SERI Annual reports

Annual report 2004

Vienna, 30.5.2005

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Foreword

2004 was a very busy year for SERI.

With this annual report we would like to give you an overview of our activities during the past year: Our work comprises research in our projects but also various publications, presentations at conferences or workshops, and other outcomes. We summarise all activities of the members of the society "Verein zur Förderung eines Sustainable Europe Research Institute" during the past year and hope that you enjoy reading it.

For the Vienna office, the year began in the spacious new rooms in Garnisongasse 7/27 of Vienna's 9th district, just around the corner of our former office in Schwarzspanierstraße. Some new projects were started, some finished and all of them kept us busy during the year. Presently we have 16 employees and work together with interns from various fields. The second half of 2004 was then used to prepare the change of business mode from the sole proprietorship to a limited company. The SERI Nachhaltigkeitsforschungs und –kommunikations GmbH took over all Vienna-based projects in January 2005.

SERI Germany is also well on its way: SERI Bad Oeynhausen was founded in November 2004, now hosting two researchers.

2004 was also the year to begin celebrating SERI's 5th birthday: We started a series of lectures and events on our central themes, to be continued way into 2005.

If you have any questions or just want to know more about us, please do not hesitate to contact us or visit our webpage at www.seri.at, which will be continuously updated. If you happen to be in Vienna, you can give us a call and/or visit us in our new office.

Dr. Friedrich Hinterberger

President, Verein zur Förderung eines Sustainable Europe Research Institute

Vienna, 30.5.2005

Mission Statement

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 a webpage, conferences, and 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.

Contents

Projects (www.seri.at/projects)

New projects

Biodiversity assessment and analysis of pressures on biodiversity (ALARM)

ALARM is essentially a project to improve the instruments for assessing the threat to and the loss of biodiversity in Europe, and on this basis to derive suggestions how to stop the negative trends. 54 institutes from all over the European Research Area will work together for five years including four socio-economic institutes coordinated by SERI (in charge: Joachim Spangenberg and Ines Omann).

The research is structured in four “issues”, representing the main challenges to biodiversity, and in each, one ecological economic institute will collaborate, which is responsible for the socio-economic part of the issue:

- Climate change. Socio-economic partner: SERI.

- Chemicals. Socio-economic partner: Université de Versailles Saint-Quentin-en-Yvelines, C3ED

- Biological invasions. Socio-economic partner: Universidad Autonoma de Barcelona, UAB

- Pollinators loss. Socio-economic partner: Stockholm Institute of Environment Tallinn

In general, the contribution of the socioeconomic team will be to detect the socio-economic reasons behind biodiversity loss phenomena, and to integrate strategies aiming at reducing different kinds of biodiversity pressures into coherent policy orientations.

The specific work on climate change consists of (1) identifying the dramatic socio-economic change that happened throughout the last decades all over Europe and which accompanied the climate change and thus of linking both patterns of changes and detecting the causes for these changes; (2) developing recommendations for political and socio-economic measures to reduce the negative impacts of climate change on biodiversity. For this purpose different climate change scenarios including the socio-economic dimension are defined, based on the existing IPCC scenarios and the scenarios that are defined by the natural scientists throughout the project. These scenarios build the base for model runs that can show the impacts of political measures given different scenarios and trends. These impacts help to underpin the scientific findings in the climate pillar and lead together with the results of the other pillars to recommendations for political reforms.

For further information see www.seri.at/alarm or contact Ines Omann (ines.omann@seri.at) or Joachim Spangenberg (joachim.spangenberg@seri.de)

Best Practice Examples for Product Service Systems (PDL Leuchttürme)

This project is co-ordinated by SERI and 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. 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, www.serviceinnovation.at or contact Mark Hammer (mark.hammer@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 INTELCITY roadmap project (IST-2002- 37373), 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.

Open Systems architecture and adherence to relevant standards will ensure flexibility and futurity of the systems being developed. Integrated Open Systems City Platforms (IOSCPs) will be developed, on which all subsystems (such as development control) will be built. The underlying multidimensional databases will be configured to provide intelligent analysis for users. Thus, the project will go beyond provision of information to provide citizens and city managers with "intelligent environments" that will support new, more inclusive and educational planning processes. This will ensure much more rapid and consensual urban re/development decisionmaking that balances public and private interests. This more agile governance will aid rapid business development whilst enhancing citizens' rights in urban decision-making via advanced visualisation, forecasting, simulation, and sustainability evaluation of re-development proposals.

Within workpackage 11 SERI is responsible for best practice studies concerning urban sustainable e-governance systems as well as for the integration task.

The project is funded by the 6th Framework Programme of the European Union, Section for Information Society Technologies (IST).

For further information please see www.seri.at/intelcities/ or contact Doris Schnepf (doris.schnepf@seri.at)

Workshop series on material efficiency

Aachener Stiftung Kathy Beys

Together with the Aachener Stiftung Kathy Beys (www.aachener-stiftung.de), the Product Life Institute (www.product-life.org), the Wuppertal Institute (www.wupperinst.org) and Triple Innova (www.triple-innova.de) we are planning a workshop series with companies for increasing material efficiency along value-added chains. The aim of the workshops is to share existing knowledge and to initiate actions for increasing material efficiency.

For further information please contact Mark Hammer (mark.hammer@seri.at).

Faktor X Webpage

The Aachener Stiftung Kathy Beys is currently setting up a webpage with background information on factor X and dematerialisation. The page will feature links to institutions and persons working in this field and will provide actual documents for download. SERI is one of the participating institutes of this initiative.

For a link to the page please go to www.faktor-x.info or contact Mark Hammer (mark.hammer@seri.at).

Macroeconomic impacts of policy measures to meet Kyoto goals

On behalf of the Lebensministerium and in cooperation with the Austrian Institute for Economic Research (WIFO), SERI studies the economic impacts of climate policy measures for the Austrian economy regarding the reaching of the Kyoto goal. Since at the time being, Austria has no simulation model (neither CGE nor a macro-econometric multi-sector model), which fulfils the requirements of modeling the impacts of climate policy in a suitable way, first an appropriate model framework must be developed. This model framework is based on existing models of WIFO and will be supplemented with new modules, which are judged to be necessary for investigating the question. Within the project, SERI is responsible for modelling foreign trade and quantifying the CO2 leakage effects.

For further information contact Andrea Stocker (andrea.stocker@seri.at) or see www.seri.at/klimamodell.

Sustainability Science: From Knowledge into Action

Subcontracted from Prof. William Clark, Harvard University. Funded by the David and Lucile Packard Foundation.

An International Science-Practitioner Dialogue on Science and Technology for Sustainable Development will be organized during 2004-2005 and held in 2006 (date and location to be announced). This major meeting will provide a platform for bringing scientists together with policy-makers, resource managers, development specialists, educators, and a wide array of other relevant stakeholders. The Dialogue's goal is to increase radically the quantity and effectiveness of knowledge/action partnerships for sustainability being pursued around the world, and to enhance the world's capacity to establish and implement such partnerships. Discussions will focus on the types of information that are most needed from the S&T community on issues of sustainability, the challenges of linking knowledge to action, the needs for and examples of effective capacity building, the core research questions and research agenda and the institutional requirements needed in all societal sectors to respond to these issues.

This project builds on a workshop held in May 2002 co-organised by the Initiative on Science and Technology for Sustainability (ISTS) (link: http://sustainabilityscience.org/ists), the International Council for Science (ICSU) (link: www.icsu.org) and the Third World Academy of Science (TWAS) (link: www.twas.org). The synthesis report of that workshop "Science and Technology for Sustainable Development. Consensus Report and Background Document" is available on the ICSU and ISTS websites.

Preparations for the Dialogue will be guided by an International Planning Committee. It is planned to issue an open call for panel proposals. Panels should include a mix of scientists (including young scientists), users and practitioners. The Dialogue Secretariat, based at SERI and led by Dr. Jill Jäger, is responsible for all organizational aspects.

For further information see http://www.seri.at/sus_sci/ or contact Jill Jäger (jill.jaeger@seri.at).

Ongoing 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.

In MOSUS, SERI

- develops the European scenarios on natural resource use until 2020,
- coordinates and performs data collection for the material input models for all countries of the world,
- evaluates the different scenarios from an environmental sustainability point of view, and
- derives overall policy recommendations based on the modelling results.

