Research for a Sustainable Economy

Annual Report 2012/2013

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INSTITUTE FOR
ECOLOGICAL ECONOMY RESEARCH

Contents

IMPRINT

Institute for Ecological Economy Research
(Institut für ökologische Wirtschaftsforschung GmbH, gemeinnützig) | www.ioew.de

Editor: Richard Harnisch, Public Relations and Communications

Layout: hakotowi, Berlin | www.hakotowi.com
Print: Oktoberdruck AG, Berlin
Printed on 100 % recycled paper,
certified with the 'Blue Angel' label ('Der Blaue Engel')

This Annual Report can be
downloaded at: www.ioew.de/en

Berlin, September 2013

ClimatePartner°
klimaneutral
Druck | ID: 53129-1309-1003

Introduction

Dear Reader,

Under the banner of ‘Research for a Sustainable Economy’, the IÖW develops scientifically-sound studies and concepts that are intended for practical application, and supports their implementation at the corporate and political level as well as in NGOs. Since our organisation was founded in 1985, we have contributed continuously – frequently acting as pioneers – to implementing the concept of sustainable development through transdisciplinary research and consulting.

Key Topics in Sustainability Research

The IÖW researches a wide array of issues ranging from ‘Products and Consumption’ and ‘Sustainable Corporate Management’ to ‘Climate and Energy’ and ‘Water and Land Management’. The Annual Report for 2012/2013 in English presents the institute’s current projects and publications dealing with seven issues. We work on many of these topics together with international partners and on behalf of international sponsors. If you would like to learn more about our work, we invite you to visit the IÖW website. > www.ioew.de/en

Responsible Research

The IÖW does not only carry out sustainability research, but we also endeavour to make our own work as sustainable as possible: to keep environmental damage to an absolute minimum and at the same time consider the social concerns of our employees. In 2011 the IÖW became one of the first German research institutions to regularly publish information about its own sustainability.

In Conclusion...

We have continued to grow in 2013. New members of staff are broadening the institute’s competences and contributing to its development with new ideas. Additional projects are allowing us to work with a wider spectrum of sponsors and cooperation partners.

We sincerely thank all of those who have supported and assisted our work in the past two years and beyond: our friends, sponsors and cooperation partners from the field of research and from organisations that are concerned about strategies for sustainability. We want to continue to look to the future with you in order to find answers to the pressing questions of today.

Thomas Korbun
Scientific Director

Contact

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Financial Director: **Marion Wiegand**, marion.wiegand@ioew.de

The IÖW – Facts and Figures

The IÖW is a leading scientific institute in the field of practice-oriented sustainability research. It devises strategies and approaches for viable, long-term economic activity – for an economy which enables humankind to live well and preserves natural resources. For over 25 years, scientists at the IÖW have been tackling the challenges of sustainable development and seeking new, often unconventional answers to today's questions about tomorrow.

ORGANISATION AND STAFF
(AS OF AUGUST 2013)

Management
Scientific Director: Thomas Korbun
Financial Director: Marion Wiegand

Board
Professor Dr Heike Flämig
Professor Dr Bernd Hirschl
Thomas Korbun
Dr Jürgen Meyerhoff
Franziska Mohaupt

Public Relations and Communications
Richard Harnisch

Editor of 'Ökologisches Wirtschaften'
Christopher Garthe

Heads of Research Fields

Corporate Environmental Management:
Dr Esther Hoffmann

Ecological Economics and Environmental Policy:
Ulrich Petschow

Sustainable Energy and Climate Protection:
Professor Dr Bernd Hirschl

Ecological Consumption:
Dr Gerd Scholl

Ecological Product Policy:
Dr Frieder Rubik

THE IÖW – RETHINKING THE ECONOMY

Imagine an economy that creates prosperity without endangering natural resources. Imagine a clean energy supply that provides decentralised electricity and heat without polluting the Earth's atmosphere with emissions or burdening future generations with nuclear waste. Imagine being able to use durable, high-quality products without having to own them. Imagine companies that do not only want to create economic value, but also want to maximise their social and ecological value.
Imagine an economy that has been developed far beyond today's industrial society; one that has been fundamentally transformed. That is the kind of economy towards which the IÖW is working.

