STOCKHOLM CONVENTION

SUCCESS STORY #7

GLOBAL MONITORING PLAN DEMONSTRATES INTERNATIONAL PREVALENCE OF PERSISTENT ORGANIC POLLUTANTS

Consistent and easily accessible data allows for better planning to eliminate and restrict POPs

The Stockholm Convention on Persistent Organic Pollutants (POPs) was adopted in 2001, and entered into force in 2004. The Convention is designed to protect both human health and the environment from POPs chemicals that remain present and harmful for long periods. POPs can lead to serious health effects including certain cancers, birth defects, dysfunctional immune and reproductive systems, greater susceptibility to disease and damage to the central and peripheral nervous systems.

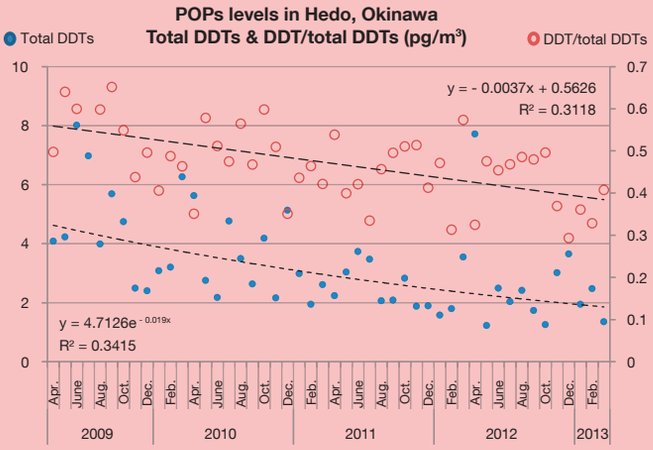
No matter how committed, no single government acting alone can eradicate the impact of POPs. By their very nature, POPs travel easily, last a long time and are highly hazardous. That's why concerted action across borders needs to be undertaken to successfully combat this scourge and why the Stockholm Convention global monitoring plan (GMP) was established, building on existing monitoring activities and programmes. Prior to the establishment of the GMP, POPs monitoring was inconsistent, with gaps across the world's landscape. These gaps have now been filled and a fully formed global picture has been allowed to emerge.

At its simplest, the GMP monitors the levels of POPs and their changes over time, as well as the global movement of these substances, to ascertain the impact of the Convention. It is a highly technical operation, and requires the collection of detailed data from all the continents. The GMP integrates data from national, regional and global programmes, making them all available to the public at large. The data is free for anyone and everyone to access through the GMP data warehouse.

The beauty and importance of the GMP data warehouse is that global data is now widely available in a harmonized, comparable, consistent and coherent format. It can be accessed and presented very easily, often in the form of a map.

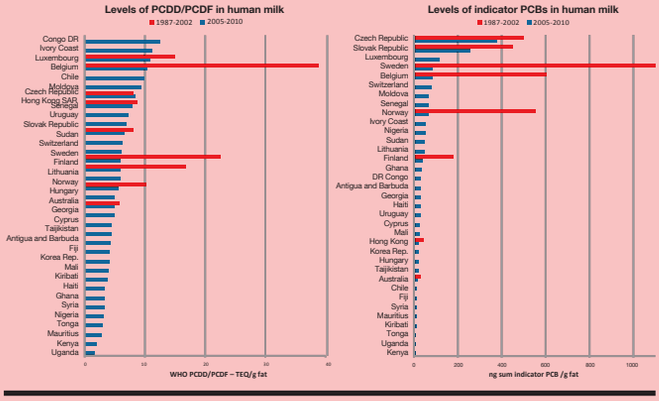
The success of the programme lies in its ability to demonstrate how concentrations of POPs evolve over time at a chosen scale (national, regional, global). It is vital therefore to have comparability of data built into the design of the project. Equally important is to determine the reasons for the changes detected in the presence of POPs. As an example, at Cape Hedo (Okinawa Island), a background site in Japan, a clear decreasing trend of DDT was observed (figure below). This was shown to reflect a possible decrease of DDT to the sampling region during this assessment period and confirms that the measures taken were successful in reducing exposure to this chemical in the region.

Figure: *Changes in monthly total DDT levels in air and the ratios between DDT and total DDTs in Hedo, Okinawa. Total DDTs: sum of six isomers, i.e., p,p'- and o,p'-DDTs, DDEs and DDDs. DDT: sum of p,p'-DDT and o,p'-DDT. Source: Global monitoring report, 2017.*



Another example is the human breast milk data from the last decade suggesting that the levels of PCDD/PCDF have fallen steadily from their earlier high levels. The higher levels observed before 2000 in a number of industrialized countries have been successfully mitigated. This demonstrates the effectiveness of measures implemented to reduce environmental releases (figure below).

Figure: *Levels of PCDD/PCDF (Sum 17 PCDD/PCDF) and indicator PCB (Sum 6 PCB) in human milk: survey results in 2005-2010 and comparison with 1980s levels. Source: Global monitoring report, 2017.*



There are some other more striking overall results, results that in some cases were wholly unexpected. Firstly, the process has been able to detect trends in every single region across the globe, which makes it even more successful. But even more importantly, the GMP has demonstrated that concentrations of POPs are often higher than expected in some regions.

It has also uncovered very specific trends, and without the data secured through the GMP, it is highly unlikely that such trends would have been established and globally shared through the GMP data warehouse. For instance, as a major dispersal route for POPs is through the air, POPs have been discovered in places that would not previously have been considered, such as the Arctic. It has also been discovered that there is an extremely high incidence of POPs in human breast milk in parts of Africa, as some mothers regularly eat clay. Studies have shown that oral ingestion of clay during pregnancy contributed to these high levels in human milk in such regions. There is also a significant prevalence of polybrominated diphenyl ethers (PBDEs), compounds that are used as flame retardant, found in remote islands, which points to imported goods as the source. High levels of PBDEs would not be expected to be associated with such locations, and is another telling example of the sheer geographical spread that POPs have.

The GMP data therefore proves that POPs are a significant challenge to our planet, but by no means one that cannot be successfully tackled. By working together across borders, governments and others demonstrate the importance and effectiveness of the Stockholm Convention, and why we must continue in that quest together.

The worldwide implementation of the GMP is made possible thanks to the generous contributions to the Stockholm Convention Voluntary Trust Fund by the Governments of Japan, Norway, Sweden, and through the European Union's Global Public Goods and Challenges Programme. The contribution of projects to support the monitoring of POPs, funded through the Global Environment Facility and the Strategic Approach to International Chemicals Management, is further greatly acknowledged. Monitoring activities and data collection and analysis, are implemented in the five UN regions in cooperation with strategic partners and the involvement of Regional Organization Groups and the Global Coordination Group.

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