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 or contact Stefan Giljum (Stefan.Giljum@seri.at).

Sustainability strategy: 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, 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 and www.sustainability-strategy.net or contact Joachim Spangenberg (joachim.spangenberg@seri.de).

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

The aim of the 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, 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. (3) 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.

Currently we work on the scenarios and criteria for both levels. The first workshops of the participatory process will start in February 2005.

For further information please see www.project-artemis.net or contact Ines Omann (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 EU member states. By organising a series of workshop and conferences on selected issues in the field of trade and the environment, CAT&E aims to enhance the debate between relevant research centres and between science and 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
- 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 or contact Stefan Giljum (stefan.giljum@seri.at).

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

The project analyses natural, economic, discursive, and spatial aspects of sustainable development for the metropolitan regions of Hamburg, Vienna and Leipzig. We will present methodological facets with an emphasis on the method of Material Flow Analysis (MFA) and how discourse analytic approaches can be applied in connection with this method of accounting for physical flows of the economy. One of the main research questions of the project is: how do we get from ideas and concepts to policy and, finally, to material effects on the environment? In order to understand the links involved here, the project combines methods that focus on the economic and biophysical side of our society (material consumption, landuse) and methods that focus on social aspects (discourses and networks).

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 MFA for the three regions.

For further information see www.seri.at/neds, www.neds-projekt.de or contact Mark Hammer (mark.hammer@seri.at).

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

SERI is a partner in the project “e-System for Real Time Democratic Land-Use Planning of Urban Environment - Pilot Action in Narva Community (Estland)” eCommunity (funded by the EU LIFE programme) 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 will help raising public awareness. The results in spatial planning and policymaking processes at a local level should be usable in other European cities. The final goal of the project is to demonstrate a system as a tool for urban planning in the EU.
SERI’s tasks in the project:

- monitor the project deliverables with 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 started in September 2002 and will end in August 2005.
In August 2004 SERI conducted interviews with the administration in Narva for analysing the current state of eGovernance and participation in the City. Results of the interviews about participatory issues, technical contents of the existing planning website, expectations for the new eCommunity tool, information about multiplying stakeholders and most important topics of the town were collected and analysed. The results are a basis for the training sessions conducted by our project partners in Estonia, and will be presented at the CORP2005 conference.

For further information see www.seri.at/ecommunity or contact Doris Schnepf (doris.schnepf@seri.at).

www.nachhaltigkeit.at

The Austrian sustainability website of www.nachhaltigkeit.at has been extended. 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 in the past year (texts are available in German only):

January 2004 – European Research Area (ERA) and sustainability

The concept of the ERA is explained, its embedding in the goals of the EU, as well as the contributions sustainability-oriented research can make and will have to make in order to realise this concept over the next decades. The challenges of the gap between market-driven global competition in research and the goal of research for sustainable development are discussed. Austrian sustainability research programs and initiatives with a European focus are also portrayed.

March 2004 – Governance and sustainability

New governance models for sustainable development are currently being discussed in academia and politics. This topic of the month deals with the question what governance is all about, which concepts are theoretically discussed, and what practical examples exist. Furthermore, we summarise local and regional governance concepts as well as concepts on the European and the global level.

August 2004 – Export potential sustainability

The goal of raising exports in order to promote economic development as stated by the Austrian Government can be compatible with requirements of sustainable development, if focus is put on export of sustainable products (e.g. organic food) and sustainable technologies (e.g. alternative energy provision). We define general criteria for sustainable exports and summarise existing Austrian initiatives to promote the reconciliation of export growth and sustainability.

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

Developing a Product Service System Methodology (MEPPS)

SERI was 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.

The project deals with 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 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 or contact Mark Hammer (mark.hammer@seri.at).

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

In cooperation with the Austrian newspaper “Der Standard”, 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).

Finished projects

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 advancing very fast worldwide – 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 the interpretation that ICT may be the crucial tool for developing countries to approximate to industrialised countries very fast in their development process. Nevertheless, if ICT are not used in a wise manner, they will contribute to broaden digital divides between those who already have the possibility and capability to use them and those who have not.

In this study we determined the state of the art of ICT in Latin-America with focus on Chile, Bolivia and Peru. We looked into existing indicators, able to compare digital divides within the countries and on a global level. Special interest was given to those indicators assessing social and especialy gender digital divides.
The problem of many of such indicators is the “western” driven spirit of them. Often existing indicators are not able to describe the situation according to the needs of the latinamerican people.

Within this study we made interviews with some stakeholders in the 3 countries to adapt existing ict indicators to better reflect the situation and needs of latinamerican countries. Special focus was given on indicators to reflect the gender digital divide situation.

The project was funded by the ministry of foreign affairs in order of the VIDC.

For more information please contact Doris Schnepf (doris.schnepf@seri.at).

Consumption and the Environment in Europe: Trends and Futures

This 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 sought 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 analysed the forces shaping consumption. It focused especially on social and cultural influences, which are poorly addressed in conventional policy analysis. Finally the study reviewed outlooks for consumption and the environment to 2030. It drew 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.

The study was funded by the Danish Environmental Protection Agency and contributed to a larger project of the European Environmental Agency.

For further information see www.seri.at/consumption or write to Sylvia Lorek (Sylvia.lorek@seri.de).

„Integrating Sustainable Consumption into Sustainability Strategies“

In co-operation with Agenda Agentur Berlin the SERI consumption office developed a matrix to integrate the aspect of sustainable consumption into the (German) sustainability strategy. Taking the consumption of organic products, space heating and aviation as example the matrix shows how a successful interaction of stakeholders could look. The Matrix was prepared on behalf of Friends of the Earth Germany (BUND).

The study can be downloaded from www.seri.at/Data/themes/consumption/matrix_lebensstile.pdf.

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

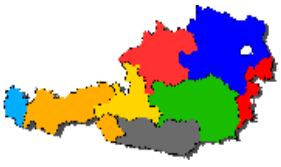
After the Johannesburg World Summit on Sustainable Development 2002 the Republic of Kazakhstan decided to intensify its work towards sustainable development by introducing a set of sustainability indicators for process monitoring and to set up a council on sustainable development to provide a platform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

The process was technically and financially supported by UNDP, which contracted Joachim H. Spangenberg as an 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.

With the project end in 2004, 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).



Modelling Sustainable Development in Austria

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

Sustainable Development demands 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 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 was funded by the Austrian ministry for agriculture, forestry environment and water management.

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

Upcoming projects

MATISSE

SERI is a core partner of this Integrated Project funded under the 6th Framework Programme of the EU and due to begin in early 2005. The objective of MATISSE is to achieve a step-wise advance in the science and application of Integrated Sustainability Assessment (ISA) of EU policies. In order to reach this objective the core activity of the MATISSE project is to improve the tool kit available for conducting Integrated Sustainability Assessments.

The project is structured around four main project activities:

1. A common conceptual framework for ISA development, implementation and evaluation will be developed. The framework will be related to the assessment of the current status of ISA and its pattern of use in relation to different domains and contexts. This includes the institutional factors that play a key role at the science-policy interface;
2. MATISSE will deliver a future tool portfolio for ISA. It will improve and interlink existing tools and methods for ISA with the focus on quantitative tools. In addition, new methods and tools will be developed that capture the multi-domain, multi-level and multi-actor complexity of ISA.
3. In four case studies the improved and new ISA tools will be applied and tested. The case studies are designed to cover the broad spectrum of domains and contexts of ISA in the EU. The themes are: i) agriculture, forestry and land-use, ii) resource use, waste and dematerialisation, iii) water, and, iv) sustainable environmental technology development.
4. The involvement and engagement of stakeholders and policy makers will be secured throughout the project. Activity four covers the crosscutting capacity-building, communications and outreach tasks.

The consortium consists of 20 partners and the project is scheduled to run for three years.

SERI will be involved in activity 4, ongoing internal communication within the project, and in two of the case studies.

For more information please contact Jill Jäger (jill.jaeger@seri.at).

