

**SERI Annual reports**

# Annual report 2003

Vienna, 23.3.2004

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The Sustainable Europe Research Institute (SERI) is a Pan-European think tank aiming to explore sustainable development options for European societies. It was set up in September 1999.

SERI's research agenda and methodology is based on previous work carried out by Friends of the Earth and the Wuppertal Institute under the auspices of Friends of the Earth's Sustainable Europe Campaign. The Institute aims to develop the concept of environmental space and show ways to substantially reduce the material through-put of modern industrial societies.

Sustainability strategies must be integrated or they are not sustainable.

SERI aims therefore at a comprehensive view at sustainability both empirically and in its policy recommendations.

Comprehensive means:

- SERI integrates the ecological objective to reduce environmental space with elaborated economic, social and institutional sustainability strategies.
- SERI develops strategies on a macro, meso, micro and meta level of economies/societies.
- SERI looks at the impact of activities and policies in Europe on other parts of the world
- SERI's work is based on methodological pluralism.

On the other hand we are far from working on everything important in the field of sustainable development. While integrating ecological, social, economic and institutional dimensions, SERI focuses the notion of environmental space (in terms of resources, energy and land-use) and the measurability of social and economic dimensions of SD. Indicator-based policies are therefore important for our recommendations.

We are a virtual internet based institute. From our pool of staff and members comprising a broad spectrum of qualifications we can select appropriate teams for each project.

The research carried out by members of SERI supports the dialogue within European civil society. It specifically aims to further develop the exchange of ideas between environmental citizens organisations, governments, trade unions and industry.

SERI's offices are in Vienna. The affiliated academics and researchers live throughout Europe. The policy dialogue SERI aims to engender is supported by this webpage, conferences, meetings as well as publications.

The Sustainable Europe Research Institute

- investigates environmental, economic, social and institutional conditions for sustainable development
- develops and disseminates information on through-put limits and makes possible steps towards sustainability apparent
- develops scientifically accurate and practical policy solutions which allow sustainable development to become a reality in Europe (and beyond).

SERI addresses all relevant agents: businesses, households, civil society agents, administrators and politicians.

# Foreword

The year 2003 was another busy and successful year for SERI. A lot of new projects started, others were finished and many continued. With this annual report we want to give you an overview of our work. This comprises not only our research activities in the mentioned projects but also resulted in various publications, presentations at conferences or workshops and other outcomes.

In this report we will summarise all these activities of the members of the society "Verein zur Förderung eines Sustainable Europe Research Institute" during the past year and hope that you will enjoy the reading and find interesting news and inspirations for your own work. If you have questions or want to know more feel free to contact us or visit our webpage at [www.seri.at](http://www.seri.at).

Along with our activities the size of our group in the Viennese office increased. Our old office rooms in the Schwarzspanierstraße, which hosted us since 1999, became too small and in January 2004 we moved into our new office rooms in the Garnisongasse. If you are interested in our work and happen to be in Vienna, give us a call and visit us in our new office.



Dr. Friedrich Hinterberger

President, Verein zur Förderung eines Sustainable Europe Research Institute

Vienna, 23.3.2004

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# Projects

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## New projects

### **Modelling opportunities and limits for restructuring Europe towards sustainability (MOSUS)**

MOSUS applies a global ecological-economic simulation model to quantify the interrelations between socio-economic driving forces and the state of the environment and to evaluate the economic and social impacts of key environmental policy measures in the EU. MOSUS will formulate EU development scenarios and evaluate the economic and social impacts of key environmental policy measures in order to present quantified policy recommendations for responding to environmental challenges and changes.

The four key targets of MOSUS are:

1. To assess and quantify the European use of resources (scale), including “ecological rucksacks” induced by international trade.
2. Formulating and evaluating sustainability scenarios, linking economic performance with resource use and environmental deterioration.
3. To refine environmental indicators to assess resource productivities, material and energy intensities and labour intensities of resource use for the EU.
4. Elaborating policy strategies and actions that reconcile long-term economic development, international trade and environmental protection.

MOSUS is a project funded by the 5th framework programme of the EU (Sub programme “Environment and Sustainable Development”).

For further information please see [www.seri.at/mosus](http://www.seri.at/mosus) or contact Stefan Giljum ([Stefan.Giljum@seri.at](mailto:Stefan.Giljum@seri.at)).



### **Sustainability strategy project: Improvement of sustainability strategy elaboration for economic, environmental and social policy in Europe**

The objective of the sustainability strategy project is to use the diversity of scientific approaches to the problems of sustainability as a resource for improving the European sustainability strategy, especially its further elaboration and implementation. This requires the creation of a trans-disciplinary network focused on sustainable development, bringing together technical, economic and political science insights, and capable of monitoring the European sustainability strategy, while building a bridge to experts' and civil society networks committed to European policy co-ordination. The creation of such a thematic network would not only contribute to the achievement of sustainable development in Europe, including the policy co-ordination objectives of dynamic economic development, full employment and stronger social cohesion and of integration of environmental issues into all policies. Its functioning as an integrated discursive space would furthermore strengthen the governance structure of the European Union, by making it more accessible to its citizens, and reinforce the basis for a constructive role of the EU in global partnership.

For further information please visit [www.seri.at/sustrat](http://www.seri.at/sustrat) and [www.sustainability-strategy.net](http://www.sustainability-strategy.net) or contact Joachim Spangenberg ([joachim.spangenberg@seri.de](mailto:joachim.spangenberg@seri.de)).



## Assessment of Renewable Energy Technologies on Multiple Scales (ARTEMIS) – A Participatory Multi-Criteria Approach

The aim of the proposed research project is to apply, critically assess and develop further participatory multi-criteria evaluation (MCE) of selected future energy scenarios, and of individual renewable energy technologies (RETs), based on sustainability criteria of different dimensions (social, economic, environmental, institutional) in Austria.

The main methods applied are life-cycle analysis, scenario building, social surveys, expert interviews, deliberative processes, multi-criteria methods, and two case studies (national or regional level, local level). The main innovative aspects of the project are: (1) systematic exploration of the social impacts of renewable energy technologies; (2) comparison of selected state-of-the-art multi-criteria approaches for their suitability in participatory contexts.

The expected main results (potential benefits) of the project for the scientific community and for potential users are: (1) Impact matrix and MCE tool that can be used: (a) by national/regional/local policy and other decision makers for exploring different energy scenarios; (b) by national/regional/local policy makers for finding out about preferences of the general public for different energy scenarios as a basis for the design of renewable energy promotion schemes; (c) for the structuring of and as an aid for participatory (or non-participatory) decision processes involving different scenarios. (2) The extension of the approach to be developed to other (energy) technologies is straightforward. (1) Scientific articles contributing to current debates on public consultation and participation, assessing future energy options and the suitability of different multi-criteria methods for participatory evaluation.

For further information please see [www.seri.at/artemis](http://www.seri.at/artemis) or contact Ines Omann ([ines.omann@seri.at](mailto:ines.omann@seri.at)).



## Concerted Action on Trade & Environment (CAT&E)

The trade and environment policy and research agendas have expanded rapidly in recent years. Following conclusion of the Uruguay Round the agenda of the World Trade Organisation (WTO) expanded to incorporate a number of environment related issues. The rapid expansion of the trade and environment agenda has created a major area of research that is attracting researchers in virtually all member states. CAT&E aims to ensure the debate between these research centres and to draw new participants into the process. CAT&E includes participants from almost every member state and also provides for dialog with policy makers. The concerted action will be structured around a series of substantive questions and will also respond to the dynamics of this evolving research agenda and generate new impulses for research. The major issues to be addressed are: issues arising from existing trade agreements, issues arising from related environmental policies and institutional issues.

