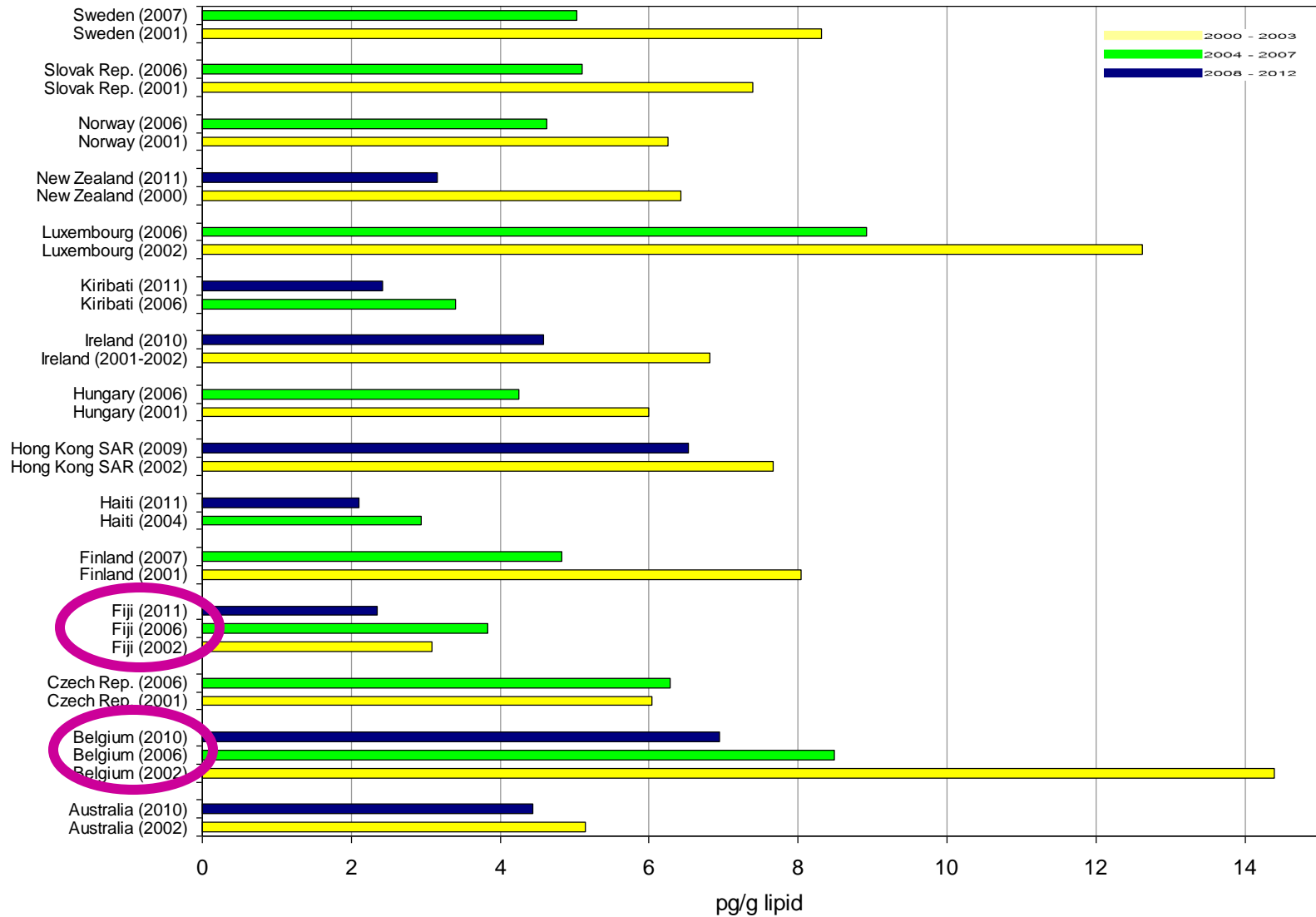


# PCDD/PCDF in Mothers' Milk



Total of **85** national samples analysed (rounds 3-5);  
Only a few countries participated in more than one round

# PCDD/PCDF in human milk (WHO-TEQ)



Only Belgium and Fiji participated in three rounds of surveys

# Summary of results of 12 POPs in mothers' milk (5<sup>th</sup> round)



POP	Unit	n	min	max
$\Sigma$ drins	ng g <sup>-1</sup> fat	30	0	11.2
$\Sigma$ chlordanes	ng g <sup>-1</sup> fat	30	0.5	16.3
$\Sigma$ DDTs	ng g <sup>-1</sup> fat	30	51	23,000
$\Sigma$ heptachlors	ng g <sup>-1</sup> fat	30	0	3.3
HCB	ng g <sup>-1</sup> fat	30	1.4	15.9
Mirex	ng g <sup>-1</sup> fat	30	0	9.8
$\Sigma$ toxaphene	ng g <sup>-1</sup> fat	30	0	4.1
$\Sigma$ PCB <sub>7</sub>	ng g <sup>-1</sup> fat	29	4.6	70.2
TEQ <sub>PCDD/PCDF</sub>	pg g <sup>-1</sup> fat	30	2.2	11.2
TEQ <sub>PCB</sub>	pg g <sup>-1</sup> fat	29	0.9	5.3
TEQ <sub>total</sub>	pg g <sup>-1</sup> fat	29	3.3	15.3

# Conclusions



- External driver through Stockholm Convention on POPs;
- Harmonized approaches and protocols essential for comparative assessments;
- Intensive coordination and cooperation between UNEP, expert back-up laboratories, and national experts necessary  
⇒ networks and capacities successfully developed;
- Quantitative data: All groups of POPs quantifiable in air and mothers' milk; however at different scales;
- In the next step, new POPs and new water matrix has to be integrated and the established networks continued;
- Further training of local laboratories is essential  
**GMP 2 projects – PIF approved.**



# Acknowledgment



- Funding and cofinance:
  - GEF through projects 4A37, 4A76, 4A77, 4A80 and 4B97;
  - Cofinance and support by the Secretariat of the Stockholm Convention, the World Health Organisation, the Government of Norway, Environment Canada, RECETOX, and UNEP;
- UNEP thanks:
  - Sub-regional coordinators in Fiji, Kenya, Mali und Uruguay;
  - National and local staff for cooperation and implementation;
  - Expert laboratories for POPs analysis - UNEP/WHO Reference Laboratory, CVUA Freiburg (Germany), CSIC Barcelona (Spain), MTM Research Centre, Örebro University (Sweden), and IVM VU Free University Amsterdam (the Netherlands);
  - We thank all donor mothers that provided human milk for these projects