PASARELAS

The PASARELAS network, funded by the EU's INCO program for international research co-operation will focus on information exchange around issues of how to develop tools (e.g. indicators) for sustainable development while explicitly taking into account a situation of uncertainty and unavoidable ignorance. SERI will contribute apers and discussion elements to workshops to be held 2005 in Corsica and Dakar, and probably 2006 in Santiago de Chile and in a place still to be determined in East Asia. The project is coordinated by Martin O'Connor at the C3ED research centre of the Université de Versailles Saint-Quentin-en-Yvelines; the SERI contribution will be prepared by Joachim H. Spangenberg (Contact: Joachim.Spangenberg@seri.de).

Collaboration Agreement with EOI Escuela de Negocios

In July 2004 SERI and EOI Escuela de Negocios, a recognised Spanish business school and pioneer in environmental management training, signed a collaboration agreement that will enhance the pursuit of common objectives in training and research. In 2005 SERI will provide a teaching module on sustainability in the productive sector for the “International Master in Sustainable Development” recently launched at EOI Escuela de Negocios. A Joint Committee will be set up to plan and monitor additional collaborative activities in the future.

For further information please contact Friedrich Hinterberger (friedrich.hinterberger@seri.at).

Development of GEO Training Modules

The Global Environment Outlook (GEO) is the flagship product of the United Nations Environment Programme (www.unep.org). The next GEO will be published in September 2007, 20 years after the Brundtland Report “Our Common Future”. It will review the state of the environment, environmental policy and scenarios for the future in the context of sustainable development.

A parallel activity to the process of producing the GEO reports is capacity building. During 2005 a training manual will be produced and tested under the leadership of the International Institute for Sustainable Development, Canada. Using this training manual, instructors will be able to guide people to develop national GEO processes. Jill Jäger, SERI, is leading the development of the training module on scenarios and the training module that provides an introduction to the GEO process and the general area of integrated environmental assessment. She is also contributing to the module on developing an impact strategy.

For more information please contact Jill Jäger (jill.jaeger@seri.at)

Events

5 years SERI

In autumn 2004 SERI celebrated its fifth birthday. We started a series of events on the major topics that constituted our work for the past years. The events will take place at different places. Each event will be of a different character and will be accompanied by a cultural/musical surrounding. The first two events – a plenary discussion on the topic of eco-efficiency and an interactive workshop on the topic of responsibility – took place in Vienna. Further events in Vienna, Brussels, Lisbon, Cologne, and Berlin are planned.

For further information see www.sustainableeurope.net or contact Mark Hammer (mark.hammer@seri.at).

SERI Brownbag Seminars

In 2004 continued the SERI brownbag seminar series.

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

January 2004

Mark Hammer on "Sustainable development between Throughput and Symbolism" (NEDS): The project analyses the development of three European regions (Hamburg, Leipzig, Vienna) during the past ten years. Different scientific approaches like material flow analysis (MFA), discourse analysis or structural analysis are combined. In the brownbag seminar results for the MFA of Hamburg were presented. The following questions were raised: What can we learn from regional MFA? How can we link such different approaches like discourse analysis and material flow analysis? What will we gain from this combination?

February 2004

Stefan Giljum on "Modelling opportunites and limits for restructuring Europe towards sustainability (MOSUS)" and the "Concerted Action on Trade and Environment": MOSUS applies an integrated ecological-economic simulation model to quantify the interrelations between socio-economic driving forces and the state of the environment. The analysis uses a multi-country, multi-sectoral macroeconomic framework, including trade flows within Europe and between Europe and all other world regions. The model will be the first such tool to integrate directly comprehensive biophysical data (materials, energy, and land use data) in simulations to the year 2020, putting them in relation to indicators of social and economic development. MOSUS will formulate EU development scenarios and evaluate the economic and social impacts of key environmental policy measures and will present quantified policy recommendations for implementing sustainable development in the EU. As international trade relations play an important role in MOSUS, links to the Concerted Action on Trade and Environment (CAT&E) were highlighted in this brownbag seminar.

March 2004

Doris Schnepf: 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 leads to the conclusion 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 is whether ICTs really have the capacity to support Chile on its way to a sustainable society and competitive economy. The second question is if and how it is possible to assess the existence of the so called gender digital divide with the help of existing indicators.

May 2004

Ines Omann on ”The application of multi-criteria decision aid (MCDA) in the case of car road pricing in Austria”: The implementation of car road pricing is one option to lead the transport in Austria towards a more sustainable direction. Road pricing can be implemented in different ways depending on the assessment criteria, the charged roads, the tariff etc. Depending on the design, different objectives can be reached. In this brown bag seminar a case study was presented, in which an MCDA (using the PROMETHEE method) was applied in order to rank a set of road pricing scenarios according to the objectives of sustainable transport in Austria and given the preferences of stakeholders

June 2004

Joachim Spangenberg on “ The Sustainability of the economic sector: Concepts, Criteria and Indicators”: Every society comprises four dimensions: economic, social, environmental and institutional. Each of them is a complex, dynamic, self-organising and evolving entity in its own right, making the coupled system one of tremendous complexity. For this system to be sustainable, each of the four subsystems has to have the capability to maintain its ability to survive and evolve, and the interlinkages of the subsystems must enable a permanent co-evolution. For adequate analysis and prognoses – or at least to avoid wrong ones – the appropriate level of complexity for descriptions and models has to be found.

As this level of complexity is beyond the scope of current economic theories, a system analysis perspective was presented as a framework for discussing the co-evolution of economy and society. In this context, the economic, social, environmental and institutional sustainability of the economy can be described. In a further step, economic theories could be assessed regarding the usefulness for the description of a complex evolving system like the economy.

In this case, an appropriate theoretical approach is system analysis of complex evolving systems. However, there are few applications of this rather abstract theory to economic systems so far, and before using it for analysing the sustainability of economic development processes, sustainability must be defined for complex evolving systems. The latter is the raison d’être of Orientor or Orientation Theory, providing the means to assess the sustainability of the economic system, albeit still on a rather abstract level. The question is whether suggestions from economics and sustainability models are suitable in the more complex setting they have not been designed for or derived in.

September 2004

Jürgen Schäfer: Talk and discussion on the implementation of sustainability in the European constitution. By Jürgen Schäfer (SERI and University of Duisburg-Essen, in German language).

October 2004

Mark Hammer on “Sustainable Product Service Systems (PSS)” in this brownbag seminar we discussed two of SERIs research projects both dealing with sustainable product service systems.

The Austrian “PSS landmarks” project will identify best practice examples of such systems. Case studies will be collected and evaluated. Factors of success and failure for the implementation of sustainable PSS will be worked out.

The second project (MEPSS – Product Service Systems Methodology) develops a methodology for the implementation of PSS. SERI is a member of the scientific peer review group in this EU project.

In the brownbag seminar we discussed the following questions: Can PSS contribute to sustainable development? If yes, how can we help to promote sustainable PSS? Do we need a better name instead of PSS?

November 2004

Andrea Stocker on “Modelling Sustainable Development in Austria”: In Austria no adequate macro-economic model for integrated sustainability analysis exists so far, but is urgently needed. Existing empirical models with the requirement of modelling sustainability concentrate usually on partial aspects and/or partial analysis (e.g. to climatic policy, to sustainable consumption, etc..) and often it is not clear, by which model characteristics sustainability – and in particular its equal standing of economic, ecological and social aspects - is illustrated. In this sense substantial research is needed in the area of modelling sustainability (not only in Austria).

December 2004

Sybille Bauriedl and Matthias Winkler (NEDS-Projekt, Hamburg) on “Transformation of land use patterns in the Metropolitan Region of Hamburg”. In the course of global processes of socio-economic transformation, simultaneous processes of change in connection with spatial structures are taking place. Structure analysis as a quantitative geographical method based on cartographic visualisation allows the description and analysis of spatial transformation by focussing on land use patterns and tendencies of change. The NEDS Research Project applies this method to the Metropolitan Regions of Hamburg and Vienna and the Region of Leipzig. The structure analysis for Hamburg illustrates considerable tendencies of diffusion and suburbanisation especially in the further hinterland, which are connected with both a partial decrease of population in the agglomeration core (processes of shrinking) and the rise of smaller regional centres (processes of growth). In addition, the results indicate that "classical" instruments of regional planning are apparently not suitable for steering the spatial development/expansion of housing and traffic infrastructure. Empirical results cannot verify that the frequently discussed strategy of de-linking the population growth from the growth of sealed soil surface is successful.

