# POPs monitoring status of Mongolia and cooperation needs

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National Implementation Plans: Research Needs and Opportunities in Asia
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# Existing POPs monitoring data

GMP 2 Monitoring results was the first systematic survey to monitor POPs in the environment (air, soil, and water ), in foodstuffs, and humans in Mongolia.

The study results allowed for a prioritization of POPs, which will lead to follow-up studies and creation of national chemical analytical capacities to be used in future programmes.

Such analytical capacity should prioritize legacy POPs since these were more abundant in all matrices and especi ally DDT and HCH as there may be more contaminated sites from cattle dips; in addition, storage sites should be i ncluded.

The presence of HBCD in air samples may need further investigation if Mongolia had used large amounts of EPS/ XPS foams treated with HBCD in building insulation and despite low migration potential, HBCD was unintentionall y released and are reflected in air and were quantifiable in human milk.

Plastic pellet sampling (40 samples): Higher amount of PBDE, SCCP and MCCP in some samples and low amount of PFBS, PFHxS in many sample

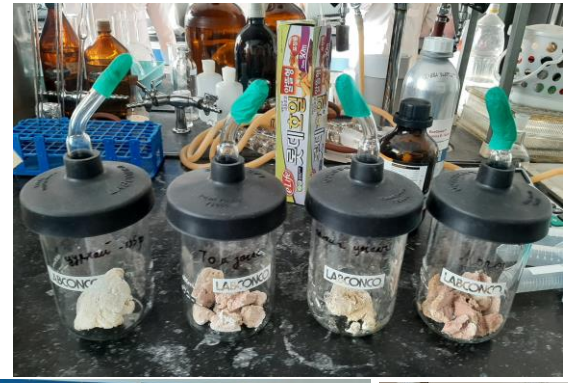
Brominated flame retardants, dioxin-like POPs, and PFAS were found at lower levels and may not warrant priority attention.

# Capacity building activities at national POPs laboratory

**Training**

- UNEP Chemicals' POPs training on PCB/OCP analysis on GC was organized (Prof. Jacob de Boer and Mr. Jacco Koekkoek) Feb 06-14, 2017
- Training on high volume air sampler (Dr. Esteban Abad); Sep 16-21, 2019

(8 samples were collected dl-POPs, PBDEs, basic POPs, and PFOS compounds)



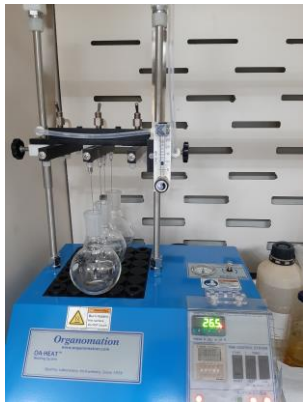
**Analytical methods/sample preparation**

Selecting analytical methods for POPs analysis by GC-MS/MS

**Analytical instruments:**

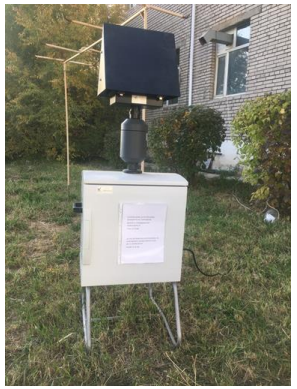
GC ECD 7890A from Agilent

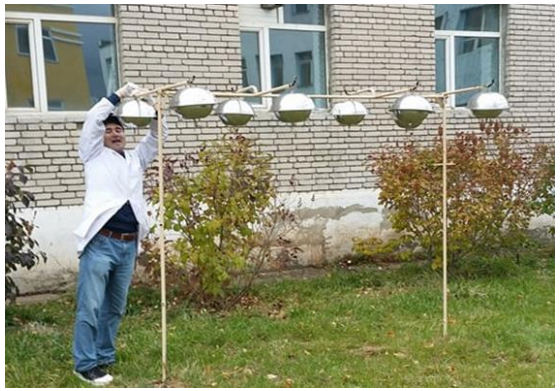
Thermo Scientific TSQ 8000 (Triple Quadrupole GC-MS/MS)




**Other lab facilities:**

- Air sampling equipment both for active and passive sampling
- Sample preparation room
- Chemicals, standard solutions etc.





**Participation in the 4th round POPs Interlaboratory assessment**

Test solution of analytical standards: OCP, PCB, PCDD/F, dl-PCB,

Test samples: Sediment, Human milk, Air extract (toluene)

## Collaboration and synergies with other national/regional initiatives

**1. Part of the POPsEA Project since 2004**

- Cooperative air monitoring in Terelj area were done in 2006, 2007, 2013 and 2023.
- Regular participation for Workshop on Environmental Monitoring of Persistent Organic Pollutants (POPs) in East Asian Countries.
- ICCT POPs laboratory expressed the willingness to join the Core laboratories programme
- Organized Technical Seminar on Persistent Organic Pollutants Monitoring & Training of POPs sampling, Sep2022 (Dr. Takuya Shiozaki)

**2. Collaboration with National Institute of Environmental Research, Ministry of Environment, Republic of Korea**

Regular Participation for Analysis Training of Persistent Organic Pollutants (POPs) for East Asian Countries

# Consideration for Sustainability and Future Monitoring of POPs in Mongolia

- Strengthen national POPs laboratory capacity
  - Continued training for laboratory staff
  - Investment in modern analytical instrumentation and QA/QC system
- Initiate monitoring of priority matrices at the national laboratory
  - Focus on food, breast milk, air and soil samples
  - Need for method development, validation and capacity building
- Implement a national POPs monitoring plan
  - Target legacy POPs (e.g., lindane, HCH, DDT, indicator PCB)
  - Include emerging POPs, such as PFOA and PFOS
- Continue long-term air monitoring
  - Sustain and expand the POPsEA project framework to ensure consistent data collection and regional comparibility
- Continue POPs monitoring through the GCMP project to support long-term data collection and policy development
- Strengthen and expand research collaboration