While this agenda may evolve over the course of the Concerted Action, it considers the following issues:

- Trade and agriculture
- Trade in services
- Subsidies and
- Investment
- Intellectual property rights (TRIPS)
- Trade and development
- Trade and Multilateral Environmental Agreements (MEAs)
- Trade, environment and labour/human rights/public health
- Institutional issues (dispute settlement, transparency and participation)
- Sustainability impact assessments (SIAs)

CAT&E is funded by the 5th Framework Programme of the European Commission and co-ordinated by IVM Amsterdam, Ecologic Berlin and IDDRI Paris.

For further information see [www.seri.at/cate](http://www.seri.at/cate) or contact Stefan Giljum ([Stefan.Giljum@seri.at](mailto:Stefan.Giljum@seri.at)).



## Modelling Sustainable Development in Austria

Based on national and international experiences the project will formulate necessary criteria for an Austrian modelling framework for integrated sustainability analysis. Bearing in mind the formulated criteria will support future efforts in model building in Austria. In cooperation with the Austrian Institute for Economic Research (WIFO)

Sustainable Development demands for full integration of the three dimensions of sustainability. Therefore, integrating environmental and social dimensions in macro-economic objectives more explicitly is necessary, which poses a new challenge for economic modelling. This need demands for the development of simulation models, which allow for formulating and evaluating scenarios of the economic and social impacts of key environmental policy measures as well as of the impacts of economic measures on the environment.

The project results will provide valuable insights for the development of an adequate sustainability modelling framework for the Austrian society.

The project is funded by the Austrian ministry for agriculture, forestry environment and water management.

For further information please see [www.seri.at/a-modell](http://www.seri.at/a-modell) or contact Andrea Stocker ([andrea.stocker@seri.at](mailto:andrea.stocker@seri.at)).



## Intelligent Cities (INTELCITIES)

INTELCITIES addresses the EU policy objective of the "Knowledge Society" by 2010 in the context of cities, through the implementation of the FP5 INTEL CITY roadmap project by developing the intelligent city - an integrated citywide ICT information system continuously accessible to all (planners, developers, politicians, designers, engineers, transport and utility service providers AND individual citizens) that will enable more inclusive decisionmaking and support more sustainable life-styles. The IP brings together a critical mass of 23 cities, led by Manchester and Siena with 20 ICT companies including Nokia, Microsoft and CISCO and 30+ research groups including 16 SMEs - a truly multi-disciplinary consortium managed by Deloitte and Touche; to undertake prototype studies in a number of EU cities. The project is concerned with advancing e-Governance at the city scale by focusing on a range of citizens' and business concerns about engagement with decision-making over the (re)generation and management of their local built environment.

For further information see [www.seri.at/intelcities](http://www.seri.at/intelcities) or contact Doris Schnepf ([doris.schnepf@seri.at](mailto:doris.schnepf@seri.at)).

## **CHIBOPE. Contributions of information and communication technologies (ICTs) to the equalisation of women and men in developing countries; examples from Chile, Bolivia and Peru.**

The development of information and communication technologies (ICT) is worldwide advancing very fast. This is the basis of the establishment of a so called "Information and Knowledge based society". The implementation and broad use of ICT is often seen as the solution for economic, social and political-institutional problems in developing countries. This perception allows to interpret, that ICT may be the crucial tool for developing countries to approximate very fast in their development to industrialised countries.

In that sense „Leapfrogging“ means the possibility to jump over certain stages of development and therefore approximate very fast to the socio economic situation of industrialised countries.

In this study the question, if ICTs really have the capacity to support Chile towards his way to a sustainable society and competitive economy is to be answered. The second question to be treated is, if and how it is possible to assess the existence of the so called gender digital divide with the help of existing indicators.

For more information see [www.seri.at/chepope](http://www.seri.at/chepope) please contact Doris Schnepf ([doris.schnepf@seri.at](mailto:doris.schnepf@seri.at)).

## **Sustainability in the online version of the newspaper “Der Standard”**

In cooperation with the Austrian newspaper SERI presents one or two new topics related to sustainability every month in the online version of the newspaper.

For further information see <http://derstandard.at/standard.asp?ressort=Nachhaltigkeit> or contact Doris Schnepf ([doris.schnepf@seri.at](mailto:doris.schnepf@seri.at)).

## **Consumption and the Environment in Europe: Trends and Futures**

The study identifies and analyses the main past trends and future outlooks for household consumption in Europe and its environmental effects. This includes an assessment of which consumption clusters (goods and services) have had the most significant environmental impacts in the past and which are expected to have the most significant impacts in the foreseeable future. It takes into account existing work on prioritising product areas and product groups.

International concern about consumption patterns is growing. This project seeks to support a better understanding of how sustainable consumption might come about. The project first reviewed recent trends in consumption and the associated environmental impacts. It focused on the most environmentally significant areas of consumption: food, transport and housing. Then the study analyses the forces shaping consumption. It focuses especially on social and cultural influences, which are poorly addressed in conventional policy analysis. Finally the study reviews outlooks for consumption and the environment to 2030. It draws on these outlooks to develop lessons for sustainable consumption strategies. On current trends, household consumption will continue to grow. Fuel use for car and air travel and electricity use in homes are expected to increase both in absolute terms and as shares of total energy use. Reference projections vary in their views on the rate of GDP growth in Europe, and the extent to which it will be offset by cleaner and more efficient technology. However, none see significant reductions over the next 30 years in the contribution made by households to CO2 emissions.

But more sustainable consumption futures are possible. They could come from a variety of sources. This study explored three scenarios:

- Business innovation to improve resource efficiency, leading to sharp reductions in CO2 emissions and other environmental impacts.
- Increased emphasis by governments on security and market protection, including limitations on imports of fossil fuels and other commodities and the development of renewable energy and nuclear power.
- A strengthening of local communities and a new emphasis on local cohesion, self-reliance and social innovation.

These scenarios and outlooks may not be mutually exclusive. The future may contain elements of all of them. But they point to the potential for a range of social and economic actors to play a role in bringing about more sustainable consumption patterns, including government, business and civil society. They also suggest that both technological and social innovation will be required. Governments will need to introduce a wide range of measures, and will need to find ways of working alongside and encouraging other actors.

For further information see [www.seri.at/consum](http://www.seri.at/consum) or write to Sylvia Lorek ([Sylvia.lorek@seri.de](mailto:Sylvia.lorek@seri.de)).

## Ongoing projects



### **Nachhaltige Entwicklung zwischen Durchsatz und Symbolik (NEDS, Sustainable Development between Throughput and Symbolism)**

The project shall contribute to a better understanding of the symbolic aspects of ecological-economic change. Bringing together post-normal aspects of ecological economics (high stakes, uncertain scientific inputs, role peer communities, problem orientation), environmental accounting (such as material flow analysis) and discourse analysis and constructivist approaches offers a chance to explicitly take into account the complex relationship between science and policy. NEDS is trying to achieve this on the regional level by analysing “natural”, economic, discursive, and spatial aspects of sustainable development as discourse.

The analysed regions are the metropolitan regions of Hamburg, Vienna and Leipzig – including the cities and their surrounding provinces. The analysed period runs from 1992-2001. The project focuses on the analysis of discourses, networks, material flows and regional structures by inter-disciplinarily combining different methods from various scientific domains. SERI contributes to the project with the Material Flow Analysis (MFA) for the three regions.

For publications from the project see the section publications in this annual report.

For further information see [www.seri.at/neds](http://www.seri.at/neds) or contact Mark Hammer ([mark.hammer@seri.at](mailto:mark.hammer@seri.at)).