Dr. Friedrich Hinterberger on “The main components for a sustainable development“. Even if there is an agreement about what sustainable development means (say: a significantly decreased use of resources and a crucial reduction of poverty and inequality), different approaches set very different focal points: eco-efficency, a Global Marshall Plan, a reform of the fiscal system, eco taxes, new life-styles, etc. In this brownbag seminar we discussed what the main bricks of a comprehensive system of strategies, measures and instruments for a sustainable development could be, how they fit with each other and which questions are still open.

For further information see www.seri.at/brownbag or write to Gabi Christler (gabi.christler@seri.at).

Participation in workshops and conferences

Workshop on Eco-efficiency and Sustainability

Within the Jubiläumsfondsproject “Eco-efficiency and Sustainability” Andrea Stocker organized a workshop in cooperation with Prof. Mikulas Luptacik (WU Wien) on 10 December 2004 in Vienna. Friedrich Hinterberger participated in this workshop and presented SERI’s ideas on dematerialization and labor. Andrea Stocker presented the results of the project. Further information is available at www.seri.at/scenarios/wu-workshop.

DIW (German Institute for Economic Research) workshop on the economic role of private households

Sylvia Lorek and former SERI volunteer Matthias Deutsch participated in a DIW in Berlin on 9 January 2004 workshop to identify research needs in economics on the role of private households in sustainable development. The meeting followed the guiding questions: In how far can economic research on private households - that goes beyond their role as consumers - contribute to explaining household decisions and behavior in the context of sustainable development? What conclusions for policy design with respect to "sustainable household behavior" can be drawn from the discussed research approaches?

For further information see www.sustainabilityeconomics.de/workshops_future.html or contact Sylvia Lorek (sylvia.lorek@seri.de)

Ethik und Nachhaltigkeit

SERI participated in the symposium “Sustainable Leadership – Spirit in Business”, mainly organised by the worldwide association “Spirit in Business”. It took place from 30.01 2004 until 01.07.2004 at the “Industriellenvereinigung” in Vienna.

The aim of the symposium was to reflect on the current crisis in public and business leadership degrading confidence, value and markets and the emerging need for leaders who operate daily from their internal compasses, inspiration and inner values.

The role of ethics and spirituality towards sustainble leadership was discussed.

Doris Schnepf and Fritz Hinterberger held a workshop on the topic “ethics and sustainable Development– a scientific view”.

A CD-ROM and a DVD containing the results of the symposium were produced. The presentations as well as other information about the symposium and related activities can be downloaded at: www.ethikundnachhaltigkeit.info and http://members.aon.at/baumoste/Spirit04/.

For more information please contact Doris Schnepf (doris.schnepf@seri.at)

Limits of growth for the city of Hamburg

At the event “Limits of growth for the city of Hamburg”, organised by the Zukunftsrat Hamburg on 13.2.2004, SERI presented results on the material flow analysis of the city of Hamburg carried out in the course of the NEDS project.

The presentation can be downloaded from www.seri.at/neds. For further information see also www.zukunftsrat.de or mail to Mark Hammer (mark.hammer@seri.at) or Stefan Gilijum (stefan.giljum@seri.at).

MOSUS Scenario Meeting

The 2nd internal meeting of the MOSUS project took place in Osnabrück, Germany, from March 8-9 2004. The consortium agreed on the final steps towards the preparation of the three integrated scenarios and discussed details on the integration of environmental data into the economic simulation model. See our updated internal MOSUS website at www.seri.at/mosus and the official project website at www.mosus.net for more details and downloadable background documents.

ALARM project Kick-off

The ALARM project, bringing together 54 of Europe's leading research teams on biodiversity, started. SERI as coordinator of the cross-cutting socio-economic (SE) module took part in a series of kick-off workshops of the project's four natural science modules (Climate, Chemicals, Invasions, Pollinators) and organised its own module kick-off meeting for the socio-economic team (SERI, UAB, C3ED Versailles, SEI Tallinn) in April 2004 in Barcelona. This was followed by further socio-economic team meetings in Tallinn in September and in Mallorca in November. Furthermore, in our capacity as the socio-economic expert institution within the climate pillar of the project, SERI was actively invoilved in climate working group, and by participation in another cross-cutting grouping, the scenarios working group.

In the meantime, the SE team has produced an introductory poster, a number of draft scenarios, a series of thematic briefing sheets and a number of discussion papers; most of these will be accessible via the public part of the project homepage.

The first general meeting of the whole ALARM consortium took place in November in Palma de Mallorca. All 54 partners participated to present their work done so far and their plans for the first 18 project months.

CAT&E: 2nd Open Conference

The 2nd Open Conference of the Concerted Action on Trade and Environment (CAT&E) on "Trade, Environment, and Development: the North-South Dimensions" took place in Amsterdam from 1-2 November, 2004. SERI was represented by Stefan Giljum, who presented a paper on "North-South trade and global patterns of natural resource use: implications for governance of trade and the environment". Paper and presentation can be downloaded from www.seri.at/cate. For more information on CAT&E see also www.cat-e.org.

ConAccount Meeting 2004. A future research agenda for MFA - Towards a new common ground for research on sustainable resource use

The meeting in Zurich (10-12th of October) which was jointly organized by ConAccount and the Institute for Spatial and Landscape Planning in association with the International Society for Industrial Ecology discussed current issues in material flow research. The main tasks of the meeting were to find a common denominator in the MFA community, to discuss how to integrate MFA into other scientific disciplines and to find out how MFA can contribute to sustainable resource management.

Members from SERI presented three papers at this event.

- Stocker, Andrea: Modelling Resource Use of the Austrian Economy with Input-Output Analysis
- Stefan Giljum, Mark Hammer, Friedrich Hinterberger, Jan Kovanda and Samuel Niza: The material basis of the global economy - Presentation of data and implications for sustainable resource use policies in North and South
- Mark Hammer, Stefan Giljum, Friedrich Hinterberger: Metropolitan regions as models for the service economy - Material flow analysis for the cities of Vienna and Hamburg and hypotheses on material consumption in the future service economy

For abstracts and downloads of the presentations visit www.seri.at/conaccount2004 or the conference webpage: www.irl.ethz.ch/conaccount/index_EN.

Project workshop at the European Roundtable on Sustainable Consumption and Production.

In the course of our current project on product service systems ("PDL Leuchttürme") a workshop with international experts on product service systems was held in Bilbao on 12-14 May. The workshop helped to identify outstanding examples of product service systems and important factors for failure and success in their implementation.

For further information see www.seri.at/leuchttuerme or www.erscp2004.net

2nd International Conference - Thematic Network on Sustainable Product-Services (SusProNet).

Mark Hammer presented the PSS landmarks project and results from the sustainable PSS project at the Conference of the product/service-design network SUSPRONET, which took place from 3rd to 4th of June in Brussels, Belgium.

For further information see the project web pages (www.seri.at/INES and www.seri.at/leuchttuerme) and the conference webpage (www.suspronet.org/fs_confdocs.htm).

Thematic Network Sustainability Strategy: Conference on "The EU Sustainability Strategy Under Stress. State of the Art, Perspectives, Alternatives" and Vienna Workshop on "Multi-level governance"

The European-wide "Thematic Network" of research institutions working since May 2003 on the sustainability strategy of the EU held its first yearly conference in Berlin from May 12 to 15 with the title "The EU Sustainability Strategy Under Stress. State of the Art, Perspectives, Alternatives". Fritz Hinterberger presented the Austrian stand and strategies for sustainable development. The whole conference was live webcasted by Sustainability.TV and will also be soon available for download in form of video files. Check www.sustainability.tv for more information.

The Thematic Network held its 4th workshop from 18-19 March at the Technical University in Vienna. In the course of the workshop SERI organised a panel discussion at the "Industriellen-Vereinigung" on 18 March with several Austrian stakeholders. Questions about multi-level governance regarding the Austrian Sustainability Strategy were discussed.

Information about the workshop and the panel discussion can be found at www.sustainability-strategy.net.

Expert workshop on Material Efficiency. German Federal Ministry of Economics.

Mark Hammer joined the first expert workshop on eco-efficiency organised by the German Federal Ministry of Economics on 22 June in Berlin. For further information see www.materialeffizienz.de/fachgespraech or contact Mark Hammer (mark.hammer@seri.at).

