



Introduction to the Global Monitoring Plan under the Stockholm Convention

GMP data warehouse

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Stockholm Convention
Regional Centre for Capacity Building
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Final Results Workshop of the UNEP/GEF project on 'Establishing the Tools and Methods to Include the Nine New POPs into Global Monitoring Plan' and Inception Workshop for UNEP/GEF project on 'Continuing Regional Support for the POPs GMP under Stockholm Convention in the Africa Region', Ghana, Accra, 6-8 July 2016

Outline



Research Centre
for Toxic Compounds
in the Environment

1. GMP in a context, serving Effectiveness Evaluation
2. Global Monitoring Plan Data Warehouse in Brief (GMP DWH)
3. How to use GMP DWH - “online”



What is Global Monitoring Plan (GMP)?

GMP =The Global Monitoring Plan for persistent organic pollutants (POPs) = an important component of the effectiveness evaluation of the Stockholm Convention.

objective:

provide a harmonized organizational framework for the collection of comparable monitoring data on the presence of POPs from all regions, in order to identify changes in their concentrations over time, as well as on regional and global environmental transport. - ref Art16

GMP outputs: - regional and global reports

<http://chm.pops.int/Programmes/GlobalMonitoringPlan/MonitoringReports/tabid/525/Default.asp>



Based on the decisions SC-1/13 and SC-2/13 the ad hoc technical group prepared:

Implementation Plan for the Global Monitoring Plan for Persistent Organic Pollutants adopted by decision SC-3/19, original version UNEP/POPS/COP.3/23/Rev.1 (most recent version UNEP/POPS/COP.6/INF/31/Add.2)

the first draft of the **Guidance Document on the Global Monitoring Plan for POPs**

(UNEP/POPS/COP.3/INF/14) - most recent UNEP/POPS/COP.7/INF/39

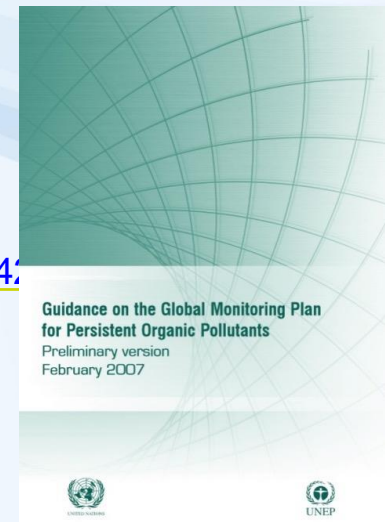
[http://chm.pops.int/TheConvention/ConferenceoftheParties/Meetings/COP7/tabid/456/entModID/870/EventID/543/xmid/13075/Default.aspx](http://chm.pops.int/TheConvention/ConferenceoftheParties/Meetings/COP7/tabid/456/Default.aspx?entModID/870/EventID/543/xmid/13075/Default.aspx)

Technical guidance on Collection, analysis and reporting of information and data

Statistical considerations

+ harmonized regime for the preparation of monitoring reports

regular updates to increase comparability and consistency to provide a better approach to Effectiveness Evaluation



What is considered in the Effectiveness Evaluation?

Process flow for effectiveness evaluation, stage 1

<p><i>Reports and other monitoring information provided pursuant to paragraph 2 of Article 16</i></p>	<p><i>National reports submitted pursuant to Article 15 and other information such as reports from the financial mechanism and reports on technical assistance</i></p>	<p><i>Non-compliance information provided pursuant to the procedures established under Article 17</i></p>
<p>Environmental monitoring: parties through regional organization groups gather, analyse and report on regional environmental monitoring information according to the global monitoring plan and provide summaries for a global report.</p>	<p>Parties report to the Secretariat on national measures.</p> <p>The Secretariat and the entity entrusted with administering the financial mechanism gather information on financial and technical assistance.</p>	<p>The compliance group administers the compliance mechanism.</p>
<p>The global coordination group compiles regional summaries into the global report, evaluates and assesses changes in environmental levels of persistent organic pollutants over time, assesses the effects of long-range transport and climate on levels, evaluates the global monitoring plan and makes recommendations to the Conference of the Parties.</p>	<p>The Secretariat compiles information received from parties.</p> <p>The entity entrusted with administering the financial mechanism prepares a report.</p> <p>The Secretariat prepares reports on financial and technical assistance.</p>	<p>The compliance group identifies both individual and systemic non-compliance and prepares a report.</p>
<p>Reports are submitted to the Conference of the Parties.</p>		



How to perform the evaluation for GMP?