PROMOTING PRACTICABLE, EVERYDAY SUSTAINABILITY

So far the IÖW has worked on over 450 projects to tackle social challenges, using unique research designs and innovative methods and forming new alliances. The IÖW currently works on topics such as sustainable corporate management, climate-friendly energy systems, new technologies, sustainable consumption and environmental policy and governance. Our aim is to develop tangible ideas and approaches for a sustainable economy that are applicable both to the meta-level and to everyday life. We endeavour to work closely with the relevant actors and issue clear recommendations.
Topics and Projects > see pages 5-31

THE IÖW'S STAFF

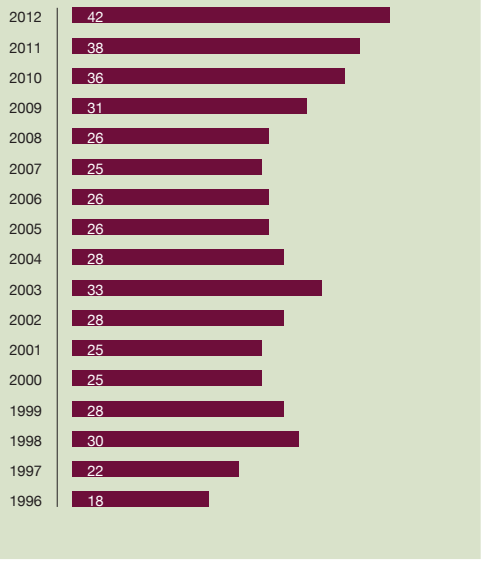
At the IÖW, scientists from different disciplines work together in teams – economists and engineers, sociologists and psychologists. Their common task is to recognise and identify the causes of social challenges and develop possible solutions, with curiosity and expertise, conviction and independence. It is not only our technical competence and methodological knowledge that is constantly growing, but also the IÖW team itself. Many of our staff members have been with us for a long time – they have shaped the institute and its work over a period of many years and made the IÖW what it is today.

Read more about the IÖW's staff > www.ioew.de/en

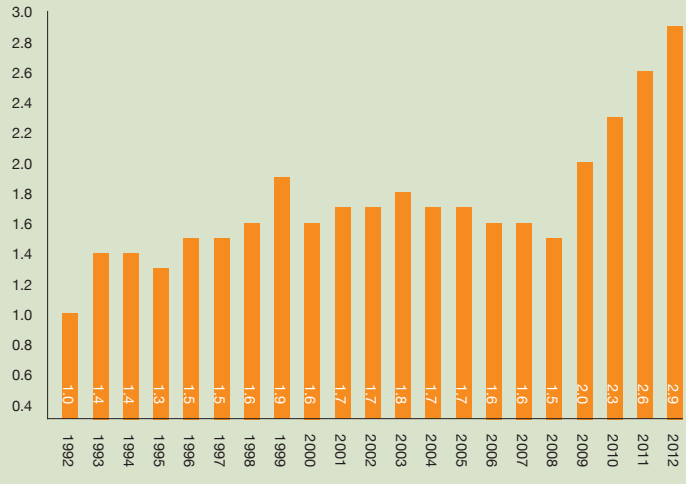
INDEPENDENT AND NOT-FOR-PROFIT

The IÖW has been around for over 25 years – that is a long time for an independent research institute. It proves that competence and innovative thinking, assured direction and flexibility are also required on the 'research market' and that we can safeguard our independence – including our financial independence – with these strengths. As an independent institute the IÖW receives no permanent basic subsidies.

PERSONNEL DEVELOPMENT 1996–2012



REVENUES 1992–2012 in Million Euro



THE IÖW'S CLIENTS

The IÖW's clients and sponsors come from many different sectors of society. In recent years we have been able to obtain a large proportion of our projects from the public sector, such as the German Federal Government and the federal states, but also from corporations, associations and private foundations. Cooperation with international partners and clients such as the European Union and the United Nations Environment Programme (UNEP) has become both enriching and a regular feature.

More information on our international cooperation partners > see page 32

Sustainability at the IÖW

The IÖW is one of the pioneer institutions in transdisciplinary sustainability research in Germany. Through our scientific work we initiate, monitor and strengthen social change for sustainable development. At the same time we contribute to further developing scientific knowledge and methods. We create conceptual foundations and practical solutions that help embed ecological and social aims more firmly in the behaviour of society.

The IÖW does not only carry out sustainability research, but also endeavours to make its own work as sustainable as possible: to keep environmental damage to an absolute minimum and at the same time consider the social concerns of its employees. In 2011 the IÖW became one of the first German research institutions to publish information about its own sustainability.

We began systematically to record the environmental impact of our activities, e.g. energy and paper consumption, business travel and the purchasing of office equipment. We also report on our planned measures for promoting social sustainability at the IÖW. We place particular focus on our employees' work-life-balance, so that we will still be enthusiastic about our work and dedicated to our research topics in the future. We are committed to further institutionalising sustainability management at the IÖW. We have set ourselves specific targets by means of a detailed sustainability programme.

