BUILDING EXPERTISE FOR POPS THROUGH COOPERATION - THE CZECH EXPERIENCE

By Dr. Jana Klánová, Research Centre for Toxic Compounds in the Environment (RECETOX), Masaryk University and Stockholm Convention Regional Centre for capacity-building and transfer of technology in Central and Eastern Europe, Brno, Czech Republic

And Dr. Kateřina Šebková, Ministry of the Environment, Czech Republic

The week-long International Summer School of Environmental Chemistry and Ecotoxicology organized by the Stockholm Convention Regional Centre RECETOX in Brno helps build global capacities for the effectiveness evaluation of the Stockholm Convention and for the Global Monitoring Plan. Almost 290 participants from 74 countries have greatly benefited from lectures, practical training and case studies over the last seven years, and many of them long to come back.

To ensure effective implementation of the sound chemical management including the Stockholm, Basel and Rotterdam Conventions at local, regional and global levels, Parties have to develop and maintain technical abilities enabling them an efficient participation in these agreements. These entail capacities to identify new sources and old burdens of hazardous chemicals and to support sound management of chemicals and wastes, in addition to introducing new cleaner technologies. Experience shows that such capacities are currently lacking in many countries. Endeavours to boost efficient capacity-building became one of the top priorities in support of the Stockholm Convention implementation, triggering the worldwide establishment of regional centres for capacity-building and technology transfer.

The Research Centre for Toxic Compounds in the Environment (RECETOX) of the Science Faculty of the Masaryk University in Brno, Czech Republic, has been involved in the POPs-related activities since the 1980s. Due to availability of extensive research capacities and expertise, RECETOX acted as the implementing agency responsible for the preparation of the national POPs inventory, as well as of the National Implementation Plan (NIP) for the Stockholm Convention in the Czech Republic. This expertise covers, among others, development of sampling and analytical techniques and air monitoring programmes, assessment of toxicity and the associated human and ecotoxicological risks, data handling and analysis, as well as development of environmental databases. The NIP development comprised several years of literature and report screening, field testing, case studies and a lot of research projects. However, this demanding job delivered fruits by creating substantial capacity and expertise.

While presenting the Czech experience with the successful national endeavours related to POPs during several regional and global workshops since the entry into force of the Stockholm Convention, many voices were asking for assistance through training and exchange of experience and knowledge. This inspired RECETOX to organize the first summer school on environmental chemistry and ecotoxicology in 2005. This summer school was a sheer success, hence a tradition has been established and the summer school is organized annually ever since.

Nowadays, the week-long course offers participants from around the globe intensive theoretical and practical training on sampling and analytical techniques related to POPs, assessment of toxicity including human and ecotoxicological risks, data handling and analysis, as well as environmental databases.

The Summer School programme runs in two classes. The first one provides an insight into the state-of-the-art environmental chemistry and exotoxicology, including aspects of analytical and process chemistry, long-range transport, fate and effects, and provides a hands-on experience with the chemical and toxicological tests designed to answer specific environmental problems. The second class focuses on building technical capacity for the analysis of POPs in core matrices in support of the Global Monitoring Plan, and offers intensive laboratory training, including maintenance of instrumentation and aspects of quality assurance/quality control. A solid theoretical foundation of the relevant issues is provided at the same time. In addition, the study plans of both classes include a field trip to the Košetice observatory, the background monitoring station of the European Monitoring and Evaluation Programme.

The introductory lectures and practical courses covering basics of environmental chemistry, ecotoxicology and risk analysis are provided by the RECETOX experts. In addition, five to ten leading international scientists and experts are invited to cover specific topics every year. The first RECETOX summer school (2005) was focused on environmental modelling, followed by the summer schools on photochemical and

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Summer school of 2011: class on state-of-the art environmental chemistry

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Summer school of 2011: laboratory training

biological degradation (2006), environmental policies and chemical agreements (2007), integrated monitoring/modelling approaches (2008), exchange processes between environmental compartments (2009), bioavailability and bioaccessibility, passive sampling techniques for air, water, sediment and soil (2010), and finally contamination of the Arctic ecosystems, transport, fate and effects of pollutants in the cold environments (2011). Similarly, the focus of the practical analytical training shifted over the years from the polychlorinated biphenyls (PCBs) and organochlorine pesticides (OCPs) to polychlorinated dioxins and furans (PCDDs/Fs) followed by newly listed POPs –polybrominated diphenylethers (PBDEs) or perfluorinated compounds.

The Secretariat of the Stockholm Convention soon recognized the potential of these summer schools as an efficient capacity-building tool, supporting the worldwide implementation of the Global Monitoring Plan (GMP). In follow-up to the requests by Parties for assistance related to the GMP implementation, the Secretariat started cooperating with RECETOX and has been co-organizing the summer school since 2007.

A total number of 288 students (43, 31, 42, 27, 31, 58, and 56 respectively, in the individual years) from 74 countries have benefited from the international summer school programme over the last seven years. Despite the fact that RECETOX accepts nowadays twice as many participants as at the beginning, a number of applicants have to be turned down due to capacity reasons. Central and Eastern European countries and countries of former Soviet Union, such as Kazakhstan, Armenia, Serbia and Romania were among the Parties sending the most students to the training (respectively: 20, 17, 23 and 11). Altogether, the Stockholm Convention Secretariat supported 53 participants, while other students were supported by the Czech Ministry of Environment, through the NATO projects, through the EU framework programmes, and last but not least, by RECETOX itself.

The excited comments and positive evaluations by the summer school participants confirm that the RECETOX Regional Centre hit the target by answering some urgent needs and offering a course building the much needed global capacity for environmental monitoring and assessment of hazardous chemicals. Here are a few examples:

"I am very grateful for your two consecutive trainings; first in 2007 on POP pesticides and PCBs, and this time on dioxins (2010). I pray that you will help us to build some scientific capacity to provide data that is so urgent!" expressed Vincent Madadi, a regional organization group coordinator for the POPs Global Monitoring Plan from Nairobi.

"The most valuable from my point of view were the practical lectures", said Aliya Aubakirova (2011) from Kazakhstan. *"It would be great to establish a long-term programme that would give a chance to more students to experience this."*

Similar long-term programmes enhance engagement of the scientists as well as policy-makers in the implementation of the international conventions and trigger positive changes in chemical management at the local, regional and global levels.

How to further build on this positive example? Even if a number of regional centres have been established until now, it cannot be expected that each of them will be able to provide a full range of services. We believe that the Regional Centres should focus on areas where they have in-depth expertise and knowledge. Global collaboration should be encouraged and supported between those whose capacity needs development, and those who are able to assist with the specific needs. Furthermore, engagement of universities and research institutions with relevant facilities and a vast experience in the area of toxic compounds seems to be a logical and effective step towards efficient capacity-building. The Czech experience so far proves it right.