Conference of "Economy and environment: total economic value and ecological footprints"

Stefan Giljum presented the MOSUS project at the conference on "Economy and environment: total economic value and ecological footprints", which took place on 31st of May in Gijon, Spain. More information on the MOSUS project is available at www.mosus.net. More information on the conference can be found at www.economiaymedioambiente.tk.

Sustainability Workshop in Moscow

On February 9th to 12th Joachim H. Spangenberg represented SERI in a workshop in Moscow, organised by the Rosa Luxemburg Foundation in collaboration with the Russian Academy for Public Service under the President of the Russian Federation. In the discourse it became quite obvious that

there is a significant communication gap, and that many recent works from sustainability science and ecological economics are not known in Russia, and that vice versa the Russian research on sustainability, the interaction of natural and social phenomena and the noosphere concept have not received the attention they deserve in the English speaking world. Fundraising for a follow-up workshop in Moscow and for a more systematic exchange has begun and looks promising.

For more information contact Joachim Spangenberg (joachim.spangenberg@seri.at).

German Conference on Sustainable Consumption and Production

Based on the "10-Year-Framework of Programmes" launched in Johannesburg the German Ministry for the Environment, Nature Conservation and Nuclear Safety and the Federal Environmental Agency hosted a National Dialogue Conference on Sustainable Consumption and Production in February. Over 250 persons participated with a balanced share of scientists, representatives from civil society, business and administration. The outcome will be followed up by smaller meetings looking for concerted actions on specific issues. Joachim Spangenberg and Sylvia Lorek participated in the meeting and will be glad to give further information.

For more information please contact Sylvia Lorek (sylvia.lorek@seri.de).

Workshop on “Barriers and Driving forces for Sustainable Consumption”, co-organized by SERI Member Sigrid Stagl

From 5 - 6 March 2004 over 60 scientists from Australia, Japan, Europe and the USA participated in a workshop to identifiy “Barriers and Driving Forces for Sustainable Consumption”. It was held in Leeds, UK, and co-organised by SERI-member Sigrid Stagl. Proceedings are available at www.env.leeds.ac.uk/~hubacek/leeds04/Proceedings.pdf. Sylvia Lorek presented one paper on strategies to spread more sustainable products from niche to mass markets, Joachim Spangenberg one on the institutions for sustainable consumption governance in Agenda 21. Both presentations and papers are available from SERI or from the authors (sylvia.lorek@ seri.de and joachim.spangenberg@seri.de). The workshop was the third European conference in a series of conferences initiated within a 3-year programme on sustainable consumption from the Society of Non-Traditional Technology, Japan. The next conference was in Tokyo in October 2004.

Perspektivenkongress in Berlin

Ines Omann and Joachim H. Spangenberg attended the Perspektivenkongress in Berlin from 14 to 16 of May. The aim of the congress was to develop and discuss perspectives and strategies for a policy alternative in Germany. Main subjects were how to reduce the current unemployment, to increase the life quality including the environmental quality, and to reduce the public deficit. Ines Omann was one of the discussants in the panel "Employment and economic growth" on Saturday morning (for more information about the congress see: www.perspektivenkongress.de). Her presentation can be downloaded at www.seri.at/Data/personendaten/io/Kurz_Perspektiven_Berlin_Mai2004.ppt. Joachim gave one lecture on labour and sustainable development, and took part in a panel on the future of growth politics, with representatives of science, NGOs and trade unionists.

Sustainable Consumption Conference, Tokyo

The Japanese sustainable consumption research program is close to ending its current phase and tries to prepare a new research agenda for their future work. Joachim H. Spangenberg and Sylvia Lorek were invited to present the SERI research agenda at this conference in Tokyo.

DBSA Knowledge Week, Johannesburg

Following a presentation of the SERI work on sustainability and economic growth at the Dia de Trabajo at the Barcelona Forum des Culturas, Joachim H. Spangenberg was invited to reflect on policy priorities beyond a simple growth orientation at this event, organised by the Development Bank of Southern Africa from November 1st to 5th. The strategy unit of DBSA, the largest investor in regional

development in South Africa and all neighbouring countries, suggested to enter an official partnership with SERI – we will wait and see if that materialises.

International Sustainable Development Research Conference Manchester

At the 10th in this annual series of conferences, Joachim H. Spangenberg gave a presentation about the policy frameworks for sustainable development, elaborating on the prospects after the decline of neoliberalism and the rise of neoimperialism.

Sustainable Knowledge Society Workshop, Stockholm

Two years ago, a number of SERI authors published a paper on indicators for a sustainable knowledge society in a Finnish journal. Researchers from the EU funded Baltic Palette Project had used these in their research work and invited us to discuss our concept in relation to their empirical work. Joachim H. Spangenberg had the opportunity to participate in a highly interesting discussion and to give a lecture on the sustainability potential of the information society during the workshop from 26-27 April.

ASI: Gloal Sustainability Indicators Workshop, Prague

Hosted by the Charles University and organised by SCOPE, a group of experts from four continents, plus international organisations like UNDP, OECD, EEA and others met from 10-14 May 2004 in Prague to discuss the state of the art regarding sustainability indicators and indicator systems. The outcome strongly encouraged us to proceed on the path we have pursued in the past years, systematically deriving indicator systems with a limited number of indicators and developing adequate modes of presentation, but neither to suggest extensive indicator lists nor aggregation into one index. Joachim H. Spangenberg represented SERI; a bried summary of the results can be obtained from him (Joachim.Spangenberg@seri.de); the conference proceedings will be published by SCOPE in spring 2005.

SERI @ ISEE Montréal 2004

The 8th Biennial conference of the International Society for Ecological Economics, which took place in Montréal, Canada from 11-14 July 2004, focused on challenging boundaries in economics, ecology and governance. SERI members Fritz Hinterberger, Ines Omann, Joachim Spangenberg, Stefan Giljum, Fred Luks and Sigrid Stagl gave a number of presentations in different sessions of the conference. In addition, SERI organised two special sessions with the title “Governance for Sustainable Development: Perspectives from Europe”.

All presentations and papers are available for download at www.seri.at/isee2004.

For details on the “Governance for Sustainable Development” sessions see www.gosd.net/isee2004.

Communication

Serviceinnovation

Together with the Institute of Sustainable Techniques and Systems (JOANNEUM RESEARCH, Graz), the Institute for Environmental Management and Economics (IÖW, Vienna) and the Austrian Ecodesign Plattform (Vienna) SERI relaunched the webpage www.serviceinnovation.at, an Austrian internet portal on sustainable product service systems and service solutions.

For further information see www.serviceinnovation.at or contact Mark Hammer (mark.hammer@seri.at).

Publications (www.seri.at/publications/)

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. 3 (June 2004):

João Rodrigues, Stefan Giljum. The accounting of indirect material requirements in material flow-based indicators.

One important question in the field of Material Flow Accounting (MFA) is the accounting of indirect material flows, via an appropriate indicator and computation methodology. Several indicators and computation methodologies are currently in use, which complicates the articulation and comparison between different empirical studies. In this paper we present an input-output model that puts different MFA indicators in a common framework. We present a methodology for the computation of MFA indicators that assigns indirect material requirements to economic flows and is valid at both the macro and the micro levels. We argue that our socio-economic methodology is superior to purely physical approaches because it avoids methodological problems connected with physical input-output analysis, requires less problematic data acquisition and is theoretically more satisfying. From our model a new indicator arises, Total Material Production (TMP), a counterpoint to the familiar indicator of Total Material Consumption (TMC). TMC and TMP are the only indicators (of those discussed) that account for indirect material requirements and are additive.

The paper can be downloaded at 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.

The papers can be downloaded at www.seri.at/backgroundpapers.

Background Paper No. 4 (March 2004):

Doris Fuchs, Sylvia Lorek. Sustainable consumption: political debate and actual impact

This paper explores the prospects for global sustainable consumption governance. Analyzing developments in this area since the Rio Summit and Agenda 21, the paper highlights that core actors and efforts have neglected essential parts of a sustainable consumption governance strategy. While they focus on the efficiency of consumption, questions regarding the sustainability of consumption levels and necessary fundamental changes in consumption patterns in industrialized countries have been neglected on the official agenda. The paper traces this development through the work of the major IGOs engaged in developing sustainable consumption governance. Therefore it mainly reflects preparations and results of the Johannesburg summit. The paper briefly delineates the alignment of interests of core actors in the sustainable consumption arena against substantial progress in the development of governance strategies. In the course of this task, the paper argues that "globalization" and "global governance" with their respective influences on the relevant actors strengthen rather than weaken the forces supporting overconsumption. In the end, the paper asks, but cannot answer, the question how global sustainable consumption governance can and will be achieved. Thereby it hopes to create a new impetus for in-depth scholarly and societal debates about strong sustainable consumption.

