

POPs and Emerging Chemicals of Concern

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- 1. Process**
- 2. Outcomes**
- 3. Future**

1 Process

The Global Monitoring Plan for POPs was established under Article 16 on Effectiveness Evaluation at COP 1 (2005) and is organized in 5 Regional Organization Groups (Africa, Asia and the Pacific, GRULAC, CEE, WEOG) and a Global Coordination Group

The GMP relies on a number of well established monitoring programs including AMAP, IADN, Great Lakes, LRTAP/EMEP, OSPAR, HELCOM, East Asia Network, MONET, GAPS, LAPAN, WHO/UNEP and national monitoring programs such as Australia, China, Japan and Spain.

1 Process

Schematic timeline of the work under article 16 of the SC

	2009	2011	2013	2015	2017	2019	2021	2023
COP	COP4	COP5	COP6	COP7	COP8	COP9	COP10	COP11
Global Monitoring Plan	5 Regional and Global reports (1)			5 Regional Reports (3)	Second Global Report (4)		5 Regional Reports	Third Global Report
Effectiveness Evaluation	First EE and EEWG	Draft EE framework	EE Framework adopted (2)	EE Committee established	EE report (5)		EE Committee	EE Report

1 <http://www.pops.int/Implementation/GlobalMonitoringPlan/MonitoringReports/tabid/525/Default>

2 UNEP/POPS/COP.6/27/Add.1/Rev.1

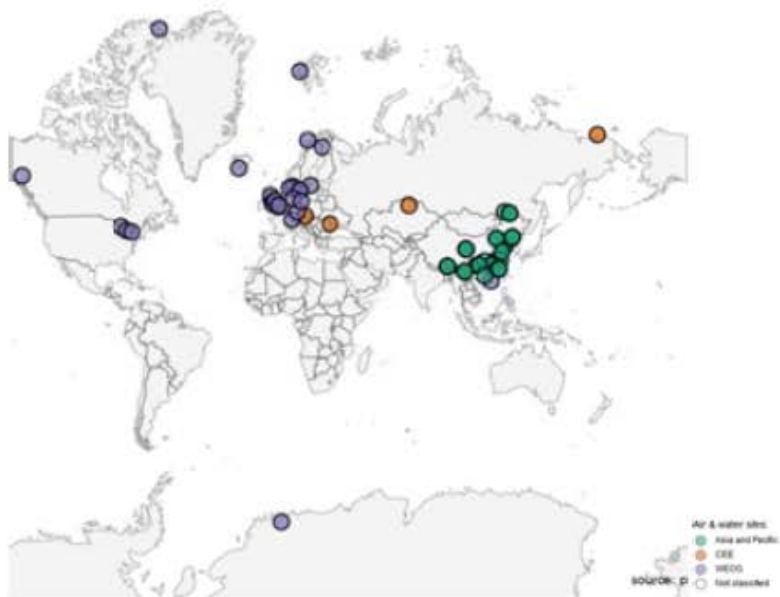
3 <http://www.pops.int/Implementation/GlobalMonitoringPlan/MonitoringReports/tabid/525/Default>

4 UNEP/POPS/COP.8/27/Add.1/Rev.1 and UNEP/POPS/COP.8/Inf.38

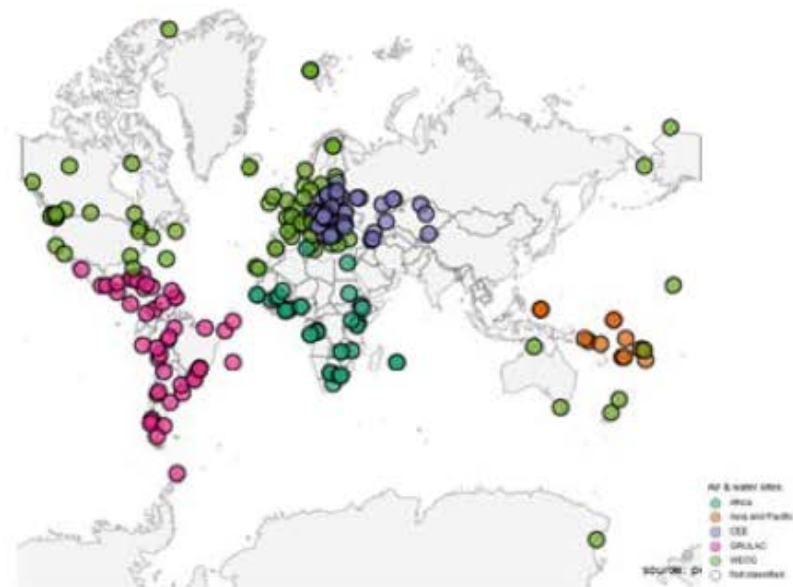
5 Effectiveness evaluation report (COP.8/22/Add.1 and COP.8/INF/40