### **e-System for Real Time Democratic Land-Use Planning of Urban Environment - Pilot Action in Narva Community (Estland)**

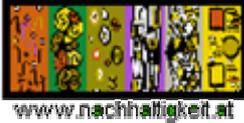
SERI is partner in the e-Community project (funded by the LIFE programme of the EU)- e-System for Real Time Democratic Land-Use Planning of Urban Environment - Pilot Action in Narva Community (Estland) - that aims to apply innovative web-based software solutions, which will promote the concept of e-democracy by enabling exchange of opinions and information, and that will help raising public awareness. A further aim is to produce results that can be reproduced in spatial planning and policymaking processes at a local level. The final goal of the project is to demonstrate a system as a tool for urban planning in the EU.

SERIs tasks in the project:

- monitor the project deliverables in respect to sustainability issues,
- evaluate interim results of the project and
- act as an advisor providing guidelines and background information so that the project can actively contribute to a sustainable development of the region.

This project has started in September 2002 and will end in August 2005.

For further information see [www.seri.at/ecommunity](http://www.seri.at/ecommunity) or contact Doris Schnepf ([doris.schnepf@seri.at](mailto:doris.schnepf@seri.at)).



## **www.nachhaltigkeit.at**

The Austrian website of [www.nachhaltigkeit.at](http://www.nachhaltigkeit.at) is prolonged. Every month a new "theme of the month" is prepared by one of the participating institutions, ÖIN, IUW and SERI (in german language). Themes prepared by SERI:

### **January 2003 - Global Discussion on Sustainable Development**

From 23rd to 28th of January two very important events about the global discussion on sustainable development are taking place: The World Social Forum, where the opponents of globalisation meet, and the World Economic Forum, the meeting of the world economic leaders of this planet. In this topic, SERI contributes to the discussion in the field of different aims and concepts of opponents and supporters of globalisation, and focuses on international trade and its impacts on social, ecologic and economic aspects. [www.nachhaltigkeit.at/reportagen.php3?id=12](http://www.nachhaltigkeit.at/reportagen.php3?id=12).

### **June 2003 - Arbeit und Nachhaltigkeit (Labour and Sustainability)**

It deals with different types of work and the concept of mixed work which is explained in its context of a sustainable development of the society. The idea of basic income for everyone as well as the actual debate on the interaction between pensions and the labour market are discussed. The text is only available in german language. See [www.nachhaltigkeit.at/reportagen.php3?id=7](http://www.nachhaltigkeit.at/reportagen.php3?id=7).

### **September 2003 - Ethics and sustainable development**

The topic of the Month of September "Ethics and sustainable development" at [www.nachhaltigkeit.at](http://www.nachhaltigkeit.at) deals with ethical questions, arising out of uncertainties, due to technical progress and globalisation issues. We do live in a time of big changes with immense consequences for economy and society. But what do these consequences mean in detail? It is both a question of the individual as well as the collective responsibility, which constantly deepens because of the ongoing progress of technical possibilities. The topic of the month "ethics and sustainability" tries to inspire a dialogue about these kind of questions. Based on the background information given about ethics and sustainable development, the authors tempt to activate an interactive discussion at [www.ethikundnachhaltigkeit.info](http://www.ethikundnachhaltigkeit.info). See also: [www.nachhaltigkeit.at/reportagen.php3?id=4](http://www.nachhaltigkeit.at/reportagen.php3?id=4).

For further information see [www.nachhaltigkeit.at/reportagen.php3](http://www.nachhaltigkeit.at/reportagen.php3) or contact Doris Schnepf ([doris.schnepf@seri.at](mailto:doris.schnepf@seri.at)).



## **Sustainable Consumption Network**

The aim of this network is to provide for and disseminate to citizens and policy makers the knowledge necessary to realize sustainable consumption patterns. The network unites European scientific expertise from a diverse set of research traditions and disciplines. They will apply their knowledge on common case studies and in an overall framework integrating diverse research traditions on sustainable consumption, coming from environmental systems analysis, management sciences, consumer economics, psychology, and social sciences. On this proposed basis, European researchers will be able to take a lead in a global 10 year work programme on implementing sustainable consumption and production policies, which the World Summit on Sustainable Development agreed on. It is designed to develop the necessary empirical information, policy analysis, tools, and implementation experience in order to scientifically support the consumption part of the EU's proposed 10-year work programme. The network contributes to the structuring and integration of European Research. It will further ensure the application of the research through a number of cases in which a) sustainable consumption is studied in practice and b) policy measures are tested in cooperation with policy makers from the local to the international levels, also NGOs.

UNEP/AIIST host a Scientific Expert Meeting, "Life-Cycle based Policy Tools for Sustainable Consumption". By organising this workshop, UNEP and AIIST wish to identify both what policy makers in this area need and what researchers have to offer. The meeting will also be used to build up a core group for a joint NGO, government, industry and academic network on sustainable consumption.

For further information see [www.sustainable-consumption.net](http://www.sustainable-consumption.net) or contact Sylvia Lorek ([sylvia.lorek@sustainable-consumption.net](mailto:sylvia.lorek@sustainable-consumption.net)).



## **Developing a Product Service System Methodology (MEPPS)**

SERI is a member of the scientific peer review group in this EU project coordinated by Price Waterhouse Coopers Amsterdam (PWC).

The project outcome will offer companies the tools to successfully implement new product-services that will be in line with their business goals, offer optimal quality for their individual customers and minimise negative impacts on the environment, thus resulting in sustainable growth.

The toolkit will be developed by researchers in the field of Product Service Systems (PSS) methodology, in close co-operation with industry participants who will provide up-to-date input of business cases and participate in testing and refinement of the developed methodologies and tools. MEPPS Consortium partners include: CIRIS Polit. di Milan, Pré, INSEAD, Ecobilan, PwC, GrAT, Econcept, Dalt, UNILEVER, Motorola GmbH and many others.

The presentation will include the selected project results in the following fields:

- Consumer acceptance of PSS innovations;
- Life Cycle Assessment / Life Cycle Costing of ecological and economic impacts of PSS innovations;
- Assessment of macroeconomic and societal impacts of PSS's
- Cultural background and ethics related to functionalities of PSS
- Consequences of PSS innovations on the design and R&D process

Technical achievements include: combining and upgrading state-of-the-art theories for the use in PSS, bridging the theoretical world of 'products' and 'services', development of new additional theory and building of PSS business modelling.

For further information see [www.seri.at/pss](http://www.seri.at/pss) or contact Mark Hammer ([mark.hammer@seri.at](mailto:mark.hammer@seri.at)).

## **Sustainable Development Plans, Indicators and a Council for the Republic of Kazakhstan**

After the Johannesburg World Summit on Sustainable Development 2002 the Republic of Kazakhstan decided to intensify its work towards sustainable development by introducing a set of sustainability indicators for process monitoring and to set up a council on sustainable development to provide a platform for societal dialogue and decision making on sustainable development.

The process is technically and financially supported by UNDP, which contracted Joachim H. Spangenberg as international expert to provide an overview of the international state of the debate regarding sustainability indicators, and to evaluate global experiences with sustainability councils to provide benchmarks for the decision making of the stakeholders in Kazakhstan.

A report comparing indicator systems used on the international level and on the national level in countries from Asia, Europe and America was presented in Almaty and a second one on international experience with sustainability councils in Almaty and Astana. Both were accepted by UNDP and discussed with different ministers and vice ministers.

When the project comes to an end in 2004, we hope SERI has contributed to lay a reliable ground for ambitious and successful sustainability strategies in Central Asia.

For further information please contact Joachim Spangenberg ([joachim.spangenberg@seri.de](mailto:joachim.spangenberg@seri.de)).

# Finished projects



## Product Service Systems for SMEs

The project "Product Service Systems für SME's" which started in January 2002 has come to an end with an event that took place on the 11th of April in Graz. The successful project combined the efforts of research and consulting institutes from Austria with those of small and medium sized companies in order to promote the design of sustainable product service systems (PSS).