Our dialogue with other research institutions and cooperation partners has shown that there is great interest in reporting on sustainability-related topics. Until now few organisations in the research landscape have engaged in this kind of reporting. It is said that organisations are prevented from doing so due to the lack of special standards for sustainability reporting by research institutions; such standards must still be developed. This is something in which we would like to become involved. We have proven expertise in this area, thanks to our many years of experience in analysing corporate sustainability reporting.

You can find more details about our sustainability reporting on our website, under the section 'Unsere Verantwortung' (German only): www.ioew.de/das-ioew/verantwortung.

IÖW Topics at a Glance

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PRODUCTS AND CONSUMPTION

The production and consumption patterns of Western industrial societies are not sustainable. And the economic development of newly industrialising countries such as Brazil, India and China clearly shows that environmental degradation must be reduced and the negative social effects of the economy must be limited. Sustainability policy has taken up this challenge but there is still a lot of work and research to be done. The IÖW develops strategies for Sustainable Consumption and Production (SCP) at the federal and the European level, e.g. for the food, housing and mobility sectors. We analyse national and international policy concepts and instruments such as environmental labels and green public procurement and draw up sustainability strategies that are tailored to the respective stakeholders. Sustainable marketing and market research into greener patterns of consumption are also part of our services.

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CLIMATE AND ENERGY

Climate change is one of the greatest challenges of our time. Climate protection and adaptation are necessary in equal measure in order to mitigate the effects of climate change, overcome them and become future-proof. The IÖW develops, analyses and evaluates technologies, concepts, political strategies and instruments. We pay special attention to the practical relevance of our work and the interdisciplinary approach, which considers not only greenhouse gas effects but also other aspects of sustainability such as conflicting interests and economic profits. Our study areas include renewables, energy efficiency, climate protection policy and adaptation measures. We also evaluate possible ways of profiting economically from climate change measures. Our economic model WEBEE makes it possible for the first time to determine the value-added and employment effects of different renewable energy technologies.

Contact: **Professor Dr Bernd Hirschl**, bernd.hirschl@ioew.de

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SUSTAINABLE CORPORATE MANAGEMENT

Society has high expectations of the business world. Companies are supposed to offer high-quality, affordable products and services. Furthermore, they also need to consider – and improve – their current and future impacts on the environment, employees and business partners, and society at large. Last but not least, innovation and product development ought to respond to real and urgent societal challenges: 'just good' is not good enough. At the IÖW, we aim to support companies in their attempts to exercise this accountability to society. We generate and provide knowledge regarding strategies, methods and tools as well as best practice that might foster changes in companies' behaviour concerning corporate sustainability and responsibility. To enable economic actors to respond to the future challenges of a post-growth society, we also analyse and evaluate alternative business models and forms of ownership.

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INNOVATION AND TECHNOLOGY

Sustainable development requires social and technical innovations. The IÖW assesses new technologies such as bionics, nanotechnologies and 3D-printers in terms of sustainability. During this process, we take account of the technical, social, economic and ecological opportunities and risks of these technologies and highlight structuring possibilities. A particular concern of ours is to embed sustainable technologies in political and market contexts. For instance, we are currently studying the consequences of the rise of Web 2.0 for fabrication standards and trying to anticipate possible new paradigms such as 'social fabrication'.

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WATER AND LAND MANAGEMENT

Water and land management is currently under pressure to adapt: climate change and global economic developments are influencing land use patterns and water availability. At the same time, decisions about land use and interference with the water balance are having a serious impact on the local and global climate, the quality of groundwater, inland and coastal waters, the maintenance of biodiversity and a number of other ecosystem services. The IÖW conducts research and provides advisory services in the field of integrated water resource and land management. We undertake socio-economic analyses in the context of interdisciplinary projects on river basin and flood risk management, integrated coastal zone management and the effects of agriculture on the environment and the climate.

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ENVIRONMENTAL POLICY AND GOVERNANCE

More than ever before, environmental policy has to be considered a far-reaching interdisciplinary approach nowadays. Finding solutions to complex environmental problems such as climate change or water shortages requires the involvement of several control levels and various protagonists. End-of-pipe approaches, which characterised environmental policy just a few years ago, do not go far enough. Effective environmental and sustainability policy that aims for large-scale transformation combines legal and economic instruments with new cooperative approaches. The IÖW analyses the problem contexts, develops and assesses environmental policy concepts and elaborates innovative solutions – while always remaining in close contact with the relevant protagonists from politics, industry and society.

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PARTICIPATION AND COMMUNICATION

Sustainable development is a process in which, ideally, all societal groups participate. Transparency, open communication and the involvement of stakeholders in value-creation or decision-making processes are thus the basis for sustainable development – be it in politics, business or civil society. The IÖW designs and moderates dialogue processes, e. g. in the German policy area of climate change adaptation, and evaluates corporate sustainability reporting. In our research projects we work closely with partners who are practitioners in different fields and we communicate the results of our research via diverse channels – from traditional print products and varied event formats to online presentations and the new media.