- a) Generate comparable data = specific harmonized rules = in GMP Guidance document see chapter 2
- b) Someone to manage data – experts/groups operating monitoring programmes and
- c) Have tools to work with available information effectively:
Compare – over time/ geographically: NEED data
Visualize – coverage, levels, trends: NEED tool
Evaluate - identify trends : NEED data time series

it is very difficult to work with .pdf files to compare information effectively



What is Global Monitoring Plan Data Warehouse?

Online tool to store and visualize data on levels of POPs in core matrices

Purpose

- Serve as regional node for electronic data collection, storage, processing and presentation in regions with limited capacity;
- Support the development of regional monitoring reports and the global report in the frame of the GMP;
- Support the effectiveness evaluation of the Stockholm Convention by compiling and visualizing results of global POPs monitoring activities;
- Provide user-friendly access to the POPs monitoring data to all stakeholders and the broad public (launch on 7 May 2015)
- Provide information relevant for implementation of the Article 16 (effectiveness evaluation)



How?

Work mandated by decision SC - 6/23, carried in accordance with Chapter 6 of the Guidance on the Global Monitoring Plan for Persistent Organic Pollutants relevant to data handling (UNEP/POPS/COP.6/INF/31) in the period 2012-2014.

Supervision by

Stockholm Convention Secretariat under the guidance of the GMP Global Coordination Group and Regional Organization Groups

Performed by

Stockholm Convention Regional Centre in the Czech Republic through the Research Centre for Toxic Compounds in the Environment and the Institute of Biostatistics and Analyses, Masaryk University, Brno, Czech Republic



Key Attributes of the GMP DWH

- Modern multi-modular data repository for both primary and aggregated data with a uniform visualization interface
- Fully parametric data sheets - harmonized data and information structure supporting broader comparability of available information
- Standardized data structure, handling and outputs - work with data from a wide range of heterogeneous sources without compromising incoming information
- Transparent multilayer procedure for data validation
- Presentation of data in a uniform format through visualization portal
- Public access to global data once the validation process is

completed



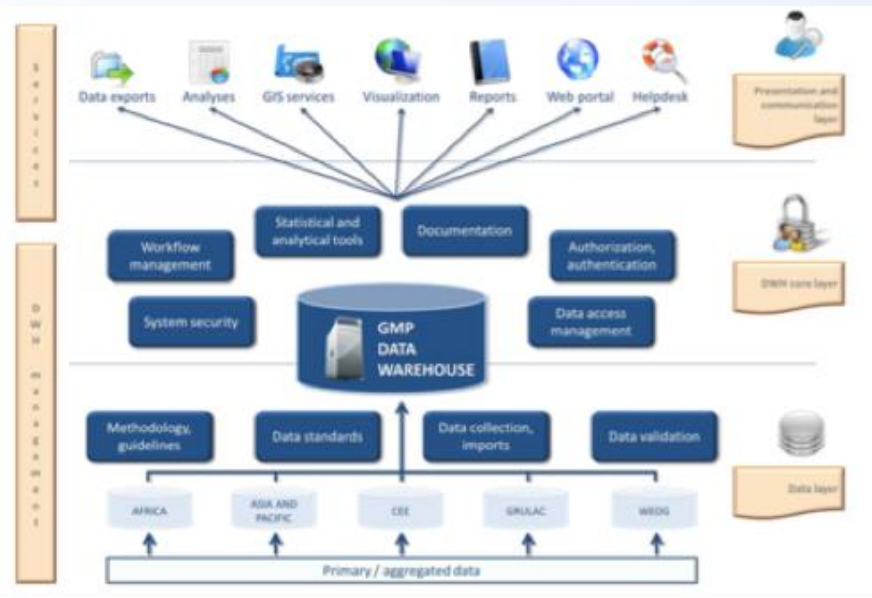


GMP DWH Structure

Data layer for data import, online data collection, data standards (code lists) and archiving.

Core layer for data management, validation, recoding, transformation, and background for data services (GIS, analytical and statistical tools, data processing, workflow).

