

CZECH REPUBLIC: FROM DIRTY DOZEN TO THE DECISION-MAKING DATABASE

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Introduction

Could experience gathered in the management of persistent organic pollutants be a base for a broader decision-making on a chemicals' regime at national level? Requirements on the proposal of the Czech strategy to implement the Stockholm Convention also comprised criteria of maximum effectiveness and consideration of the possible future development of the Convention.

Both articles 7 and 16 of the Stockholm Convention, the relevant decisions on National Implementation Plans (NIP) and those pertaining to Article 16 regarding effectiveness evaluation and the subsequent development of the Global Monitoring Plan (including the selection of matrices), could be considered a necessary base for creating the global capacity to assess whether the Stockholm Convention objectives are being met.

When our experts looked into national challenges resulting from the first national inventory on persistent organic pollutants (POPs) performed in 2003 and translated them into the first NIP finalized in 2005, it became evident that POPs issue cannot be separated from the broader context of the sound chemicals management and the Strategic Approach to the International Chemicals Management (SAICM) goals.

Therefore, decision-makers were presented with several tasks. First, to establish a national coordination mechanism that could bring to one table all relevant stakeholders, not only to pursue the progress but also design it in such a way that it could gradually and swiftly be adjusted in relation to the findings. The second task was to translate NIP priority issues into actions and the third, to fill the identified data gaps.

Establishing a national coordination mechanism

The national coordination mechanism for POPs was derived from the experience with the work of the interministerial committee established to prepare the first national POPs inventory, comprising players from ministries, industry and civil society. The new coordinating body –the National POPs Council, which is an advisory board to the Minister of the environment- comprises representatives of ministries (environment, health, agriculture, industry and trade, transport, defence, education, finance and foreign affairs), as well as experts on waste management, chemicals, site remediation and scientists and members of national bodies observing the compliance with the legislation. The Council meets twice a year at a minimum to observe the implementation of the

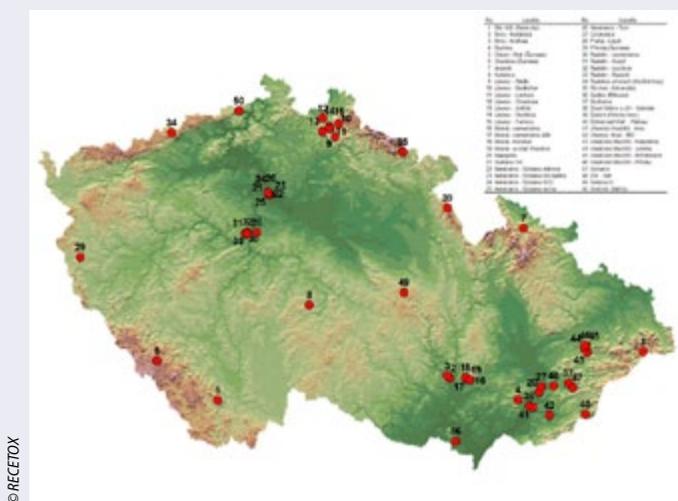
Stockholm Convention nationally and adjusts the immediate priorities of work. To provide an additional scientific platform performing science-related tasks identified in the National Implementation Plan, a National Centre for persistent organic pollutants was established in 2005.

Translating data into action

The Council has adopted the National POPs Monitoring Strategy in early 2007 to bridge data gaps. The actions in the Strategy study background sites as well as significant contamination sources to meet requirements not only of the Stockholm Convention but also other instruments. Moreover, the Strategy combines activities to achieve the highest possible level of effectiveness in relation to the number of samples, analyses, the long-term sustainability of the monitoring programme and data generation, including their use, for a multiplicity of instruments.