SERI participated as a partner in the project "Development of new possibilities for companies by using a methodology of initialisation, creation and implementation of eco efficient Product Service Systems". The project contributed to the development of new, innovative product service systems. The project team put special interest in supporting the realisation of these concepts together with the targeted companies. The resulting new products and services were evaluated, to be sure that the criteria's for sustainable development are implemented. To achieve this, a tool for the companies - Improving New Services (INES) - was developed, that allows them the self assessment of their ideas for new Product Service Systems (PSS).

This project was funded by the programme of the Austrian BMVIT (Federal Ministry of Transport, Innovation and Technology): "Fabrik der Zukunft" ("factory of tomorrow").

For further information see [www.seri.at/INES](http://www.seri.at/INES) or contact Ines Omann ([ines.omann@seri.at](mailto:ines.omann@seri.at)).



## Environmental self-assessment of consumptive behaviour – An online questionnaire

For the Austrian Forum on environmental education (Forum Umweltbildung) SERI has developed a questionnaire for the self-assessment of the consumptive behaviour especially for the younger generation. On the basis of the Material Flow Analysis a questionnaire was created so the interested public can self assess there material requirement in the consumption clusters food, construction/housing, transport and lifestyle.

As consumptive behaviour is a key to dematerialisation, the awareness of this fact by consumers is crucial, as it is necessary to have an idea of the environmental stress potential of specific consumption goods to be capable to personally evaluate the impacts of decisions. An online-questionnaire that is easy to use and understand allows that.

For further information see [www.seri.at/questionnaire](http://www.seri.at/questionnaire) or contact Mark Hammer ([mark.hammer@seri.at](mailto:mark.hammer@seri.at)).



## Ways to a Sustainability in the EU beyond the Spring European Summit 2003

In this study for the Austrian Ministry of Environment on the further development of (and link between) the European Sustainability strategy, Lisbon (structural indicator reporting) and Cardiff (environmental integration) processes with a special look at the role of structural and sustainability indicators, SERI explored possible strategies for the Austrian position at the next EU-Environmental Council meeting. One of the goals of the project was to improve the integration process of sustainability into all sectoral policies. Emphasis is given to the energy and transport sector.

For further information see [www.seri.at/beyondSpring2003](http://www.seri.at/beyondSpring2003) or contact Friedrich Hinterberger ([friedrich.hinterberger@seri.at](mailto:friedrich.hinterberger@seri.at)).



## Adaptive Integration of Research & Policy for Sustainable Development (AIRP-SD)

Together with five partners from five different countries SERI linked several European research programmes aimed at sustainability-related technology development and evaluated them according to a jointly developed set of quantitative and qualitative evidence-based indicators. From these indicators a uniform methodological approach was developed to evaluate RTD programmes across Europe, and these findings will support recommendations for the creation of pan-European programmes that more effectively integrate scientists, policy makers and stakeholders in the development of more sustainable production and consumption processes.

The main outcomes of the project are the evaluation methodology for research programmes on sustainable development and recommendations on how to design and manage such research programmes.

For further information see [www.airp-sd.net](http://www.airp-sd.net) or contact Friedrich Hinterberger ([friedrich.hinterberger@seri.at](mailto:friedrich.hinterberger@seri.at)).

## INTELCITY

This project is funded by the IST programme of the European Union.

SERI is a member of the think tank of the INTELCITY project funded by the E.U. Information Society Technologies (IST) Programme. It aims to explore new opportunities for sustainable development of cities through the intelligent use of Information and Communication Technologies (ICTs). It will integrate the knowledge of experts in sustainable urban development (SUD) and ICTs to deliver a roadmap that relates the range of potential ICT development options to planning and urban re/development processes.

Aims: to explore the role of Information and Communication Technologies (ICTs):

1. in creating an integrated city information infrastructure for the future founded on the four pillars of sustainability – social, economic, environmental and institutional, as well as cultural heritage, participation in governance and quality of life essential to the well-being of citizens
2. to help deliver more sustainable urban decision making through: 'virtual' urban spaces as practical + cost effective planning tools simulation of innovative physical forms and infrastructures that communicate complex social, economic and environmental issues to citizens interactive decision support systems that enhance urban design, provide better built form and mobility and maximise social inclusion especially for the aged and disabled.

For further information see [www.seri.at/intelcity](http://www.seri.at/intelcity) or contact Doris Schnepf ([doris.schnepf@seri.at](mailto:doris.schnepf@seri.at)).

# Future projects

## **Biodiversity assessment and analysis of pressures on biodiversity (ALARM)**

The ALARM project has been negotiated successfully with the EU Commission and will be funded under the 6th framework programme of the EU Commission, starting in early 2004. SERI will contribute to the analysis of socio-economic pressures and develop indicators for this purpose, as well as coordinating the work of the socio-economic group, consisting of the Autonomous University of Barcelona, C3ED at University of Versailles Saint-Quentin-en-Yvelines University, Stockholm Environmental Institute, Tallin Office and SERI itself.

For further information see [www.seri.at/alarm](http://www.seri.at/alarm) or contact Joachim Spangenberg ([joachim.spangenberg@seri.de](mailto:joachim.spangenberg@seri.de)) or Friedrich Hinterberger ([friedrich.hinterberger@seri.at](mailto:friedrich.hinterberger@seri.at)).

## **Best Practice Examples for Product Service Systems (PDL Leuchttürme)**

The project aims at strengthening the market for sustainable Product-Service-Systems (PSS) by clearly identifying success factors and hindrances. Restraining factors and basic conditions are worked out on the basis of best-practice examples. From this, as well as from the own experiences of the project team, strategic recommendations for action (for political decision makers) are derived.

The project concentrates on selected fields within the range of industrial applications – in the area of business to business (b2b) commerce. National, European and international PSS are collected and analysed by using an analysis matrix which then will be examined and evaluated. To achieve this, national and international experts on this area, entrepreneurs and decision makers are incorporated in the discussion. This will be facilitated by workshops and interviews. During the project particularly outstanding PSS best practice examples – PDL Leuchttürme - will be selected and exemplary represented.

For further information see [www.seri.at/leuchttuerme](http://www.seri.at/leuchttuerme) or contact Mark Hammer ([mark.hammer@seri.at](mailto:mark.hammer@seri.at)).

# Events

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## **Governance for Sustainable Development (GoSD), Meeting in Pignans, France, May 2003 and Meeting in Vienna, December 2003**

In 2003, two preparation meetings for the Governance for Sustainable Development project took place, one in Pignans, France and the second one in Vienna.

16 European experts in sustainability research met in Pignans, France, from 1-4 May, 2003, in the course of the preparation process for a research proposal on "Governance for Sustainable Development (GoSD)" for the 6th Framework Programme of the European Commission. The outcome of the meeting was the "Pignans Statement" on objectives and indicators for sustainable development, which will serve as one main basis of the GoSD consortium for further preparation of the project proposal. The Pignans Statement can be downloaded at [www.gosd.net/Pignans.pdf](http://www.gosd.net/Pignans.pdf).

More than 20 European experts in governance issues participated in the GoSD Governance Meeting, which took place from 14-16 December, 2003, in Vienna. The meeting was dedicated to elaborate a common understanding of governance concept applied in the GoSD project within the consortium and to concretize the structure of the GoSD proposal and the next steps towards its preparation.

For further information see [www.gosd.net](http://www.gosd.net) or contact Fritz Hinterberger ([fritz.hinterberger@seri.at](mailto:fritz.hinterberger@seri.at)).

## **SERI @ FRONTIERS II Conference**

The FRONTIERS 2 Conference - European Application in Ecological Economics – organised by the European Society for Ecological Economics (ESEE) took place at Hotel Maritim, Tenerife, Canary Islands, Spain, 12-15 February 2003 and was focused on state-of-the-art applications of ecological economics for environmental planning and management, in education and for testing the robustness of research tools.

