

## Background

High concentrations of environmental pollutants in the environment have been causing concern for many years, and they have been studied in terms of environmental and economic impacts, often using a cost-benefit framework with none or limited assessment of macroeconomic issues. In 2004, the European Union has adopted the Environment and Health Action Plan<sup>1</sup> (EHAP) that provides further incentive towards including additional relevant health endpoints with high public health impact into the analyses.

The project builds upon a large number of recent or ongoing research projects, and builds upon methodologies such as the ExternE, and is expected to further contribute to the development of European policies on emissions and clean air.

## Objectives

The overall objective of the project is to provide a full-chain analysis (including macroeconomic impacts) related to impact of health protection measures related to priority pollutants as identified by the EHAP, in order to support the development of cost effective policy measures against pollution related diseases and their wider impacts. For individual compounds specifically mentioned in the Environment and Health Strategy, a body of information generated during the past decade, is already available

to varying degrees. Macroeconomic models have not been extensively used, as most available economic assessments have a cost-benefit analysis as their main objective.

The project aims thus on extending existing methodologies and models to provide an impact-pathway-based model for evaluation of the role of public health externalities on society, made operational for the selected compounds.

Specifically, the objectives are related to the following pollutants: ozone, heavy metals (mercury, cadmium, arsenic, nickel, lead), polychlorinated biphenyls (PCBs), dioxins and indoor air pollution. The project will:

- Identify emission reduction measures and their costs for PCBs, Dioxins and indoor air pollution, and review such information for ozone and heavy metals, particularly through the ESPREME project progress for heavy metals.
- Evaluate benefits of such measures in terms of reduction of health impacts, including possible ancillary benefits, based on data derived from current and previous relevant projects (e.g. ESPREME, MERLIN, INFOS)
- Evaluate uncertainties related to single health estimates and provide guidance on how to deal with these uncertainties
- Review existing non-health benefit aspects of emission reductions, identify missing elements and seek to fill in the gaps, such as providing additional valuation estimates

- Based on the cost benefit analysis approach used for the CAFE programme and on its review, develop an integrating methodology that would allow a split between economic and social benefits both direct and indirect
- Construct and evaluate a number of emission abatement scenarios using the integrated system for cost benefit analysis (all scenarios based on RAINS/CAFE and ESPEREME)
- Assess the macro-economic impacts of the constructed scenarios for key economic variables broken down by economic sector.

## Topical Work Packages

### WP1 Emission scenarios and their costs

Will identify emission reduction measures and their costs for PCBs, Dioxins and indoor air pollution, and review such information for ozone and heavy metals.

### WP2 Health benefits and benefit estimates

This WP will review current state-of-the-art in epidemiological research and extend the knowledge in health benefit assessment due to change in heavy metals, ozone, indoor pollution, dioxins, and PCBs, and provide monetary valuation of selected endpoints.

### WP3 Non-health benefits

This WP will provide benefit information and benefit valuation for selected non-health benefits Objectives/Main aims:

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<sup>1</sup> COMM (2004)416

## WP4 Methodology for integrated system for CBA

This WP will establish, adapt, validate and implement methodology to assess costs and benefits of reducing impacts due to exposure of ozone, heavy metals and PCB/dioxins.

## WP5 Integrated system implementation

This WP will carry out cost benefit analyses and assess results for different emission reduction scenarios, for the base year 2000 and for 2010 and 2020, providing for sensitivity analyses.

## WP6 Macroeconomic modelling

This WP will use of the E3ME macro-sectoral model of Member States to run scenarios to assess the economic impacts of European-level abatement strategies, using input data consistent with the previous WPs.

## Deliverables

Main deliverables from the project will include evaluation of a number of emission scenarios using a cost-benefit analysis and incorporating macro-economic modelling. A coherent set of methodologies covering the indicated priority pollutants will be developed and applied in this evolution.

## The DROPS project team

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Please visit the DROPS project web site at <http://www.nilu.no/DROPS> or contact the coordinator

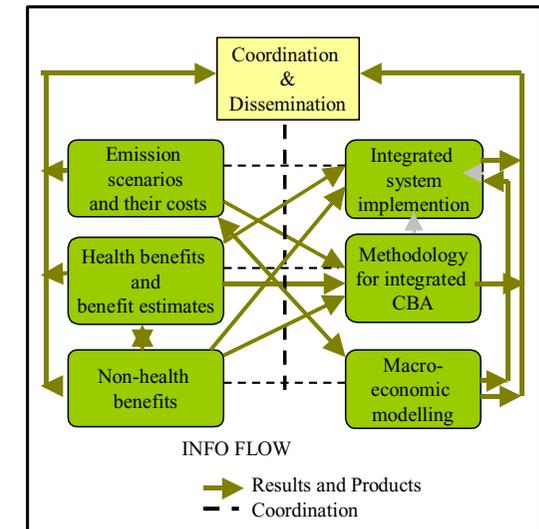
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# DROPS

Development of Macro and Sectoral Economic Models Aiming to Evaluate the **Role of Public Health Externalities on Society**



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