Background Paper No. 5 (März 2004):

Friedrich Hinterberger, Andrea Stocker. Arbeitsplätze schaffen durch Dematerialisierung: eine integrierte Strategie.

Unemployment, global inequality and threatening environment disasters have common causes and have therefore to be mastered together. The paper argues that with resources tax, reduction in working hours and a negative income tax (“Grundsicherung”) a set of political instruments is available, which support the solution of the coherent problems of economic growth, unemployment and environmental degradation.

Background Paper No. 6 (April 2004):

Ursula Wolf. Mischarbeit in Österreich und Deutschland.

This publication deals with "Mischarbeit" (mixed work) in Austria and Germany. "Mischarbeit" is defined on relations between paid and unpaid work, for example homework, care and honorary work. This publication explains various forms of paid and unpaid work and it explains by examples relations and reciprocities of these forms. Furthermore this publication considers legal regulations in Germany and Austria and it describes some starting points for financing this concept.

Background Paper No. 7 (May 2004):

Arno Behrens. Environmental policy instruments for dematerialisation of the European Union.

This paper deals with environmental policy instruments designed to reduce the material input of European economies.

Following some introductory paragraphs on dematerialisation and policy instruments in general, the main part of this paper deals with specific instruments for policy-makers to pursue a dematerialisation strategy. As a start, instruments that support voluntary behavioural changes are presented. They include the design of a clear concept of dematerialisation that needs to be publicly communicated; the provision of information to all involved actors on how to comply with that concept; the development of adequate resource-management systems in order to reduce material requirements of products over their whole life-cycle; as well as the provision of environmentally relevant education on all levels. This section also features ownership rights and cooperation between actors as well as an extensive part on voluntary environmental agreements. The second section deals with economic instruments and the incentives for economic agents to reduce material input associated with them. Subsidies, taxes, certificates, and public procurement are discussed in this section. The third section covers some aspects of regulatory policies. It is followed by some concluding remarks, stressing the need for an appropriate mix of instruments in order to put the concept of dematerialisation into practice.

SERI Studies

SERI Studies

SERI Studies is a series of in-depth reports from our projects, devoted to one of SERI's research fields

SERI Study No. 1 (May 2004):

Stefan Giljum, Mark Hammer, Friedrich Hinterberger. Resource use scenarios for Europe in 2020.

This study summarises the research undertaken in the work package "resource use scenarios" of the EU-funded "MOSUS" project. We present three main scenarios for resource use in Europe up to the year 2020. The *baseline scenario* projects further trends observed between 1980 and 2003, if no particular sustainability-oriented policy strategies and instruments are put into force. The *weak sustainability scenario* reflects sustainability policy goals and measures derived from strategic documents of the European Community, such as the 6th Environment Action Programme and the Sustainable Development Strategy of the European Union. The *strong sustainability scenario* defines policy goals and instruments, which are more ambitious from the point of view of sustainable development compared to those included in the EU documents. In the two policy scenarios, we analyse key economic sectors responsible for the major part of resource use in Europe and suggest sector-specific policy targets, strategies and instruments, which should be accomplished by environmental policy measures on the macro-level.

The papers can be downloaded at www.seri.at/studies/

SERI Study No. 2 (June 2004):

Sylvia Lorek. Household energy and water consumption and waste generation. A German case study

Household energy use, water consumption and waste generation are three areas of household activity that are particularly important for the environment. This *Sector Case Study on Household Energy and Water Consumption and Waste Generation* analyses the consumption patterns, trends in these areas and their related environmental impacts in Germany. The Report also identifies and analyses some policies that have been implemented in some countries to promote sustainable consumption patterns.

This study analyses the driving forces shaping energy and water consumption and waste generation patterns. There are several key driving forces behind consumption, including, for example, economic growth and growing per capita disposable income, lifestyles, demographic trends and cultural values. Combined with other influences on consumption patterns, such as existing technology and infrastructure, the policy framework in place, available products, environmental awareness and information, all these driving forces help determine the environmental intensity of consumption patterns. Understanding the drivers behind consumption provides new insights for the design and implementation of more effective policies for sustainable consumption. It also helps to determine the relative emphasis that should be given to different types of instruments (economic, regulatory or social).

Theses (www.seri.at/students)

Omann, I. (2004). Multi-criteria Decision Aid as an Approach for Sustainable Development Analysis and Implementation, PhD Thesis. University of Graz.

Sustainable development is currently acknowledged as being a possible basis for solving life-threatening problems, such as overpopulation, climate change, water scarcity, or loss of biodiversity. These problems occur in complex natural and socio-economic systems, characterised among others by self-organisation, dynamism and irreversibility. Helping these systems move to a sustainable path, i.e. solving the existing problems, requires specific action, e.g. well designed, targeted policy measures. The implementation of such measures is in general preceded by various research and

decision processes. Owing to the special characteristics of the systems addressed and those of sustainability itself such decision processes face a number of challenges.

Decision support approaches can be a means to meet those challenges. Specific evaluation requirements can be derived in order to examine the appropriateness of such approaches in terms of their supporting the implementation of sustainability. These requirements are developed to capture the nature of complex systems, the principles of sustainable development and the procedure of decision making.

As the aim of the present thesis is to evaluate the potential role of multi-criteria decision aid (MCDA) for decision processes aiming at sustainability, the defined evaluation requirements are used as criteria to test the appropriateness of the MCDA on a theoretical and empirical level. MCDA represents one form of decision aid, which can be very helpful in preparing the decision by revealing the decision context and the possible impacts of specific decisions. Two case studies, one on company level, and the other on the level of public policy making, were carried out as a basis for empirical research. The first case study is a multi-criteria evaluation of product service system concepts generated by Austrian companies. The second presents an MCDA for evaluating car road pricing implementation schemes as policy measures in reducing transport volume and supporting modal shifts in Austrian transport. The results show that MCDA is an appropriate decision support approach, as long as the facilitators applying it take the following prerequisites into consideration. They have to make sure that (1) emphasis is put on the process and not only on the result, (2) that all relevant dimensions and perspectives of the decision problem are addressed, (3) that the characteristics of complex systems are taken into account, and (4) that both the persons affected and the decision makers are involved in the process. If these prerequisites are satisfied, the chance of achieving effective decision processes and arriving at satisfactory solutions for the given problems is very high. However, it has to be noted that multi-criteria decision approaches can never replace the socio-political discussion processes preceding decisions and their implementation.

Ines Omann finished her PhD studies in February 2004. Her thesis "Multi-criteria Decision Aid as an Approach for Sustainable Development Analysis and Implementation", supervised by Karl Steininger and Sigrid Stagl (also a SERI member) can be downloaded at www.seri.at/students/

Gamper, C. (2004): Building Energy Scenarios for Eastern Styria (Austria) using Multi Criteria Mapping with the Inclusion of Participatory Methods. Dissertation in Part Fulfilment of the Degree of Master of Science in Ecological Economics, University of Edinburgh

In this thesis the potential of renewable energies in future energy scenarios in Eastern Styria (Austria) is being assessed. This is done by applying a multi-criteria analysis method, namely Multicriteria Mapping (MCM), in which a status quo analysis is performed and participatory techniques are used to develop scenarios and criteria as the basis of the final analysis performed at a later stage.

Behrens, A. (2004): „Environmental Policy Instruments for Dematerialisation of the European Union“, Diplomarbeit, Wirtschaftsuniversität Wien, Department of Environmental Economics and Management, Prof. Uwe Schubert

This paper deals with environmental policy instruments designed to reduce the material input of European economies. In line with sustainable development, these instruments need to allow for economic growth, while taking into account environmental and social considerations. With regard to the environmental dimension, dematerialisation has been pointed out as one of the main goals, recognising that industrialised economies are capturing an unsustainably large share of world resource use, the consequences of which are characterized by considerable degrees of scientific uncertainty. Focussing on the inputs of the economic metabolism will also lead to improvements regarding its outputs, due to the fact that all inputs are ultimately turned into waste, emissions and other outputs.

