Layman's Report

Baltic Actions for Reduction of Pollution of the Baltic Sea from Priority Hazardous Substances

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from Priority Hazardous Substances
Project LIFE07 ENV/EE/000122 – BaltActHaz

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MINISTRY OF ENVIRONMENTAL PROTECTION AND REGIONAL DEVELOPMENT

Introduction

The LIFE+ Project “Baltic Actions for the reduction of Pollution of the Baltic Sea from Priority Hazardous Substances” was implemented by the NGO Baltic Environmental Forum and 17 partners from Estonia, Latvia and Lithuania from 1 January 2009 to 30 June 2012. It had a financial volume of more than 1.7 million euros and was co-financed by the European Commission’s LIFE+ Programme, the Estonian Environmental Investment Centre, the Estonian Ministry of Social Affairs, the Latvian Ministry of Environmental Protection and Regional Development and the Ministry of Environment of the Republic of Lithuania.

The objective of the project was to contribute to the protection of the Baltic Sea through strengthening the cooperation between different state institutions in the field of hazardous substance management, more efficient enforcement of legislation and the raising of awareness of different stakeholders regarding hazardous substances and the possibilities for reducing pollution.

The main objectives of the project were:

The project activities and results have been widely acknowledged by state authorities in the Baltic states and have been deemed very successful and useful. In this brochure we will present a summary of the project activities as well as the main results. Additional in-depth information is available on the project website. Printed versions of publications can be obtained from the local BEF offices.

- To investigate the occurrence of selected hazardous substances in the water environment of Estonia, Latvia and Lithuania;
- To investigate the potential sources of such hazardous substances;
- To propose possible substance reduction strategies and make proposals for future water monitoring programmes for the national authorities;
- To improve the effectiveness of the environmental permitting system;
- To enhance the quality of chemical management in enterprises – detection, use and substitution;
- To raise awareness and facilitate networking between Baltic stakeholders.

Why do we need to protect the Baltic Sea?

The Baltic Sea is a unique and fragile ecosystem hosting many rare species and habitats of European interest and even of global importance. The Baltic Sea is rather shallow, has a basin with large rivers and due to the limited connection with the ocean is sensitive to pollution. It takes 30 years for the Baltic Sea to replicate its water, while in the case of the North Sea this process takes only 2–3 years.

The catchment area of the Baltic Sea has a population of ca 85 million people and, if we also consider the industries in the region, hazardous substances are emitted into the Baltic Sea through various sources and pathways. Once released into the Baltic Sea, hazardous substances can linger in the marine environment for very long periods and can accumulate in the marine food chain up to levels which are toxic to marine organisms.

Why did we propose the project?

In 2008 the EU enforced new directives which established obligations for the Member States to report on the occurrence of priority substances and priority hazardous substances and their concentrations in the water environment. When preparing the application for the LIFE+ Programme, the project team knew that there was a lack of information on the occurrence of Water Framework Directive (WFD) priority hazardous substances in the Baltic states' surface waters as well as on the primary sources of these hazardous substances. Moreover, screening and source tracking of hazardous substances in the Baltic states' surface and waste waters had not been conducted previously. Neither industrial enterprises nor state authorities know exactly how many hazardous substances are placed on the market in raw materials or in mixtures, how many of these substances are emitted from the industrial processes or products and from where the hazardous substances are released into our waters. This means that no appropriate long-term decisions can be made until there is enough reliable data on the use and discharge of hazardous chemicals.

Furthermore, it was observed that the synergies between different legislations are not fully used to enhance the implementation and enforcement of water legislation. Although the legislation exists, the tools and methodology for identifying hazardous substances relevant for a specific company profile are not developed sufficiently. The quality of current permit applications and the permits themselves must be improved in order to make them an effective tool for the efficient enforcement of the water legislation. Furthermore, it was obvious that the general public of Estonia, Latvia and Lithuania has a limited understanding of the origin and impact of hazardous substances, which is insufficient for demanding serious action from authorities and industries.

What did we do?

In this project we focussed on the hazardous substances listed in the EU Water Framework Directive as priority and priority hazardous substances, HELCOM substances of specific concern to the Baltic Sea and some other pollutants which our team deemed potentially problematic for the Baltic Sea. All of the substances under observation are persistent, toxic, bioaccumulative and, because of these properties, are hazardous to the water environment. The Member States are required to reduce or stop the use of such substances in order to achieve a good quality of the surface waters.