Friedrich Hinterberger, President of SERI, was part of the Scientific Advisory Committee of the conference. About 9 Members of SERI were chairing sessions or presenting papers at the conference. You can find the timetable of their presentations, the abstracts, papers and presentations on our website.

The following papers have been presented by members or interns of SERI:

STAGL, Sigrid: (University of Leeds, UK): Multicriteria Evaluation and Participation: In Search for Theoretical Foundations.

VIEIRA, Ricardo DOMINGOS, Tiago CANAVEIRA, Paulo & SIMOES, Ana: Biophysical aggregation in life cycle assessment: comparative economic ecological evaluation of eucalyptus and industrial hemp fibres.

OMANN, Ines: Product service systems and their impacts on sustainable development.

NIEDERL, Andreas & MESICEK, Roman: Visualisation of consumptive behaviour on the basis of material intensity.

SPANGENBERG, Joachim: Sustainability science: science must go public for sustainable development.

SERRANO, Sandra DOMINGOS, Tiago & SIMOES, Ana: Energy and emergy analysis of meat and dairy production in intensive, extensive and biological system.

Joao RODRIGUES Joao & Tiago DOMINGOS: The EKC and the rebound effect in a static economy.

MURADIAN, Roldan, Nina EISENMENGER & Stefan GILJUM: The distribution of economic values and environmental burdens through global trade.

SPANGENBERG, Joachim: Biodiversity indicators - the need to go from species to pressures.

LUKS, Fred & HAMMER, Mark: Understanding scientific-political decisions processes: Material flow analysis, discourse analysis and the rhetorics of (ecological) economics.

For further information see [www.seri.at/Data/seri/events/frontiers2003/frontiers2003main.htm](http://www.seri.at/Data/seri/events/frontiers2003/frontiers2003main.htm) or contact Mark Hammer ([mark.hammer@seri.at](mailto:mark.hammer@seri.at)).

## **SERI @ Quo vadis MFA?**

A workshop „Material Flow Analysis – Where do we go? Issues, Trends and Perspectives of Research for Sustainable Resource Use", Wuppertal, 9.–10. October 2003.

Organized by ConAccount and the Wuppertal Institute in association with the International Society for Industrial Ecology (ISIE), the Scientific Committee of Problems for the Environment (SCOPE), and the initiative for a European Research Network for Sustainable Resource Management (ENSURE).

The following papers by SERI members have been presented:

João Rodrigues, Stefan Giljum: The material requirements of economic and monetary flows.

João Rodrigues, François Schneider, Stefan Giljum, Tiago Domingos, Fritz Hinterberger: Designing a fair indicator of environmental pressure.

João Rodrigues, François Schneider, Stefan Giljum, Tiago Domingos, Fritz Hinterberger: Socio-economic indicators of material requirements.

Stefan Giljum and Nina Eisenmenger: North-South trade and the distribution of environmental goods and burdens: a biophysical perspective.

Mark Hammer, Klaus Hubacek: Material Flows and Economic Development in Eastern Europe. Material Flow Analysis of the Hungarian Economy (1993-1997)

Friedrich Hinterberger, Mark Hammer: A Sustainable Development Index. A suggestion for “greening” the UN’s indicator of social and economic welfare.

Mark Hammer, Stefan Giljum, Friedrich Hinterberger: Applying MFA on a Regional Level: Developing Methods and Case Study for the Metropolitan Region of Hamburg.

Friedrich Hinterberger and Stefan Giljum: Modeling global resource use: MFA, land use and input-output models.

For further information see [www.seri.at/Data/seri/events/quovadis](http://www.seri.at/Data/seri/events/quovadis) or contact Mark Hammer ([mark.hammer@seri.at](mailto:mark.hammer@seri.at))

## **World Summit on the Information Society 10.-12.12.2003, Geneva, Switzerland**

SERI presented a paper "Prerequisites for a Sustainable and Democratic Application of ICT" (R137) by Ursula Hester, Doris Schnepf and Roman Mesicek.

It was presented on Monday, 8th of December 2003 in SESSION 6 - Information Society and e-Governance I of the WFIS.

This session examines the ways in which ICT can be used to improve participatory democracy, transparency, and accountability upholding the principle of legality, and empowering local communities. In this regard, UN Secretary-General’s point is worthy to note. “One of the hallmarks of the information society-openness-is a crucial ingredient of democracy and good governance. Information and knowledge are also at the heart of efforts to strengthen tolerance, mutual understanding and respect for diversity” (New York, 18 June 2003).

For further information see [www.seri.at/wsis2003](http://www.seri.at/wsis2003) or contact Doris Schnepf ([doris.schnepf@seri.at](mailto:doris.schnepf@seri.at)).

## **McPlanet, July 2003**

SERI was invited to give a presentation at the conference McPlanet.com - the environment in the globalisation trap, organised by attac, Greenpeace, Friends of the Earth and the Heinrich-Böll Foundation in Berlin, 27th to 29th of June ( for details on the conference see [www.mcplanet.com](http://www.mcplanet.com)).

Stefan Giljum gave a talk on international trade, economic growth and (un)sustainable development from the perspective of ecological footprints and material flows.

For further information see [www.seri.at/Data/personendaten/sg/mcplanet.PDF](http://www.seri.at/Data/personendaten/sg/mcplanet.PDF) or contact Stefan Giljum ([Stefan.giljum@seri.at](mailto:Stefan.giljum@seri.at)).

## **Club of Rome, December 2003**

Fritz Hinterberger gave a presentation (in German language) at a meeting of the Austrian chapter of the Club of Rome on the role of (man-made, natural, financial, social and cultural) capital for sustainable development.

For further information see [www.seri.at/download/CoR\\_2003.pdf](http://www.seri.at/download/CoR_2003.pdf) or contact Friedrich Hinterberger ([friedrich.hinterberger@seri.at](mailto:friedrich.hinterberger@seri.at)).

## **Lecture of Jonathan Lash (President, World Resources Institute) 8.10.2003 Vienna**

On Wednesday, 8th of October, Jonathan Lash, President of the World Resources Institute, Washington, held a lecture in Vienna, which was jointly organised by SERI and the Institute for Interdisciplinary Studies of Austrian Universities (IFF)/Social Ecology. The lecture took place at the main auditorium of the IFF in 1070 Vienna, Schottenfeldgasse 29.

## **Tomorrow's Markets - a presentation by Jonathan Lash, 9. October 2003, Vienna, Haus der Industrie.**

Following discussion on "Water as 21st century resource - Austrian contribution to the global water culture". Watch this event at [www.sustainability.tv/video/lash](http://www.sustainability.tv/video/lash).

## **Vienna Science Days 2003**

SERI is taking part at the Viennese Science Days 2003 with which the city of Vienna wants to show and strengthen its role as an active and engaged "Science-City".

Vienna has the great advantage, of possessing a high quality and innovative science and research scene. The series of events from the 19th until the 30th of October 2003 and the event website shall communicate this fact to the broader public. Get more info at [www.wienerwissen.at](http://www.wienerwissen.at) (in german only).

## **SERI Brownbag Seminars**

In 2003 continued the SERI brownbag seminar series.

In this series of lectures, we want to discuss our own work and that of our colleagues. Location: SERI's office in Vienna, Schwarzspanierstr. 4/8.

### **March 2003**

Markku Wilenius, research director of the Finland Futures Research Center and associate member of the Club of Rome will talk at the brownbag seminar at SERI Vienna on Friday, 7th March 2003, at 1 pm. The topic of the talk is: Visions of Europe

### **November 2003**

Dr. Friedrich Hinterberger on "Governance for Sustainable Development": This is an emerging proposal for the 6th FP of the EU. The General objective of the projects is to explore the development of a resource-optimised knowledge-based service society in relation to all dimensions of sustainability by way of applying a back casting methodology to identify (1) gaps between desired futures and current trends, and (2) policy requirements. We want to discuss the following research questions: What are realistic and consistent development targets or "landing places" within one generation (20-30 years)?; What are the key barriers to reaching the development targets or "landing places"? and is there a need for new social and political institutions?