Presentation layer for visualization portal, presentation tools and web services.





GMP DWH Structure

- Facilitates user friendly browsing and analysis of POPs data from all over the world in maps, charts and tables.
- Contains information on POPs concentrations in core matrices ambient air, human tissues (breast milk and maternal blood) and surface water for water-soluble POPs (perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride) collected in the framework of the GMP and validated by the Regional Organization Groups of the five UN regions. These data are presented also in the regional monitoring reports.
- Provides information on geographical coverage of existing monitoring programmes in individual countries and regions sorted by matrices, time and compounds in the format of annually aggregated concentrations.
- Helpdesk support is available
- Offers several visualization options for the selected data and their analysis



GMP Data Visualization 2014

Do



**SPATIAL
DISTRIBUTION**

DATA
AVAILABILITY

SUMMARY
STATISTICS

TIME
SERIES

DATA
EXPORTS

Data selection

Settings & Legend



Year:

-- Choose an option --

Download map

Switch basemap

source: pops-gmp.org



GMP DWH Visualization portal



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SPATIAL DISTRIBUTION **DATA AVAILABILITY** SUMMARY STATISTICS TIME SERIES DATA EXPORTS

Submenu

Available Data - Parameters

Available Data - Time

Data selection

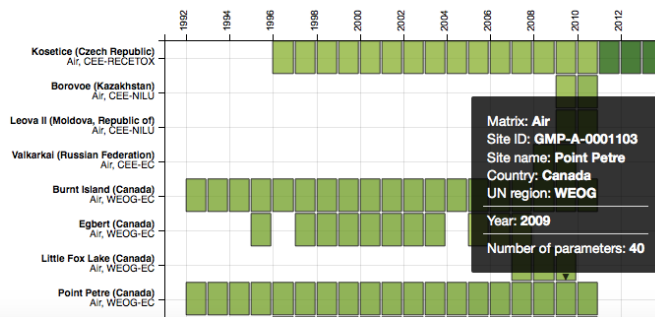
Data Set Summary

Items contained in the selected data set:

Matrix: Air
Matrix specification: Active

Available Data - Time

Matrix: [Ignore this option](#) Year:



Settings

Order by (rows)

Order direction

Legend

Data availability parameters
 Minimum: 2
 Maximum: 97

[Download legend](#)



SPATIAL DISTRIBUTION **DATA AVAILABILITY** SUMMARY STATISTICS TIME SERIES DATA EXPORTS

Submenu

Available Data - Parameters

Available Data - Time

Data selection

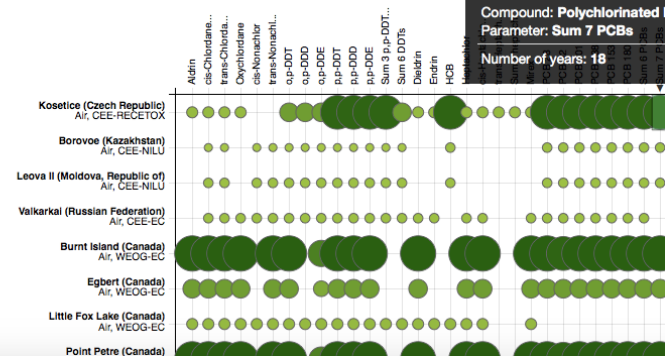
Data Set Summary

Items contained in the selected data set:

Matrix: Air
Matrix specification: Active
UN Regional Group: CEE, WEOG

Available Data - Parameters

Matrix: [Ignore this option](#) Compound:



Settings

Order by (rows)

Order direction

Legend

Data availability years
 Minimum: 1
 Maximum: 19

[Download legend](#)





SPATIAL DISTRIBUTION DATA AVAILABILITY **SUMMARY STATISTICS** TIME SERIES DATA EXPORTS

Summary Statistics

Matrix: * Matrix specification: * Compound: *

Parameter: * Unit: * Site:

Year:

Settings

Central value

Range

Order by

Order direction

Legend

Percentile 5/95:

Median:

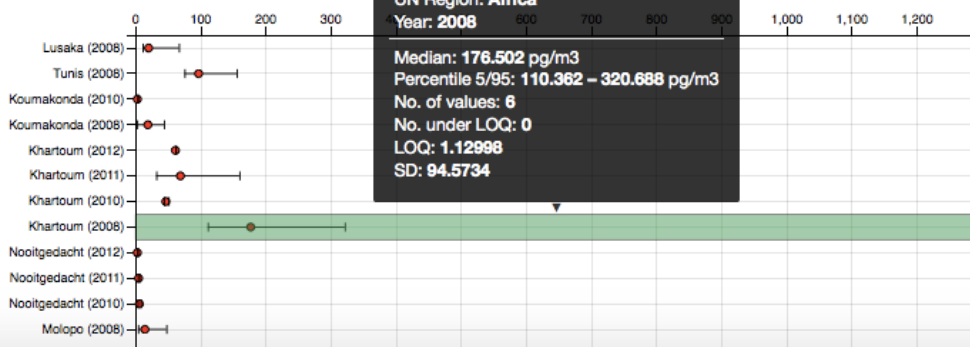
[Download legend](#)

Data selection

Data Set Summary

Items contained in the selected data set:

- Matrix: Air
- Matrix specification: Passive
- UN Regional Group: Africa
- Country: Congo, Congo, Democratic Republic of...
- Sea: Not classified
- Site Type: Remote, Rural, Sub-urban...
- Time Range: 2008, 2012
- Status: gmp-approved
- Monitoring programme: MONET
- Data Provider: Africa-RECETOX
- Compound: Polychlorinated biphenyls (PCB)





Suomenu

[Trend Map](#)

[Time Series Analysis](#) >

[Time Series Bar Chart Map](#)

Data selection

Data Set Summary

Items contained in the selected data set:

Matrix: Air
Matrix specification: Active
UN Regional Group: WEOG
Country: Sweden
Sea: Not classified
Site Type: Remote
Time Range: 1995, 2010

Time Series Analysis

Matrix: *
Air

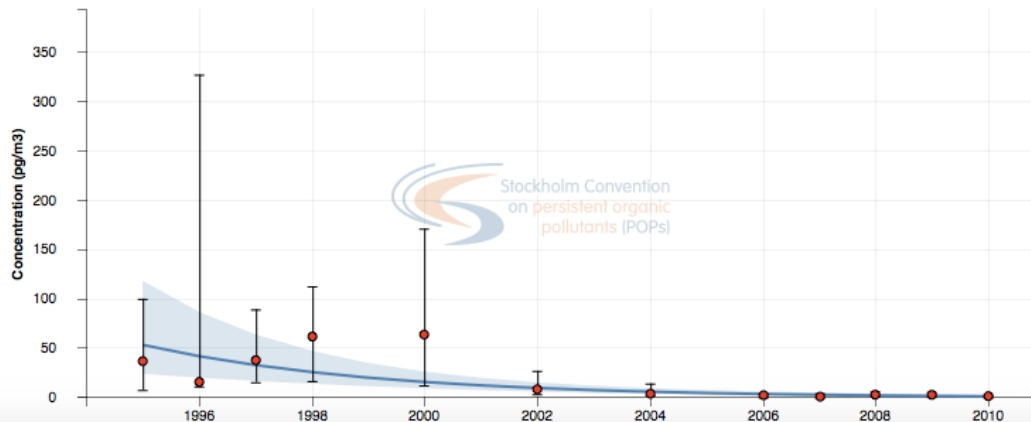
Matrix specification: *
Active

Compound: *
Gamma-hexachlorocyclohexane (

Parameter: *
Gamma-HCH

Unit: *
pg/m3

Site: *
Aspvreten



Settings

Central value
Median

Range
Percentile 5/95

Trend type
Exponential

Legend

Percentile 5/95:

Median:

Trend and its 95% confidence interval:

Download legend



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SPATIAL DISTRIBUTION DATA AVAILABILITY SUMMARY STATISTICS **TIME SERIES** DATA EXPORTS