Report of the effectiveness evaluation framework (COP8/INF/41)

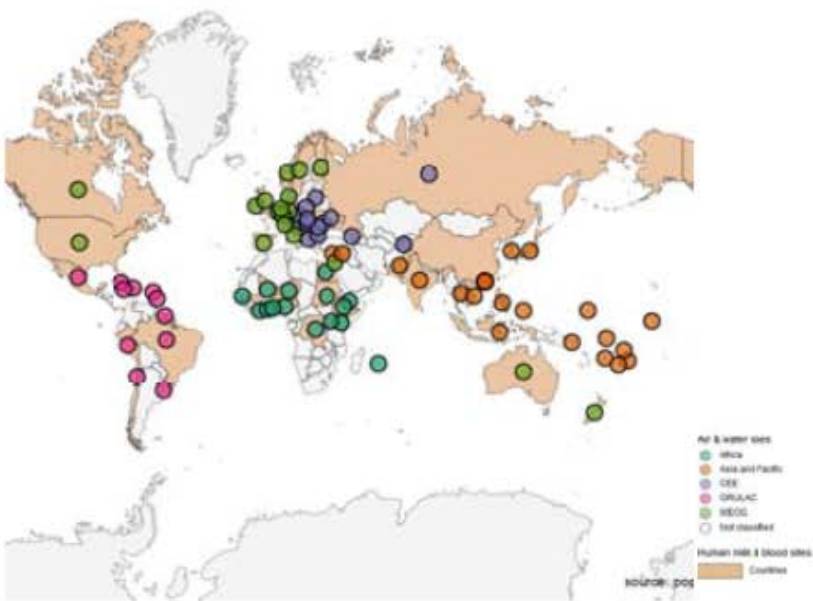
Substance specific factsheets (available online at <http://chm.pops.int>)



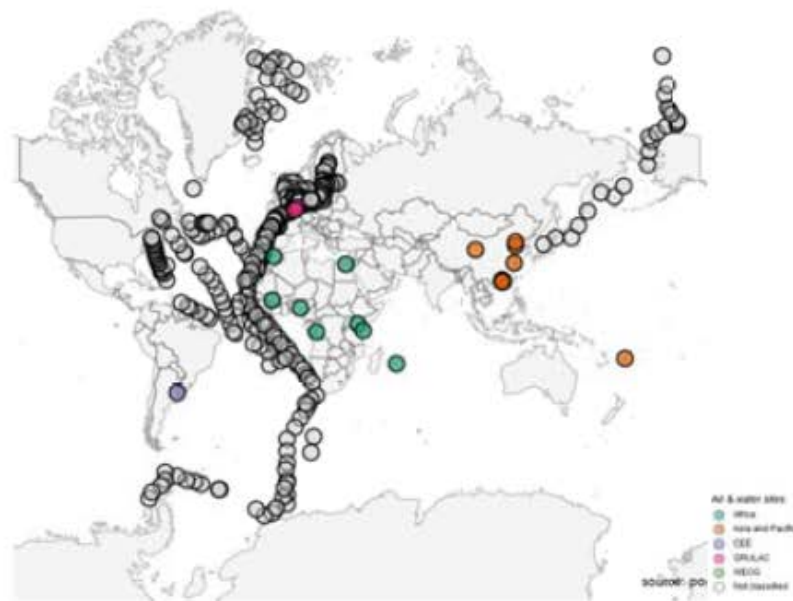
(a) Air monitoring: active sampling



(b) Air monitoring: passive sampling



(c) UNEP/WHO human milk survey



(d) Sampling of PFOS in water

Figure 2.2. Data availability in the second phase of the GMP: (a) air - active sampling; (b) air - passive sampling; (c) human milk; (d) water
Source: Global monitoring report 2016