130 different substances from 12 substances groups were investigated (alkylphenols and their ethoxylates, organotin compounds, polybrominated diphenyleters, short and medium chain chlorinated paraffins, phthalates, polyaromatic hydrocarbons, volatile organic compounds, pesticides, heavy metals, perfluorinated substances), many of which have been investigated for the first time in the Baltic states. Samples were taken from the surface waters and their bottom sediments as well as from the effluents and sewage sludge of waste water treatment plants in Estonia and Latvia. Also, in order to investigate the possible sources of the previously mentioned substances in the Baltic Sea, analyses were conducted in Estonia, Latvia and Lithuania of hazardous substances in the waste water produced in different industries, waste water produced in specific types of businesses, such as laundries and car washing facilities, filtrates from landfills, and sewage water from residential areas.

Another activity was related to **hazardous substance mapping at plant level**. Altogether, seven partner enterprises from Estonia, Latvia and Lithuania participated in the activity where the project team helped map the chemicals in use and provided an example of how to fill a chemical substance inventory. Based on the inventories, hazardous substances were identified in the partner enterprises and possible substitution scenarios were worked out in cooperation with experts.

The project also actively involved all stakeholders in the **improvement of environmental permits**. Permitting is one of the main instruments for regulating hazardous substance use and discharge in enterprises. However, this instrument has been used very superficially in all three Baltic states. This has led the project team to encourage the Baltic countries to change their legislations and initiate knowledge and capacity building in state authorities and enterprises.

What did we find out?

The screening of surface waters showed that **hazardous substances are present in the environment** of the three Baltic states. Substances which are hazardous to the aquatic environment and were detected in both surface waters and bottom sediments in the Baltic states include organotin compounds, phthalates, alkylphenols and their etoxylates and polybrominated diphenylethers. However, no violations of environmental quality standards were detected in the case of the majority of investigated substances – permitted limits were exceeded only in some cases.

According to the source tracking of hazardous substances, the industries which are most likely emitting such substances in the Baltic states are metal processing and galvanic industries, industries that produce building materials, wood and pulp industries, and industries that produce chemicals, textiles and plastics. Also, a significant amount of pollution is produced by car wash and laundry effluents, waste water from households and run-offs and leakages from industrial areas and shipyards.

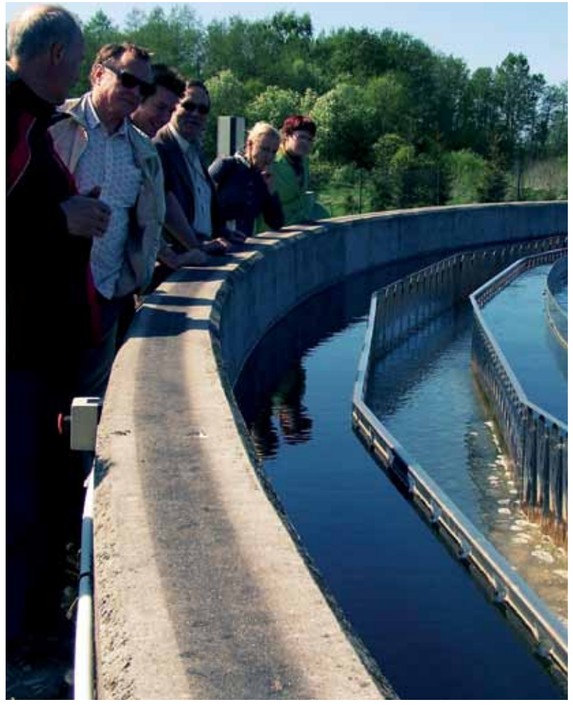
The project identified the **need for a public information campaign** on the use of hazardous substances in products and their impact on human health and the environment in connection with the hazardous substance pollution which is coming from households.

Upon cooperating with partner enterprises the project **identified the need for a chemical substance inventory tool** at the enterprise level as well as the need for more knowledge and training on this topic. On the other hand, the cooperation process allowed us to show that a technical measure like the **substitution** of hazardous substances in processes and products can be achieved **without major investment costs**.