Submenu

Trend Map >

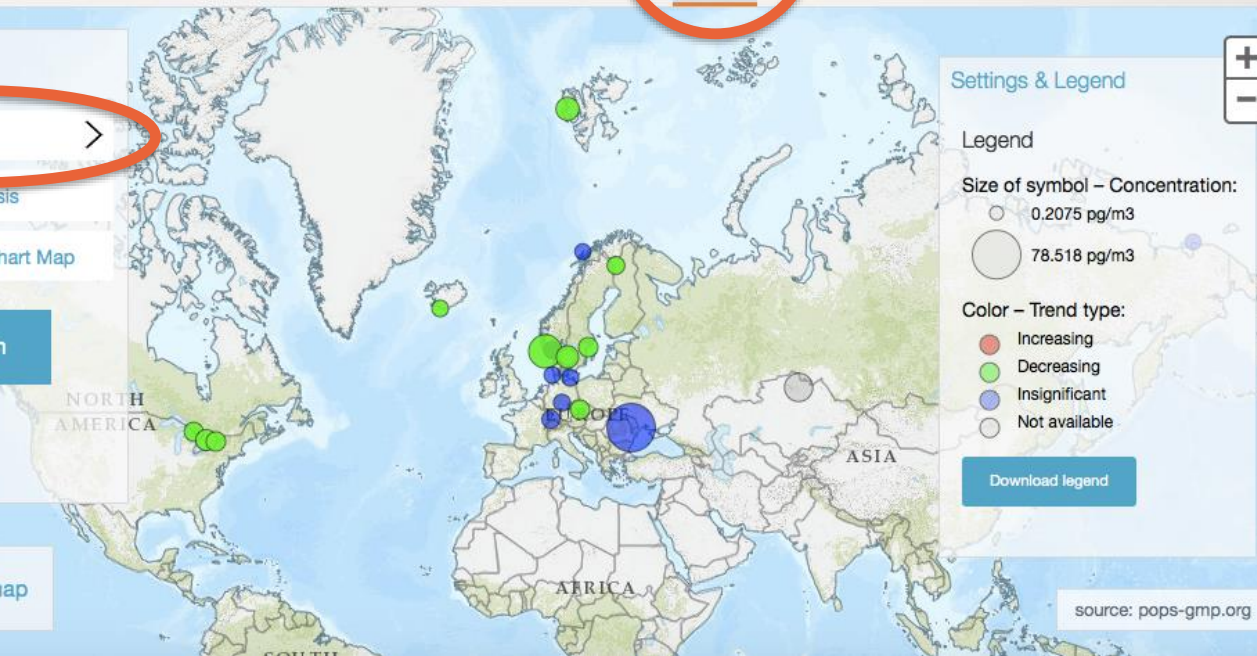
Time Series Analysis

Time Series Bar Chart Map

Data selection

Download map

Switch basemap



Settings & Legend

Legend

Size of symbol – Concentration:

○ 0.2075 pg/m3

○ 78.518 pg/m3

Color – Trend type:

● Increasing

● Decreasing

● Insignificant

● Not available

Download legend

source: pops-gmp.org

Filters

Matrix:

Air

Matrix specification:

Active

Compound:

Alpha-hexachlorocyclohexane (

Parameter:

Alpha-HCH

Unit:



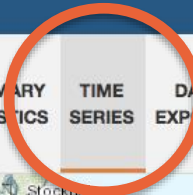


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SPATIAL DATA SUMMARY TIME DATA
DISTRIBUTION AVAILABILITY STATISTICS SERIES EXPORTS