Chemicals listed as POPs under the SC and under consideration by POPRC

1. Aldrin
2. Alpha-hexachlorocyclohexane (α -HCH)*
3. Beta-hexachlorocyclohexane (β -HCH)*
4. Chlordane
5. Chlordane*
6. Dichlorodiphenyltrichloroethane (DDT)
7. Dieldrin
8. Endosulfan**
9. Endrin
10. Gamma-hexachlorocyclohexane (γ -HCH)*
11. Heptachlor
12. Hexabromobiphenyl (HBB)*
13. Hexabromocyclododecane (HBCD)***
14. Hexabromodiphenyl ether and heptabromodiphenyl ether (PBDE)*
15. Hexachlorobenzene (HCB)
16. Mirex
17. Pentachlorobenzene (PeCBz)*
18. Perfluorooctane sulfonic acid (PFOS)*
19. Polychlorinated biphenyls (PCB)
20. Polychlorinated dibenzo- <i>para</i> -dioxins (PCDD)
21. Polychlorinated dibenzofurans (PCDF)
22. Tetrabromodiphenyl ether and pentabromodiphenyl ether (PBDE)*
23. Toxaphene
24. Hexachlorobutadiene (HCBd)*****
25. Pentachlorophenol (PCP)****
26. Polychlorinated naphthalenes (PCNs)****
27. Decabromodiphenyl ether (decaBDE; BDE-209)*****
28. Short-chain chlorinated paraffins (SCCPs)*****
29. <i>Dicofol</i> ;
30. <i>Pentadecafluorooctanoic acid (PFOA), its salts and PFOA-related compounds</i> ;
31. <i>Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds</i> .

(*) listed at COP4 in 2009

(**) listed at COP5 in 2011

(***) listed at COP6 in 2013

(****) listed at COP7 in 2015

(*****) listed at COP8 in 2017

Substances in italics are under consideration by POPRC (2018)

Chemicals of Emerging Arctic Concern

AMAP 2017

- **Newly detected** and/or have only limited measurements
- **Not regulated globally** or recently added to the Stockholm Convention
- **Widely used globally** some possibly in Arctic communities
- Environmentally **persistent** and with potential to cause **adverse effects**
- **Long range transport** (air & ocean) + **Local sources**

Chemicals of Emerging Arctic Concern (AMAP 2017)	Listed under SC
Per- and polyfluoroalkylated substances (PFASs)	
Polychlorinated naphthalenes (PCNs)	
Novel brominated flame retardants (BFRs)	
Hexachlorobutadiene (HCBd)	
Chlorinated flame retardants (CFRs)	
Current-use pesticides (CUPs)	
Organophosphorous flame retardants (PFRs)	
Pentachlorophenol (PCP) and pentachloroanisole (PCA)	
Phthalates	
Organotins	
Short-chain chlorinated paraffins (SCCPs)	
Byproduct PCBs	
Siloxanes	
Halogenated natural products (HNP)	
Pharmaceuticals and personal care products (PPCP)	
Plastics	

- Data for atmospheric, terrestrial and marine environments in the Arctic
- Concentrations in environmental media (humans not included)
- Spatial and temporal trends

AMAP POPs Expert Group Conclusions and Recommendations

- 16 major groups of CEAC & microplastics found in the Arctic
- Most data for air
- Concentrations generally lower than for legacy POPs
- PFRs surprisingly high relative to BFRs
- Local sources may be important for PPCPs, phthalates, siloxanes
- Some CEAC may meet criteria for POPs – P, B and LRTP e.g. Long chain PFCAs, some BFRs and CFRs
- Some CEAC do not fit criteria of POPs, e.g. Pharmaceuticals, microplastics

2 Outcomes

- National and international regulation of POPs have achieved significant decreases of some POPs, in recent decades by controlling primary sources.
- Secondary sources dominate the persistent low levels of legacy POPs (PCBs, DDTs, aHCH, PCDD/Fs)
- Substances listed later (PBDE, PFOS, HBCD) do seem to be slowing or reversing increases in most samples
- The coverage and abundance of good quality monitoring data on POPs has increased very significantly since 2009, in particular in Africa, GRULAC, and Asia and the Pacific.
- Long Range Transport Modeling has shown to be central in the interpretation and improvement of available data

3 Future

- Sustain, consolidate and develop existing cooperation and monitoring. Eg with LRTAP
- Develop strategies to deal with growing lists of substances of concern, many of them proposed as alternatives
- Harness new sampling and analytical tools,
- Data analysis and modeling to make best use of past and ongoing monitoring efforts to improve process understanding.
- Strive to facilitate and enhance QA/QC and data access.

3 Future

Other cross cutting issues for further work

More effort should be put in the interpretation of data and outreach concerning Public Health, in the wake of the work done by AMAP.

It would make much sense to pay more attention and develop cooperation with Labor, (ILO)