

Research for a more sustainable waste management

Towards Sustainable Waste Management is an interdisciplinary research programme dedicated to identifying policy instruments and strategic decisions that contribute to the development of a more sustainable waste management. The programme, funded by the Swedish Environmental Protection Agency, is scheduled for six years: 2006-2012.

Towards Sustainable Waste Management

- aims to find more sustainable solutions both for prevention and treatment of waste
- evaluates existing as well as potential policy instruments.
- develops future scenarios illustrating how a more sustainable waste management can be designed.
- investigates systems for source separation aiming to develop knowledge for adapting the systems to user needs.
- investigates recycling processes for improving the environmental performance.
- includes 10 research projects

Policy instruments and strategic decisions

The research in Towards Sustainable Waste Management is carried out in an interdisciplinary network of Swedish researchers. We survey existing informative, economic, legal and physical policy instruments. We also develop and suggest new policy instruments and aim at finding the combinations of policy instruments that are more efficient in contributing to a more sustainable waste management, in terms of economic, environmental, cultural and social sustainability.

A broad scope

Many different aspects of waste management - environmental, economic, cultural and social - are studied in Towards Sustainable Waste Management. Seeking the broadest scope possible, economists, ethnologists, environmental psychologists, systems analysts and futurologists carry out the research in close co-operation in ten research projects.

Decision support

In the final step of the programme, knowledge and results from the all projects will be integrated into a number of scenarios which illustrates how a more sustainable waste management can be designed. In this way, the programme will provide useful input to actual decision-making and strategy development in waste management and other related fields, in Sweden as well as internationally.





Ten research projects

The ten research projects in Towards Sustainable Waste Management are based on close co-operation and exchange of knowledge and results. Each project adds important information and knowledge to the programme.



1. Policy instrument formulation The project formulates policy instruments aiming towards a more sustainable waste management. After a first screening, interesting instruments will be chosen for further evaluation in projects 2-8. The results from these evaluations will be summarized in project 1. Interviews, workshops and literature studies form the basis of the project. Project manager: Göran Finnveden, Department of Environmental Strategies Research - fms, Royal Institute of Technology, Stockholm



2. Economic modelling for assessment of policy instruments The goal is to evaluate the economic effects as well as effects on waste management of policy instruments suggested for waste treatment. Two models, one of the Swedish economy, EMEC, and one of national waste management, NatWaste, will be soft linked in order to generate consistent descriptions of the interaction between the waste management system and the rest of the Swedish economy. Project manager: Göran Östblom, National Institute of Economic Research, Stockholm

6. Sorting things out: considering cultural categories of waste The aim of the project is to investigate how efficient source-separation systems can be designed from a user perspective. To be efficient, the systems which are often created by waste management experts, should not contradict widespread and culturally grounded values and habits of daily life. If a cognitive gap between laypeople and experts exists, we want to find out how such a gap can be described and exceeded. Project manager: Lynn Åkesson, Department of European Ethnology, Lund University, Lund

7. Future waste quantities In this project, we investigate how the quantity of waste develops in the future, and how the trend can be affected by policy measures aiming at waste prevention. For this purpose, we develop the model of the Swedish economy, EMEC, to include a description of how waste quantities depend on the production and consumption in society. Project manager: Tomas Ekvall, IVL Swedish Environmental Research Institute, Göteborg

Participants

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3. Environmental assessment of policy instruments The overall aim of the project is to contribute to sustainable waste management by assessing proposed waste policy instruments from a life cycle perspective. Existing and new data for waste flows and processes will be compiled and made available at the programme web site. These data will be implemented in a generic LCA tool for assessment of proposed waste policy instruments. Project manager: Anna Björklund, Department of Environmental Strategies Research - fms, Royal Institute of Technology, Stockholm

4. Institutional aspects and the waste-incineration tax In this project, we investigate how a tax on incineration of waste with fossil origin affects waste treatment. We also investigate how institutional aspects affect the consequences of such a tax. To this analysis, we add a discussion on how to transfer the signal of the tax to individuals and organisations that can source separate the material with fossil origin. Project manager: Tomas Ekvall, IVL Swedish Environmental Research Institute, Göteborg

5. Evaluating design and impact of environmental information In this project, we investigate how environmental information can be developed and designed in order to increase people's readiness to take part in source separation schemes. How can information be designed to target the vast variation among individuals in different surroundings? Quantitative methods of environmental psychology are applied. Project manager: Chris von Borgstede, Department of Psychology, Gothenburg University, Göteborg

8. Markets for secondary materials The objective of this project is to analyse supply and demand for secondary materials and to assess the effectiveness of policy instruments aiming at increased material recovery in society. For many secondary materials, there exist already established markets (e.g. wastepaper, recycled aluminium), and the impacts and the effectiveness of policy instruments will depend on the functioning of these markets. Project manager: Patrik Söderholm, Economics Unit, Luleå University of Technology, Luleå

9. Environmentally improved recycling We investigate what significant, environmental improvements can be made in recycling processes. Are there any obstacles to these improvements? What are the possible actions and decisions that might remove these obstacles? More efficient recycling processes can reinforce the environmental arguments for material recycling. The questions are analysed from life-cycle perspective in close cooperation with the recycling industry. Project manager: Elin Eriksson, IVL Swedish Environmental Research Institute, Göteborg

10. Future-oriented synthesis The results from the other projects in the programme will be synthesised and presented in strategic scenarios, in which the effectiveness of policy instruments will be highlighted. In this way, the results will provide useful input to actual decision-making and strategy development which can lead to a more sustainable waste management. Project manager: Göran Finnveden, Department of Environmental Strategies Research - fms, Royal Institute of Technology, Stockholm