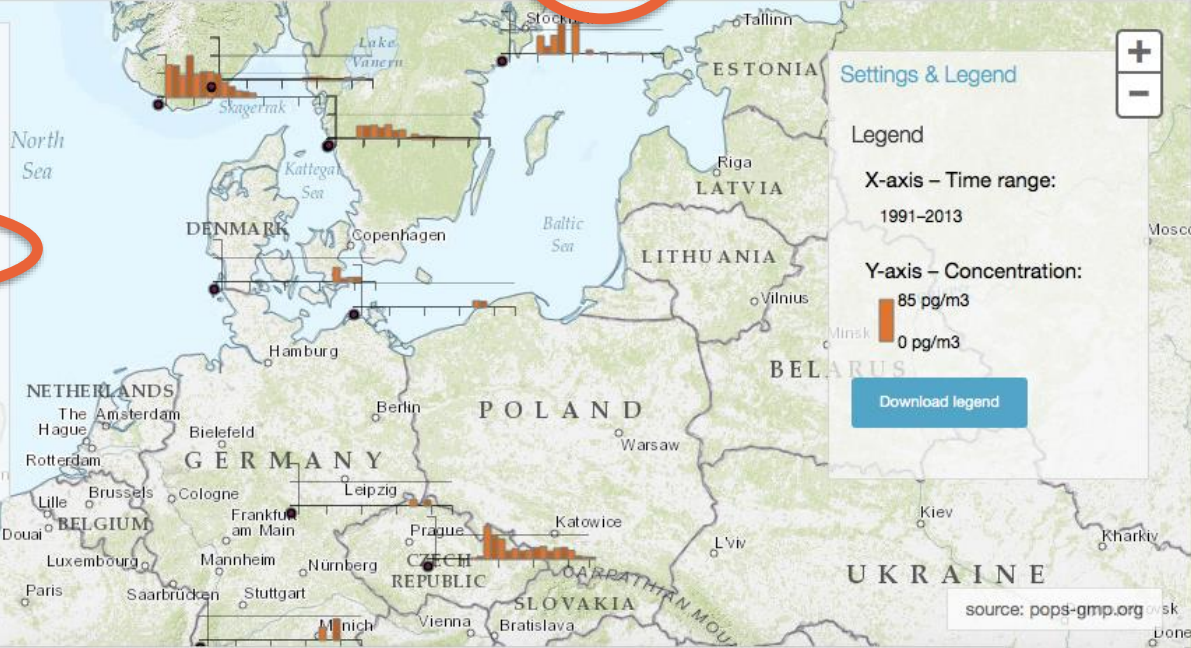
Submenu

- Trend Map
- Time Series Analysis
- Time Series Bar Chart Map >**

Data selection

Download map

Switch basemap



Filters

Matrix:
Air

Matrix specification:
Active

Compound:
Gamma-hexachlorocyclohexan

Parameter:
Gamma-HCH

Unit:



SPATIAL
DISTRIBUTION

DATA
AVAILABILITY

SUMMARY
STATISTICS

TIME
SERIES

DATA
EXPORTS

This tool exports **several sets of summary information** related to the selected data.

In addition, **export of all data** in the selection defined by user is possible.



Scope of data in GMP DWH

The following monitoring programmes contributed data on **ambient air**:
AMAP, EMEP, GAPS, GAPS-GRULAC, GMP-UNEP, China National POPs Monitoring Project, Košetice, LAPAN, MONET, TOMPS

The following monitoring programmes contributed data on **human milk**:
UNEP/WHO Human Milk Survey, China National POPs Monitoring Project

The following programmes contributed data on **water** monitoring:
Ocean cruises Alcor, ANT1, ANT2, ARK, Endeavor, GA442, GA446, Maria S.Merian, Maria S.Merian-08, North, Oden, Polarstern-07, Polarstern-08, Snow Dragon



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Monitoring activities, and data collection and analysis are implemented in the five UN regions in cooperation with **strategic partners and through involvement of Regional Organization Groups and Global Coordination Group.**





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Three concluding slides





Incentives to use online tools

Ability to fully explore existing and new data (not just POPs)

- Harmonized data structure, secure data repository
- Analytical, presentation and export tools embedded
- Benefit from available online tools to enhance visibility of the work done nationally/regionally/locally
- Ready for use by multiple users
- Accessible on-line, not limited to one computer or office or institution
- Access can be restricted to internal users, but also allow public access (depends on the data owner's needs)
- Support of the GMP DWH team – data managers, analysts and helpdesk



What to do if....

I am a data owner and I would like to use similar on-line tools for my institution/ministry/country?

Please contact RECETOX (sebkova@recetox.muni.cz)

I am a data owner and I would like to contribute with my data to GMP or make them visible in the GMP data warehouse?

If these data are on persistent organic pollutants listed in the Stockholm Convention (or on candidate ones) and come from core matrices (ambient air, human tissues – milk or blood, water), please contact SC Secretariat together with your regional ROG coordinator.

I would like to see all data in GMP online?

GMP portal www.gmp-pops.org/visualization is publicly available. Feel free to visit the website.





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The joint team of the RECETOX and IBA:

Hůlek R., Borůvková J., Gregor J., Kalina J., Bednářová Z., Šebko

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**Thank you for the opportunity to present our
work and for your kind attention**