### **December 2003**

DI. Roman Mesicek on "eGovernment - Possibilities and risks of online participation". Three major themes recur as prerequisites for success of eGovernment solutions: access, trust and institutional change. Based on the ongoing work in the eCommunity project we want to talk about, how it is possible to achieve these three conditions and what forms of online participation are supportive of community building and which are counter-productive? Furthermore how does e-government and e-participation fit into the context of sustainability?

For further information see [www.seri.at/brownbag](http://www.seri.at/brownbag) or write to Gabi Christler ([gabi.christler@hintereberger.com](mailto:gabi.christler@hintereberger.com)).

# Publications

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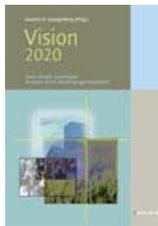
## Books



**Marcus Stewen (2003). Inputorientierte Umweltpolitik in der Sozialen Marktwirtschaft, Nomos Verlagsgesellschaft.**

The impact on ecosystems, caused by material use of industrialized countries, is huge. Four billion tons of material are taken from the ecosystem just in Germany. An input oriented environmental politic tries to reduce material flow on the input side. That means an absolute reduction of resources, material and land use. In this book, the concept of an input oriented environmental politic is concretised as well the possibilities for its implementation.

For further information see [www.nomos.de/nomos.lasso](http://www.nomos.de/nomos.lasso).



**Joachim H. Spangenberg (Ed.) (2003) Vision 2020, Arbeit, Umwelt, Gerechtigkeit. Strategien für ein zukunftsfähiges Deutschland. Oekom.**

The book integrates a number of project results from projects SERI or SERI members have undertaken in the past few years, in German language. It analyses the potential sustainable development for Germany based an qualitative integrated scenario, comprising environmental and social issues, economic development and unpaid work, social security systems and consumption patterns, gender justice and quality of life.

Regarding the environmental dimension, the scenario demonstrates that a combination of energy and material input taxation, supported by technology change can lead to reductions of CO<sub>2</sub>-emissions of more than the half within 20 years, while material flows decline by a quarter over the same period. Such quantification was achieved by illustrating certain aspects of the scenario by simulation runs with the macroeconomic input-output model PANTA RHEI. They demonstrated that although economic growth is below the level resulting from an explicit growth strategy (+75% by 2020), GDP still increases by 2/3. If salary policy is pursued to pay out gains from labour productivity increases to the working population half in salary increases and half in compensated labour time, purchasing power still increases by one third, full employment is reached and working time goes down to 27 hours per week.

Social security is secured in the scenario by modernising the public insurance systems, with necessary funds gained from the tax reform and the phasing out of environmentally or socially no longer acceptable subsidies. As a result, a significant budget surplus results which is suggested to be spent on financing a basic income and to eradicate poverty (which is a shame for a rich country such as Germany anyway).

Finally, three more qualitative focuses of the book are the future of labour as mixed labour, integrating paid and unpaid work on equal footing, secondly gender justice in business, social and private life, and finally the future role of sustainable consumption, its meaning and preconditions.

The book points out the policy strategies necessary to achieve a more sustainable development and illustrates that indeed some hard choices are needed, but if the political will is there integrated social, economic, institutional and environmental sustainability is no mission impossible, but a vision impossible to ignore.

The book includes contributions by SERI members Joachim H. Spangenberg, Sandra Striewski, Ines Omann, Sylvia Lorek, and Friedrich Hinterberger.

For further information see [www.oekom.de/verlag/german/books/spang\\_vision.htm](http://www.oekom.de/verlag/german/books/spang_vision.htm).

**Stefan Giljum (2003): Biophysical dimensions of North-South trade: material flows and land use. PhD thesis. University of Vienna.**

Despite the large number of existing biophysical accounting studies on the national level, data availability concerning resource flows and land appropriation in North-South trade is still very limited. In the literature, only very few empirical studies investigating the interrelations between trade and the environment take a systemic perspective of the economy-environment relationship and explain environmental implications as a consequence of the so-called "biophysical metabolism" of societies. This doctoral thesis aims at integrating the two research fields of biophysical accounting on the one hand and trade and environment on the other hand. The thesis attempts to further develop methods for the calculation of indirect resource requirements in international trade and introduces a new approach, applying input-output analysis based on physical input-output tables. In addition, the study addresses main shortcomings of material flow accounting and analysis (MFA) and provides suggestions for methodological improvements and possible extensions of the MFA framework, intending to develop this method into a more powerful tool for policy use. Empirical work contributes to the improvement of the data situation by presenting and analysing case studies on resource use in international trade for both a Northern world region (the European Union) and a Southern country (Chile). Finally, frequently suggested policy measures to reconcile trade, environment and sustainable development are evaluated from a biophysical perspective. Results illustrate that intensification of international trade stimulated by trade liberalisation efforts raises absolute levels of resource use on a worldwide scale and reinforces tendencies towards increased global inequality with regard to the distribution of environmental goods and environmental burdens between North and South. It is concluded that biophysical accounting methods are particularly suitable to elucidate environmental consequences resulting from economic specialisation processes through the international division of labour, as they clarify implications for both the use of natural resources and the generation of waste and emissions in a consistent and comprehensive manner.

The full text of the PhD thesis can be downloaded from [www.seri.at/Data/personendaten/sg/diss.htm](http://www.seri.at/Data/personendaten/sg/diss.htm).

**Spangenberg, J. H., Lorek, Sylvia (2003). Lebensqualität, Konsum und Umwelt: intelligente Lösungen statt unnötiger Gegensätze. Bonn, Friedrich Ebert Stiftung.**

To download the publication go to [http://library.fes.de/cgi-bin/populo/digbib.pl?f\\_ABC=gk-oeкома&t\\_listen=x&sort=cr](http://library.fes.de/cgi-bin/populo/digbib.pl?f_ABC=gk-oeкома&t_listen=x&sort=cr).

## Articles

**Stefan Giljum (2002). Globaler Freihandel und Nachhaltige Entwicklung: Utopie oder Realität?, Kurswechsel, Vol. 4/2002, pp. 75-85. (German)**

Wie der Begriff Nachhaltigkeit, so hat auch das Schlagwort der Globalisierung in den 1990er Jahren die gesellschaftliche Diskussion stark geprägt. Der zunehmend liberalisierte Handel von Gütern über nationalstaatliche Grenzen hinweg ist dabei eines der zentralen Merkmale des Globalisierungsprozesses. Basierend auf empirischen Untersuchungen über die mit dem internationalen Handel verbundene Nutzung von natürlichen Ressourcen in verschiedenen Weltregionen analysiert dieser Artikel die Problematik und Gefahren, welche das gegenwärtige System des zunehmenden Freihandels aus Sicht der Nachhaltigkeit mit sich bringt. Es wird aufgezeigt, durch welche Mechanismen der liberalisierte Handel zur Übernutzung der global verfügbaren ökologischen Kapazitäten beiträgt und zu einer Neuverteilung von Umweltbelastungen auf globaler Ebene führt. Schließlich werden einige Ansätze und Instrumente vorgestellt, welche das globale Handelssystem in Richtung einer Nachhaltigen Entwicklung reformieren könnten.

For more information see [www.kurswechsel.at](http://www.kurswechsel.at) or contact Stefan Giljum ([stefan.giljum@seri.at](mailto:stefan.giljum@seri.at)).