After reviewing the main concepts and principles of importance to the subject matter, the first part gives a brief overview on aspects of dematerialisation as advocated on the international and European level.

The second part deals with specific instruments for policy-makers to pursue a dematerialisation strategy. As a start, instruments that support voluntary behavioural changes are presented. They include the design of a clear concept of dematerialisation that needs to be publicly communicated; the

provision of information to all involved actors on how to comply with that concept; the development of adequate resource-management systems in order to reduce material requirements of products over their whole life-cycle; as well as the provision of environmentally relevant education on all levels. This section also features ownership rights and cooperation between actors as well as an extensive part on voluntary environmental agreements. The second section deals with economic instruments and the incentives for economic agents to reduce material input associated with them. Subsidies, taxes, certificates, and public procurement are discussed in this section. The third section covers some aspects of regulatory policies. It is followed by some concluding remarks, stressing the need for an appropriate mix of instruments in order to put the concept of dematerialisation into practice.

Strasser, S. (2004): "Sustainable Community Planning – Beispiele aus Vancouver", Diplomarbeit an der Universität für Bodenkultur, Institut für Landschaftsarchitektur, zur Erlangung des akademischen Grades Diplom-Ingenieurin der Landschaftsplanung und Landschaftspflege. Eingereicht von: Marie-Sophie Strasser, Betreut von: Ao.Univ.Prof. Dr. Erwin Frohmann, Ass.Prof. Dr. Dagmar Grimm-Pretner, Wien, im Oktober 2004

Vancouver as a growth region is facing the challenges of providing enough living space for its inhabitants. The forms of urban development of the last decades – sprawl – have proved to be ecologically, economically and socially not sufficient. Via sustainable community planning better neighbourhoods should be built. I analysed the planning approaches via literature research about the historical development of settlements, planning instruments of the region and about concepts of sustainable community planning. Further for depicting the discourse I interviewed experts and analysed the outcomes concerning the most important topics. Three case studies about urban development projects, which have been communicated as sustainable communities, were selected and with criteria for sustainable community planning – developed from the previous work – described and analysed. The case studies revealed that the most important planning aspects of the region are indeed included, but that they fail partly in the implementation phase. A reason for that seems to be that the planning process is not satisfactory for all players involved. The key to a successful planning process lies within integrative participation right from the beginning of the project.

Spangenberg, J. H. (2004): Die ökonomische Nachhaltigkeit der Wirtschaft. Theorie, Kriterien und Indikatoren einer nachhaltigen Entwicklung der Wirtschaft, mit besonderer Berücksichtigung ihrer ökonomischen Nachhaltigkeit. PhD-Thesis. Universität Bremen, FB Wirtschaftswissenschaften, Betreuer: Prof. Dr. Jörg Huffschmidt, Bremen, und Prof. Dr. Elmar Altvater, FU Berlin.

This analysis tests economic theories regarding their suitability to deal with the economy as a co-evolving system and finds them undercomplex. Systems theory provides criteria for the complexity of any suitable theory of sustainability (and of economics). The theory of orientors is used to derive sustainability criteria for evolving systems. Applied to the economy, criteria and indicators for sustainable economies are suggested.

Book sections

Niederl, A. und R. Mesicek (2004): Self-Assessment of Consumptive Behavior Based on Material Intensity. In Scharl, A. (Ed.), Environmental Online Communication, Springer, London, pp. 79-87

The paper describes the process of developing a questionnaire for the self-assessment of consumptive behaviour. After pointing out the importance of the material flows created by society, we argue that one way to reverse the current trend is a change in consumption patterns. An important precondition for such a change is that people are aware of the problem. Offering online information can contribute to creating such awareness. Therefore an online questionnaire has been developed identifying direct and indirect resource consumption. The questionnaire allows interested persons to spot the material flows caused by their consumptive behaviour in selected areas and thus inspires

them to rethink their behaviour. Material flow analysis (MFA) serves as the methodological basis and material intensity per unit of service (MIPS) as the respective indicator. The consumption clusters with the highest relevance are those which are environmentally significant and can also be influenced by the individual. After identifying these clusters, the process of creating the questionnaire is presented.

Geibler, J. v., Kuhndt, M., Seifert, E. K., Lucas, R., Lorek, S. and Bleischwitz, R. 2004 'Sustainable business and consumption strategies', in R. Bleischwitz and Peter Hennicke (eds) *Eco-Efficiency, Regulation and Sustainable Business - Towards a Governance Structure for Sustainable Development*, Cheltenham, UK; Northampton, MA, USA: Edward Elgar.

Lorek, S. 2004. Ecological demand: Consumer's willingness and their need for support. In: Japanese German Center Berlin, ed. Governance of Markets for Sustainability. Iudicium Publishers, Munich.

Lorek, S., Spangenberg, J. H. (2004). Consumption and Saving. Encyclopedia of Social Measurement. K. Kempf-Leonard. San Diego, CA, USA, Academic Press.

O`Connor, M., Hue, Ch., Booth, L., Spangenberg, J., Valentin, A., de Marchi, B. (2004). Implementation of Indicators for Social Responsibility Reporting. Bruxelles, European Aluminium Association**:** 138.

Spangenberg, J. H. (2004). Nachhaltiger Konsum - Genuß ohne Reue? Zeit für alles - Zeit für nichts. In: Jürgen P. Rinderspacher. Berlin , Edition Sigma: 137-152.

Spangenberg, J. H. (2004). Institutions for sustainable consumption - analysing Agenda 21. In: Klaus Hubacek, Atsushi Inaba, Sigrid Stagl (Eds), Driving Forces of and Barriers to Sustainable Consumption. Proceedings of the International Workshop, Leeds, March 5-6, 2004, University of Leeds.

Spangenberg, J. H. (2004). The society, its products, and the environmental role of consumption. Sustainable Consumption and Ecological Economics. I. Roepke, Reisch, Lucia A. Aldershot, UK, Edward Elgar, in print.

Spangenberg, J. H. (2004). Environmentally sustainable domestic consumption: material flow based indicators for priority fields of action. Integrative approaches towards sustainability in the Baltic Sea Region. W. L. Filho, Ubelis, A.. Frankfurt/Main, Peter Lang. 15: 171-186.

Spangenberg, J. H. (2004). Johannesburg + 2: After Neo-Liberalism, how to deal with Geopolitics? 2004 International Sustainable Development Research Conference, Manchester, ERP Environment. Shipley, West Yorkshire, UK: 587-596

Spangenberg, J. H. (2004). Anpassung statt Gestaltung? Eine Polemik. Arbeit in der neuen Zeit. Regulierung der Ökonomie, Gestaltung der Technik, Politik der Arbeit. H. G. Dieter Scholz, Helmut Martens, Pia Paust-Lassen, Gerd Peter, Frieder O. Wolf. Münster, Lit-Verlag. 46: 171-177.

Journal articles

Giljum, S., Eisenmenger, N. 2004. North-South trade and the distribution of environmental goods and burdens: a biophysical perspective. Journal of Environment and Development 13 (1), 73-100.

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.

For more information, contact Stefan Giljum (stefan.giljum@seri.at).

Giljum, S. (2004): Trade, material flows and economic development in the South: the example of Chile. Journal of Industrial Ecology 8 (1-2), 241-261.

Material flow accounting and analysis (MFA) is internationally recognized as a key tool to assess the biophysical metabolism of societies and to provide aggregated indicators for environmental pressures of human activities. Economy-wide material flow accounts have been compiled for a number of OECD countries, but so far only very few studies for countries in the South exist. In this paper the first material flow-based indicators for Chile are presented. The paper analyzes the restructuring of the Chilean economy towards an active integration in the world markets from the perspective of natural resource use in a time series from 1973 to 2000. Special emphasis is placed on the assessment of material flows related to Chile's international trade relations. Results show that material inputs to the Chilean economy increased by a factor of six, mainly due to the promotion of resource-intensive exports from mining, fruit planting, forestry and fishery sectors. With more than 40 tons, Chile's resource use per capita at present is one of the highest in the world. The paper addresses main shortcomings of the MFA approach, such as weight-based aggregation and the missing links between environmental pressures and impacts, and gives suggestions for methodological improvements and possible extensions of the MFA framework, intending to develop MFA into a more powerful tool for policy use.

