



SOCOPSE - Source control of priority substances in Europe

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Related website	http://www.socopse.se	



Project description and aims

The overall objective of this project has been to support the implementation of the Water Framework Directive (WFD) by providing guidelines and decision support tools for the management of priority pollutants (PPs).

The following activities have been part of the project:

- conduct a material flow analysis for selected priority pollutants;
- evaluate available and emerging measures and management options for PPs;
- develop a decision support tool for identification and selection of relevant measures on European, national and regional level;
- evaluate potential measures by applying the decision support tool in case studies;
- develop action plans, i.e. river basin management plans, involving key stakeholders in the process (industry, authorities, citizens, NGOs);
- disseminate the results to relevant stakeholders and interact with industrial organisations, research networks, authorities and NGOs throughout the project.

The project was led by the Swedish Environmental Research Institute (IVL). Eleven partners from seven European countries were involved in the development of a common approach and a Decision Support System (DSS), with associated databases and compiled information, to support the implementation of the WFD. The project has included a number of activities focusing on material flow analyses, emissions and emission control options which have provided input to the DSS and a series of independent reports. The DSS and the associated guidelines have been tested and evaluated in five case studies in different regions of Europe. Cooperation with the industrial sector, the different authorities and other stakeholders has ensured the relevance of basic data collection, as well as the applicability, acceptance and relevance of the results from this project.

Decision support system for management of priority substances in river basin management plans

Within the SOCOPSE project a decision support system (DSS) has been developed which can help water authorities to identify current and future environmental problems, to assess the effectiveness of various measures, and to select the most appropriate control options. These options include for example process-oriented options, end-of-pipe techniques, product substitution and other options, such as e.g. Community level measures. The plans for priority substances are part of the river basin management plans. Local water authorities have tested the DSS in practice in five river basin cases in Europe.

Case studies focusing on management of priority substances in European river basins

Based on joint methods and reporting routines, the Decision Support System (DSS) developed in SOCOPSE has been evaluated in five case studies located in different geographical regions. The experiences from these case studies will also be used to integrate the results on a European scale. The five case studies, which represent different geographical regions of Europe as well as different scales, are:

- North: Baltic Sea catchment, Vantaa River
- North: Baltic Sea catchment, Kłodnica River
- West: Meuse River
- Central: Danube catchment
- South: Ter/Llobregat catchments

The five case study regions have different characteristics in terms of pollution sources and degree of contamination by priority substances. All priority substances are not relevant in all cases, due to regional differences in use and emissions. The different case studies focus on priority substances selected for the specific region or river basins. The priority substances included in this project are given in the table below.

Name	Major uses or emission sources
Polycyclic aromatic hydrocarbons, PAH, including Anthracene	Incomplete combustion
Brominated diphenyl ethers, PBDE	Flame retardant
Mercury, Hg	Chlor-alkali industry, coal combustion
Cadmium, Cd	Numerous
Tributyltin, TBT	Antifoulant, preservative, stabiliser in plastics
Nonylphenol	Industrial chemical
Hexachlorobenzene, HCB	Unintended formation, fungicide
Isoproturon	Pesticide
Atrazine	Pesticide
Di(2-ethylhexyl)-phtalate, DEHP	Plasticiser

Material Flow Analysis of priority substances

The objectives for using material flow analysis (MFA) are related to the early recognition of potentially harmful or beneficial accumulations and depletions in stocks, as well as prediction of future environmental loadings. In the SOCOPSE project, MFA is used to describe current European sources, fluxes, and endpoints in the environment for the selected priority substances. This information is used to identify important source categories and for setting priorities for emission control measures. The MFA can also be updated and used to integrate environmental and economic decision-making tools by assessing the effectiveness and impacts of various emission reduction measures.

Emission reduction strategy for priority substances in European waters

The general aim of SOCOPSE is to provide support to the implementation of the Water Framework Directive (WFD) including measures to abate priority substances. Water managers are required to establish a multi-pollutant emission reduction strategy. There is, however, often a significant lack of data on emission control options. A methodology to build an Emission Reduction Strategy (ERS) is suggested as a way to handle the limited data availability. The developed tools can be applied to steps 4, 5 and 6 in the SOCOPSE Decision Support System. These tools can also be used independently by water agencies to develop emission abatement strategies.

Participants

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Related publications

For project conclusions, reports, DSS etc. see <http://www.socopse.se>