**Mark Hammer, Stefan Giljum, Silvia Bargigli, Friedrich Hinterberger (2003). Material flow analysis on the regional level: questions, problems, solutions. NEDS Working Paper Nr. 2, April 2003**

This paper aims at developing a method for applying the framework of material flow accounting and analysis (MFA) on the regional level. Starting from a discussion on the state-of-the-art in MFA on the national level, already published regional case studies are reviewed and details concerning the different methodological approaches discussed. The review reveals that existing studies differ considerably with regard to the size of the investigated regions, the methods applied and the data generated. Based on this review, a method for compiling regional MFA accounts is derived, which is compatible with the standard method for national MFA. Special focus is put on the description of possible estimation methods to overcome expected data gaps, in particular with regard to international and intranational trade flows. Finally, interlinkages between material flow accounting and land use accounting are discussed.

The paper can be downloaded at [www.seri.at/Data/projects/neds/nedspublications.htm](http://www.seri.at/Data/projects/neds/nedspublications.htm).

**Klaus Hubacek, Stefan Giljum (2003). Applying physical input-output analysis to estimate land appropriation (ecological footprints) of international trade activities. Ecological Economics 44 (1), pp. 137-151**

In the last few years some studies have been presented, which link land use accounting and input-output analysis (based on monetary input-output tables-MIOTs) for the calculation of direct and indirect land appropriation of production and consumption activities. The compilation of the first comprehensive physical input-output tables (PIOTs) for some western European countries in the 1990s opened new possibilities for linking physical accounting and input-output analysis. Using a physical multiplier for this kind of calculation is more appropriate, as the most land intensive sectors are also the sectors with the highest amounts of material flows. Physical input-output analysis illustrates land appropriation in relation to material flows of each of the sectors, which is more appropriate from the point of view of environmental pressures than land appropriation in relation to monetary flows of a MIOT. Physical input-output analysis has so far not been applied for any land-related studies. Based on a physical input-output model of the EU-15, physical input-output analysis is applied in this paper, in order to calculate direct and indirect land requirements for the production of exports from EU-15 to the rest of the world.

**Sylvia Lorek, Rainer Lucas (2003). Wuppertal Paper Nr. 130: Towards Sustainable Market Strategies – A Case Study on Eco-textiles and Green Power**

The study focuses on the economic, market-related context of consumption patterns and incorporates the regulatory settings and values. The aim is to systemise the influences on sustainable consumption patterns. Special attention is drawn to the question how existing niche markets could be extended to mass markets. This question is deepened by case studies on the green textile and the green power markets. The results emphasise the different key factors which influence the successful pathways for an extended green market volume. Looking at the case of the green power market it can be seen how important it is to create an economic and institutional context for adoption. Looking at the case of green textiles the importance of new lifestyles and cultural impacts are obvious. Looking at the interfaces between institutional settings, supply structure, societal values and consumers' decision-making, it can be seen that consumers' demands are not only a product of individual needs. Therefore sustainable consumption strategies will have to face not only the change of needs, but also the change of structures which influence individual choices.

The paper can be downloaded at: [www.wupperinst.org/Publikationen/WP/WP130.pdf](http://www.wupperinst.org/Publikationen/WP/WP130.pdf).

**Fred Luks (2002). "The Jo'burg Memo: beyond development-as-global-growth". In: Comments on the Jo'burg Memo. Heinrich-Böll-Stiftung. World Summit Johannesburg Paper No. 18. S. 20 - 24.:**

The Jo'burg Memo takes up many issues that are frequently neglected in the main-stream debate but are central to the discourse on global justice (i.e. sustainable development). It is a timely contribution in its focus on concerns that are hardly ever discussed in the depth they deserve. In the comment

Fred Luks focuses on four issues: the connection between justice and ecology, the questionable concept of development, the problem of economic growth and delinking and, finally, on some symbolic aspects of the debate.

The paper can be downloaded from: [www.worldsummit2002.org/download/wsp18](http://www.worldsummit2002.org/download/wsp18).

**Fred Luks, Mark Hammer (2003). Material flow analysis, discourse analysis and the rhetorics of (ecological) economics. NEDS Working Paper Nr. 1, March 2003**

Scientific analysis of processes leading to (un-)sustainability often focus on either the material aspects (environmental impact assessment, material flow analysis) or – far less often – on the symbolic aspects of the issue. The concept of discourse offers the chance to pay attention to both material and symbolic dimensions of socio-economic development. While "material" approaches such as material flow analysis are established within the community of ecological economists, this is not true for analytical frameworks that concentrate on the discursiveness and social construction of scientific and political facts. Combining these tools promises a better understanding of how decision processes are embedded in a field that has material aspects, but is often dominated by symbolic structures and processes. In focussing on the link between material flow analysis and discourse analysis, we show how this combination can contribute to a methodological critique of MFA and a better understanding regional discourse on sustainable development.

The paper can be downloaded at [www.seri.at/Data/projects/neds/nedspublications.htm](http://www.seri.at/Data/projects/neds/nedspublications.htm).

**François Schneider, Justina Catarino, Anabela Nogueira, Fátima Rodrigues and Cristina Santos (2002). "Towards Dewaterisation and Dematerialisation of Regional Water Use Basins with Water Flow Analysis". In: Proceedings of Science for Water Policy (SWAP) The implications of the Water Framework Directive University of East Anglia, Norwich, UK.**

The concept of "dewaterisation" is introduced. The concept deals with reducing the fundamental sources of water shortages and pollution: reducing water abstraction linked to a region and preventing the introduction of water pollutants within economies.

The paper can be downloaded at: [www.mariecurie.org/swap/swapoutput.htm](http://www.mariecurie.org/swap/swapoutput.htm).

**Joachim Spangenberg (2003). Sustainability Strategies-Roots, State and Challenges; Proceedings of the 2003 international sustainable development research conference, Nottingham, UK, ERP Environment: 432-441.**

The term and concept of sustainable development date back to 18th century Germany, when economic shortages (firewood for silver smelting) led to the introduction of sustainability principles in forest management. Similar concepts arose in France and in Britain. The strategies suggested in feudal Europe resemble quite closely today's discussion: to shift towards sustainable consumption and production patterns, or to overcome resource scarcity (these days including pollution sinks) by means of global trade, relocating industries or forcefully seizing foreign resources. These strategies are discussed regarding their present applicability, and the need for structural change is highlighted. The Johannesburg summit for all its weaknesses demonstrated that the integration of economic, social and environmental concerns has come a long way since "Our Common Future". The conference results are discussed regarding which of the strategic options mentioned they support. The repercussions for policy strategy formulation in a rapidly changing political environment are discussed.

To download the paper go to [www.seri.at/Data/personendaten/js/roots.htm](http://www.seri.at/Data/personendaten/js/roots.htm).

**Joachim Spangenberg (2003). Sustainable consumption - living within our environmental space. Integrative approaches towards sustainability: Baltic region taking the lead, Proceedings, Jurmala, Latvia, University of Latvia: 109-118**

Unsustainable consumption patterns of the affluent global consumer class have long been identified as one of the driving forces of unsustainable development. Unfortunately, there is hardly any data regarding socially sustainable consumption, and for the environmental impact the data available are varying significantly. To overcome this situation, a comprehensive analysis of household consumption

has been conducted. The assessment was based on an analysis of the total resource throughput measured as energy, materials and land use, using physical input-output data. As a result, three core consumption patterns of European societies could be identified where consumers have significant impact on the generation of environmental problems, namely construction and housing, transport and mobility, and nutrition. All other consumption patterns turned out to be either environmentally marginal or not under consumer control. For these patterns, indicators have been developed to guide political action and to monitor their effectiveness.