The expert work on investigation of the permitting system, conducted within the framework of the project, has shown that the quality of environmental permits is poor in terms explicit requirements being established for companies to institute good hazardous substance management practices. This is mainly due to the **lack of accurate information about the specific ingredients** of mixtures that are used in enterprises.

The training approach – bringing different stakeholders, such as industries, various ministries, inspectorates and permitting authorities together – has been very successful and has shown that such **informal communication among all these target groups is very much needed and helps initiate dialogue with an eye towards harmonizing the approach** to enhancing the management and control of hazardous substances in enterprise and in environment.

Traditionally policy is formulated based on single policy sectors – **crosscutting and holistic thinking is difficult**. However, the modern European legal frameworks are becoming more complex and more interlinked. This is one of the main problems for our region and our institutions that are staffed by officials who still lack complex information and skills, while also suffering from significant down-sizing and brain drain as result of the recent economic crisis.



What did we propose and achieve?

Proposals for state monitoring programmes and national hazardous substance reduction programmes were prepared in all three Baltic countries. Hazardous substances which were found during the investigations conducted in the course of this project but had not been monitored before were submitted for inclusion in the national monitoring programmes. Furthermore, a proposal was made to carry out an economic assessment of the need for improving the capabilities of national laboratories in order to increase the effectiveness of policy enforcement with regard to such hazardous substances. Enhancing the capabilities of the laboratories is important in order to ensure that the laboratories fulfil the quality requirements necessary for analysing such substances. Proposals were also made to include monitoring of companies emitting waste waters in the joint monitoring system and to revise national legislation regulating the management of waste water treatment sludge in order to avoid repeated emissions of hazardous substances.

Proposals for environmental permitting legislation and guidelines for state authorities and inspectorates were elaborated in the course of the project and presented during various training and information events. Permitting authorities had fruitful discussions on the valid procedures and actions necessary for achieving a positive effect.

An innovative approach aimed at **interlinking all legal acts regulating chemical substance management and discharges** into the water environment gained positive feedback and recognition from different stakeholders. This harmonised approach would contribute to the achievement of environmental quality.

An **IT tool** was developed for industrial enterprises in order to permit easy accounting and the preparation of an inter-sectoral inventory of chemical substances used in each enterprise. The practicality and necessity of the practice of **substitution** was demonstrated and efforts were made to stress the point that it is usually much cheaper to avoid the use of hazardous substances in the production or manufacturing processes than to deal with various requirements regarding the use and discharge of such substances. Several publications for industrial enterprises were produced on the topic of substitution. Hazardous substance substitution activities were proposed and implemented in several companies representing industries such as the production of household chemicals, detergents and cleaning agents, the production of construction chemicals and so forth.

The issue of the presence of hazardous substances in our everyday life was illustrated for the **general public** with a very popular publication "**A million reasons to know about hazardous substances**" which caught the interest and attention of people from kindergarten teachers to ministry officials.

Future prospects

The capacity building and training of industries and competent authorities must continue in the future with assistance from external projects (such as the BaltActHaz project) and institutions like the Baltic Environmental Forum. Since the Baltic states are small, there are no long-term environmental traditions and the layer of human resources is thin. Furthermore, the legislation is changing and since new people are always being hired, these employees need to be informed about the aforementioned issues.

The involvement of municipalities is also important because they are directly engaged in the management of hazardous substances. There is still a knowledge gap among industrial enterprises, authorities and the general public regarding hazardous substance management and the effect of hazardous substances on human health and the environment. This problem coincides with a lack of cooperation between all of the stakeholders involved in matters related to hazardous substances.

There is still lack of cooperation between different institutions regarding a general strategic position on hazardous substance management and the enforcement of that position in the Baltic states.

Project partners:

Lead partner
Baltic Environmental Forum Estonia

Estonia:
OÜ Hendrikson & Ko
Estonian Environmental Research Centre
AS Hanza Tarkon
AS Estko
AS Eskaro

Latvia:
Baltic Environmental Forum Latvia
Latvian Institute of Aquatic Ecology (LIAE)
State Environmental Services (SES)
SIA Tenax
KVADRO, Ltd.

Lithuania:
Baltic Environmental Forum Lithuania
Lithuanian Environmental Protection Agency
Vilnius Regional Environmental Protection Department
Klaipeda Regional Environmental Protection Department
Šiauliai Regional Environmental Protection Department
AB “Siulas”
AB “Vakarų laivų gamykla” (VLG)

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