For further information contact directly Stefan Giljum (stefan.giljum@seri.at).

Giljum, S., K. Hubacek (2004): Alternative approaches of physical input-output analysis to estimate primary material inputs of production and consumption activities. Economic Systems Research 16 (3), pp. 301-310

In the last few years a number of studies have been presented that link material flow accounting and input-output analysis (based on monetary input-output tables) for the calculation of direct and indirect resource inputs for production and consumption activities. The compilation of the first physical input-output tables for some European countries in the 1990s opened new possibilities for linking physical accounting and input-output analysis. Physical input-output analysis has so far only been applied for selected materials, but it has not been used for comprehensive assessments of material requirements of economic activities. In this paper possibilities and limits of this new input-output approach are clarified. We present and discuss a procedure similar to monetary input-output analysis and develop an alternative approach to account for primary inputs and waste otherwise not included in the analysis. Based on aggregated input-output tables for Germany, we present numerical examples intended to compare the alternative approaches of physical input-output analysis.

For further information contact Stefan Giljum (stefan.giljum@seri.at).

Giljum, S. , K. Hubacek, L. Suh (2004): Beyond the simple material balance: a reply to Sangwong Suh's note on physical input-output analysis. Ecological Economics 48, 19-22

For more information contact Stefan Giljum (stefan.giljum@seri.at).

Rammel, C., van den Bergh, J. (2003): Evolutionary Policies for Sustainable Development Adaptive Flexibility and Risk Minimising. Ecological Economics 47, 121-133

An evolutionary perspective on policies to foster sustainable development is presented. It is argued that policies suggested by the traditional economic theory of environmental policy can stimulate unsustainable socio-economic structures and patterns. In addition, they are unable to remove undesired locked-in systems and technologies. Drawing on evolutionary thinking, characterised by diversity, selection, innovation, path-dependence and bounded rationality, an alternative, partly complementary theory of environmental policy is suggested. Specific attention is given to the role of strategies that are aimed at increasing diversity and adaptive flexibility, and at reducing risk.

For more information contact Christop Rammel (christian.rammel@univie.ac.at).

Spangenberg, J. H. (2004). "Reconciling Sustainability and Growth: Criteria, Indicators, Policies." Sustainable Development 12(2): 74-86.

Sustainable development is based on the integration of four dimensions: the economic, the environmental, the social and the institutional. For the economic dimension in particular, growth has been considered an essential element of sustainable development. This paper discusses the relationship of social, environmental and institutional sustainability objectives to economic growth and derives social and environmental criteria for growth to be sustainable. One of the most sophisticated sustainability studies developed for Germany is introduced, demonstrating the need and the possibility to reconcile economic, social, environmental and institutional objectives. Integrated politics taking into account all four dimensions when drafting policy plans are a necessary precondition for this. Based on two sustainability scenarios with a different emphasis (growth, integration) five core action zones for policy making are identified. The criteria derived can be used as yardsticks assessing policy proposals at an early stage regarding their impact on key sustainability objectives.

Other articles

Bimboes, D., J. H. Spangenberg (2004). "Klimapolitik ist Friedenspolitik." Wissenschaft & Frieden 22(3): 35-38. German download from www.iwif.de/wf304-31.htm.

Hinterberger, F., A. Behrens: Dematerialisierung schafft Wohlstand, Glocalist Review Nr. 46 (Octobre 2004). German download from www.faktor10.at/Dokumente/Glocalist%20Nr.46.pdf

Hinterberger, F., F. Luks, M. Stewen (2004). Economic Growth and Sustainable Development. In: Encyclopedia of Life Support Systems (EOLSS), Developed under the Auspices of the UNESCO, Eolss Publishers, Oxford, UK

So far, a "delinking" of economic growth from environmental burden has not taken place to the extent necessary for ecological sustainability. Hence, the delinking (or decoupling) of growth from environmental pressure is debated in the context of the so-called "Environmental Kuznets Curve" before we make some references to new developments in economic growth theory and in ecological economics. The political relevance of these debates stems from differences in the evaluation of possible technological trends, which might help to delink economic growth from environmental pressures, or not. In addition to technological potentials of decoupling, economic agents have opportunities to delink economic activities from individual well-being, which would enable human societies to increase their well-being without necessarily increasing environmental disruption. The final section makes some concluding remarks on how to bias economic development.

Kastenhofer, K., I. Omann, S. Stagl, K. Steininger. Science Policy for Transdisciplinary Research. In: Encyclopedia of Life Support Systems (EOLSS), Developed under the Auspices of the UNESCO, Eolss Publishers, Oxford, UK (online version)

Sustainable development represents a challenge not only for science but also for science policy since it relates to such a large range of societal goals. Thus, research on sustainable development – in addition to monodisciplinary approaches - ultimately has to address and integrate these various goals. In order to do so, transdisciplinary research not only crosses disciplinary boundaries but also inevitably involves the publics concerned, the administration and individual stakeholders. While it has become evident that it is necessary to address sustainability problems jointly by a number of disciplines and actors, it is less evident, that transdisciplinary research needs new approaches and offers new opportunities and challenges.

New demands as well as potential problems of such transdisciplinary research also set new requirements for science policy. Despite increased recent endeavors, particularly in some European countries, to support transdisciplinary research through suitable policy measures, knowledge on how to support this type of research is still in its infancy.

In summary, the conclusions drawn in this article are the following: First, for fostering transdisciplinary research four prerequisites have to be met: the possibility of a top-down definition of the research area, the existence of societal demand for a problem solution, the possibility of a pooling of funding, and the willingness for institutional cooperation. Given these, science policy has to take account of the characteristics of transdisciplinary research by meeting the demands stated in this article in particular with respect to evaluation criteria, project management, funding level, and resource structure. Tertiary education for transdisciplinary competences can be influenced only indirectly by science policy. Yet, given an adequate time horizon for transdisciplinary research programs, policy can allow for complete

career steps to be accomplished under the criteria of transdisciplinarity, and, equally important, allow for a socialization of researchers in this field so that they may develop the requisite social and communicative competences, which are additionally necessary for transdisciplinary research.

Lorek, S. und L. Vogelsang. 2004. Integration zukunftsfähiger Lebensstile in die Nachhaltigkeitsstrategie. Umsetzungs- und Kooperationsstrategien anhand beispielhafter Akteursmatrizen. Vorschlag für den Fortschrittsbericht 2004 der Bundesregierung zur Nationalen Nachhaltigkeitsstrategie und für den Nationalen Dialog über nachhaltige Konsum- und Produktionsmuster

You can download this document at www.bund.net/lab/reddot2/pdf/matrix_lebensstile.pdf

Michaelis, L., and S. Lorek. 2004. Consumption and the Environment in Europe: Trends and Futures. Danish Environmental Protection Agency, Copenhagen.

Rammel, C., F. Hinterberger, U. Bechtold (March 2004): Governing Sustainable Development - A co-evolutionary perspective on transitions and change. GoSD Working Paper No. 1

Socio-economic development cannot be sustainable without some kind of "good governance". The challenge for governing sustainable development lies in open processes and continuous learning rather than in determined outcomes. Sustainable transitions cannot be managed in a controlling sense as they are driven and caused by a dynamic interplay between various complex and co-evolving processes, many of them are far beyond any certainty, control or predictability. The co-evolutionary perspective outlined in this paper serves as heuristic device to clarify the complex dynamics inherent in societal change and transitions. Special attention is devoted to notions often ignored in the current debates on sustainability and governance such as adaptive change, co-evolutionary dynamics or the paradox between change and conservation. For this purpose we draw on ideas from evolutionary theory, anthropology, complex adaptive systems theory and adaptive management. An outlook of a future research agenda on transition management is given.

You can download this document at www.gosd.net/pdf/gosd-wp1.pdf

Spangenberg, J. H. (2004). "Estrategias de sustenibilidad: raices, estado y desafios." Instituto Nacional de Technologia Industrial, Buenos Aires (Ed.): Aportes 2 (Marzo 2004): 1-24.

Spangenberg, J. H. (2004). "Nach dem Ende des Neoliberalismus - die neue Rolle des Staates nach innen und nach außen." perspektiven ds 21(1/04): 52-73.

Conference papers

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