To download the paper go to [www.seri.at/Data/personendaten/js/household.htm](http://www.seri.at/Data/personendaten/js/household.htm)

**Joachim Spangenberg, Ines Omann, Friedrich Hinterberger, (2002). "Sustainable growth criteria. Minimum benchmarks and scenarios for employment and the environment." *Ecological Economics* 42(3): 429-443**

The relationship of economic growth and environmental impact has spurred fierce debates between growth optimists referring to the phenomenon of the environmental Kuznets curve, and pessimists referring to the limits to growth. However, no operational set of simple criteria has been developed so far to assess the sustainability of a given growth pattern. This is all the more true for measures combining environmental and social criteria. The paper undertakes to sketch out such criteria, and to assess them by applying them to transdisciplinary sustainability scenarios and model simulations with PANTA RHEI, one of the most complex models of the German economy. Theoretical considerations, as well as the empirical work with the model, demonstrate that there are indeed trade offs between economic growth and environmental impacts, and a positive correlation of growth and employment. Nonetheless, it is still possible to develop carefully orchestrated strategies that combine economic competitiveness, low unemployment rates and an easing relief of the pressure on the environment. Social and technical innovation, reduced working time, a modernised social security system, green taxes and salary increases proportional to labour productivity growth are essential parts of any such strategy. The triple effectiveness of such strategies regarding environmental, social and economic sustainability is demonstrated by the model runs.

**Joachim Spangenberg, J. H. (2003). "Environmental space and the prism of sustainability: frameworks for indicators measuring sustainable development." *Ecological Indicators* 2(3): 291-304.**

**Joachim Spangenberg (2003). "Vorbild und Warnung zugleich. Die EU-Nachhaltigkeitsstrategie." *Ökologisches Wirtschaften* 2003(3-4): 15-16.**

**Joachim Spangenberg (2003). "Versprechen machen nicht satt. Gentechnik und Welternährung." *Politische Ökologie*(81-82): 109-113.**

**Joachim Spangenberg (2003). "Soziale Nachhaltigkeit." *Utopie kreativ*(153): 37-51.**

**Joachim Spangenberg (2003). "Sustainability strategies: Roots, state and challenges." *INES Newsletter*(43): 13-19.**

**Joachim Spangenberg (2003). *Global Governance und Institutionen für nachhaltige Entwicklung. Globaler Wandel und nachhaltige Entwicklung. Bestandsaufnahme und Perspektiven für Forschung und Politik.* J. Kopfmüller. Berlin, Edition Sigma.**

**Joachim Spangenberg (2003). *Forschung für Nachhaltigkeit - Herausforderungen, Hemmnisse, Perspektiven.* Handbuch Nachhaltige Entwicklung. Wie ist nachhaltiges Wirtschaften machbar? G. Linne, Schwarz, Michael. Opladen, Leske + Buderich: 531-550.**

### **Conference papers**

For information on papers presented at conferences and workshops see the section "events" in this annual report.

# SERI Working Papers

## SERI Working Papers

SERI Working Papers are the outcome of ongoing research activities at SERI. They present preliminary results, which are open for debate and improvement for publication in scientific journals. Each SERI Working Paper is reviewed by a member of the scientific advisory board of SERI.

### **Working Paper No. 2 (June 2003):**

**Stefan Giljum, Nina Eisenmenger. North-South trade and the distribution of environmental goods and burdens. A biophysical perspective.**

The implications of North-South trade for economic development and the distribution of economic benefits through international trade have been a long-standing discussion in economics. In the last 20 years, environmental distribution issues gained increasing attention in the international debate, in particular since the recognition of sustainable development as the guiding principle for future global development. In this paper we take a biophysical perspective to analyze the distribution of environmental goods versus environmental burdens in North-South trade relations. Studies based on physical accounting are particularly suitable to elucidate environmental consequences of economic specialization processes in different world regions, as they clarify implications for both the use of natural resources and the generation of waste and emissions in a coherent and comprehensive manner. Empirical evidence from biophysical accounting studies suggests that the formation of specific metabolic profiles of societies in North and South as a consequence of specialization leads to an unequal distribution of environmental goods and burdens. The paper closes with an evaluation of policy measures and instruments with regard to their likely effects on environmental distribution between North and South.

The paper can be downloaded at [www.seri.at/workingpapers](http://www.seri.at/workingpapers).

# SERI Background Papers

## SERI Background Papers

SERI Background Papers present a comprehensive overview on the state of the art in particular research fields, addressing researchers from related research fields.

### **Background Paper No. 1 (May 2003):**

**Joachim H. Spangenberg. Globale Umweltveränderungen. Eine Literaturlauswertung. (German).**

From the introduction: Seit 1950 hat sich das Volumen der Weltwirtschaft mehr als verfünffacht; die Umweltbelastungen sind dementsprechend gestiegen, ohne dass die Verteilungsprobleme in und zwischen den Ländern gelöst worden wären, im Gegenteil. Ursachen des Wachstums sind die Bevölkerungszunahme einerseits und das gestiegene Pro-Kopf-Einkommen andererseits; der wachsende Konsum wurde im Süden armuts- und im Norden wohlstandsbedingt in nicht-nachhaltige Konsummuster umgesetzt. Eine Tendenz zu einer mit steigendem Wohlstand abnehmender Ungleichverteilung tritt nur dann auf, wenn sich eine umverteilende Sozialpolitik gegenüber ökonomischen Eigeninteressen durchsetzt; auch hohe Wachstumsraten führen nicht zu mehr Verteilungsgerechtigkeit. Ähnliches gilt für die Entwicklung der Umweltbelastung mit wachsendem Wohlstand: ein quasi automatischer Rückgang der Gesamt-Umweltbelastung findet nicht statt.....

The paper can be downloaded at [www.seri.at/backgroundpapers](http://www.seri.at/backgroundpapers).

### **Background Paper No. 2 (August 2003):**

**Friedrich Hinterberger, Stefan Giljum, Mark Hammer. Material flow accounting and analysis. A valuable tool for analyses of society-nature interrelationships.**

This paper aims at summarizing methodological foundations and the state of the art in the rapidly emerging field of material flow accounting and analysis (MFA). Chapters 1 to 8 give a short description of the method starting with the historical development, presenting a general model of economy-wide material flow analysis, illustrating indicators that can be derived from MFA accounts, and explaining methods for the calculation of so-called "ecological rucksacks". Chapter 9 illustrates main areas of applications of MFA, and chapter 10 describes the shortcomings of this method. Chapter 11 presents an overview of the state of the art of existing studies. Chapter 12 discusses selected empirical results taken from recently published MFA studies for the European Union. Finally, chapter 13 gives an outlook on possible extensions and future methodological development.

The paper can be downloaded at [www.seri.at/backgroundpapers](http://www.seri.at/backgroundpapers).

The paper has also been published in the Internet Encyclopaedia of Ecological Economics of the International Society for Ecological Economics (ISEE): For further information see <http://www.ecologicaleconomics.org/publica/encyc.htm>.

### **Background Paper No. 3 (September 2003):**

**Joachim Spangenberg. Integrating economic, social and environmental policies: who calls the tune? A Background Paper for the EU Spring summit.**

From the introduction: Integrated politics for macroeconomic objectives has a remarkable tradition in the European Union. Already the late president of the Commission, Jaques Delors issued a White Paper on "Growth, Competitiveness and Employment" calling for an investment-led development path, including reducing the cost of labour financed by a tax on environmental "bads". As the tide had turned to a more neoliberal point of view based on restricted state activity and the rejection of an expanding welfare state in the member states, the White Book launched in a major conference and revisited a year later never made into practical politics. Instead the Essen summit 1994 decided to emphasise the co-ordination of labour market politics based on enhancing employability and increased flexibility of the labour market, a focus integrated into the Amsterdam Treaty and later on the starting point of the Luxembourg Process. Now, after a "lost decade for social politics" (Romano Prodi), the integration of social, economic and environmental politics is back on the agenda.

The paper can be downloaded at [www.seri.at/backgroundpapers](http://www.seri.at/backgroundpapers).