Filling the data gaps

The Ministry of the Environment (MoE) prepared three five-year projects in 2007, targeted at research on the fate and transport of POPs in ambient air. The first project addressed the sources of POPs and their distribution between the gas and particulate phase of air, while the second applied the passive samplers to assess the geographical distribution and seasonal variability of atmospheric concentrations at background as well as impacted sites. Selection of the sampling sites was based on the national inventory results as well as requests from the stakeholders. Involvement of local and regional partners (both from the regulatory and the industrial sphere) interested in results of the study was important added value of both projects. The sampling site network established in the framework of these studies became the national air-monitoring



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Overview of the ambient air monitoring stations operating in MONET in the Czech Republic between 2005 and 2011

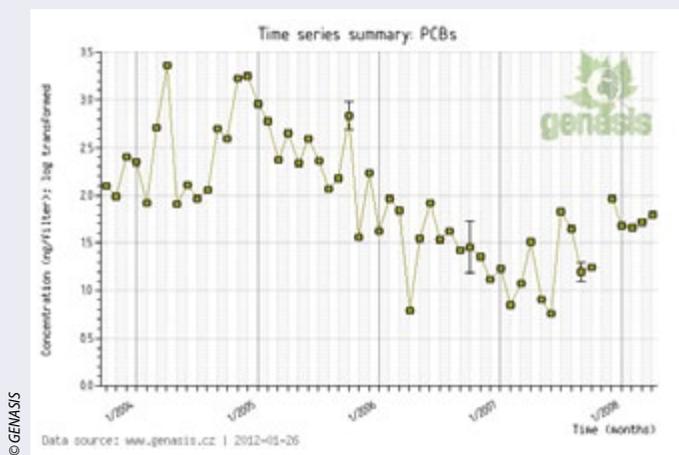
network (MONET=MONitoring NETwork), delivering data on spatial and temporal variability of the POPs contamination. The number of sites fluctuated between 35 and 55, including 15 background locations over the last five years.

The third project of the MoE aims at historically contaminated sites to confirm and quantify as precisely as possible the amount of POPs found on these sites and assess possible risks associated with these sites. This project is still ongoing but the 2010 progress report revealed and confirmed that a total of 1010 unique sites contain either POPs or polyaromatic hydrocarbons. At present these sites are being prioritized and remediation measures, monitoring plans or other activities will be prepared or performed on priority locations as soon as practicable. For some large localities, the work would continue at least until 2015.

The fourth route for filling the identified data gaps was the yearly gathering of existing national data generated in the framework of scientific projects and monitoring programmes executed by various ministries and environmental and health research institutions. Finally, the national information database GENASIS (Global ENvironmental ASsessment Information System) to hold national data on POPs (i.e. from MONET) and their yearly updates was developed to visualise the data and analyse it to ease the subsequent decision-making and national prioritising.

Outcomes

A major achievement of the national MONET monitoring network is the involvement of stakeholders (including from a financial point of view). While often being very reluctant in the beginning, many industrial partners agreed to participate in the screening studies. When they understood



Time series of PCBs concentrations in ambient air from Košice station (MONET), Czech Republic, between 2003 and 2008

how powerful and beneficial these data could be for their own decision-making, when interpreted properly, their perceptions changed and they became donors supporting the MONET implementation at later stages. The same behavioural pattern was observed when cooperating with the local and regional authorities. Nevertheless, it took us some time before we understood that data and information collected from the national monitoring network can be very efficiently translated to regional and national policies and strategies. The key step was the development and in particular use of the novel features of GENASIS information system such as interpretation tools and visualisation of data from multiple sources at a broader national level.

Subsequent testing of GENASIS at the international level in 2011 proved that it fully respects the requirements of the Global Monitoring Plan and could be a suitable instrument to accommodate large data sets of diverse data from multiple sources and potentially serve at the global level.

Lessons learned

The development of an effective national coordination scheme allowing stakeholders to become partners proved to be a successful way forward in analysing environmental problems and finding effective solutions at the national level. It must be emphasised that the involvement of scientists was crucial to provide a sound foundation for decision-making processes in the area of environmental protection and remediation.

The national experience related to the MONET monitoring networks was also successfully tested and disseminated abroad, namely in the African and CEE regions, and results of these studies provided data for the Global Monitoring Plan and the first effectiveness evaluation report prepared for the Stockholm Convention's 4th Conference of the Parties in 2009.

The GENASIS database is currently a nationally recognized information system in the environment: it not only provides data on environmental concentrations but also information on the properties, behaviour and hazards related to these compounds, as well as information enabling to build models supporting decision-making processes at various levels. We are fully convinced that the model used in GENASIS is viable beyond the management of POPs and we are currently extending the analytical instruments to cover other toxic chemicals and their impact on the environment.