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> see www.ioew.de/en/topics

EVALUATION AND ASSESSMENT

Making progress on the path towards sustainability requires good strategies – strategies that allow the consequences for the environment, economy and society to be largely assessed. An ex-ante, systematic evaluation of policies, instruments and programmes helps to achieve objectives, increases legitimacy and acceptance and promotes 'learning' policy approaches. The IÖW improves and develops methodological evaluation approaches and carries out impact assessment and evaluation for politics, stakeholders and business. We also draw up ecological-economic assessments – especially for dealing with natural resources – as well as life cycle assessment (LCA) for products and technologies. A special concern of ours is to contribute to the discourse of evidence-based policy-making by working on quality criteria for these tools.

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Products and Consumption

TOPIC

Evidence-Based Policy-Making for Sustainable Consumption – Designing the Science-Policy-Interface

CORPUS – Enhancing the Connectivity between Research and Policy-Making in Sustainable Consumption
Period: 01/2010 – 01/2013

RESPONDER – Linking Research and Policy-Making for Managing the Contradictions of Sustainable Consumption and Economic Growth
Period: 01/2011 – 06/2014

Supported by: European Commission, Brussels
Seventh Framework Programme (FP7)
Cooperation Partners: Numerous partners from several European countries

Sustainable consumption has become an increasingly significant topic on the European political agenda. At the same time, European research exploring sustainable consumer behaviour has also developed rapidly. The existing scientific evidence provides a sound basis for policy-making on sustainable consumption. However, the huge body of research has been under utilised until now. The launch of the EU-funded projects CORPUS and RESPONDER is thus intended to contribute to further developing the science-policy interface in this area.

CORPUS – Knowledge-Brokering for Sustainable Food, Mobility and Housing

The aim of the CORPUS project was to develop novel approaches to knowledge-brokering between policy-making and research, by testing a combination of online and offline tools. The knowledge brokerage system developed by CORPUS consists of a web platform and three series of interaction exercises. IÖW scientist Dr Gerd Scholl coordinated the consortium.

The CORPUS web platform, 'The SCP Knowledge Hub', has become a unique online resource for knowledge brokerage on sustainable consumption and production (SCP). It has a consistently-growing base of over 850 members, who visit the site over 1500 times per month. The online library comprises almost 600 documents and is continuously updated with new knowledge items by expert users. A news ticker on the homepage of the web portal and a newsletter regularly inform the members of the community about important SCP-related topics.

In addition, further innovative knowledge-brokering and community-building methods were tested in several workshop series focusing on food, mobility and housing. Each of the 'Policy Meets Research' workshop series used a range of facilitation techniques, which made the workshops highly interactive. The general response to the events was very positive. Both the knowledge presented at the events and the techniques used were of great practical use to the participants.

A list of tips and recommendations on developing and implementing an effective knowledge-brokering programme can be found in the project's policy brief. Taking the policy area of sustainable consumption as an example, the brief presents arguments, guiding principles and tools for active and successful knowledge management between policy-makers and researchers. A free e-book is also available. It uses the example of participatory scenario development to provide specific, practical ideas for exchanging knowledge e.g. in a workshop setting.

RESPONDER – Linking SCP and Growth Debates

RESPONDER takes a slightly different perspective. The project aims to reveal and discuss the links and contradictions between sustainable consumption and economic growth e.g. by touching upon the current 'degrowth' and 'beyond growth' debates. The project seeks to inform policy-making by exploring novel ways of conducting knowledge brokerage. The method of participatory system mapping is being employed in a series of EU dialogues and multinational knowledge brokerage events to reveal the system dynamics and to help organise relevant knowledge in a structured way. An online platform supports the stakeholder dialogue between these events and contributes to community-building among scientists and policy-makers.

Further information: www.scp-knowledge.eu, www.scp-responder.eu
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Using Market Power to Benefit the Environment

Green Public Procurement: Follow-up to the SCP/SIP Action Plan and Communication 'Public procurement for a better environment' (COM (2008) 400) of the European Commission
Period: 11/2009 – 10/2012
Supported by: Federal Environment Agency, Dessau
Cooperation Partner: Oeko-Institut, Freiburg

Concentrating Market Power: Bulk Consumers as Change Agents for Innovation towards Sustainable Consumption
Period: 08/12 – 07/14
Supported by: Federal Environment Agency, Dessau
Cooperation Partners: Institute for Resource Efficiency and Energy Strategies (IREES), Karlsruhe; Fraunhofer Institute for Systems and Innovation Research (ISI), Karlsruhe

How can companies and institutions in the public and private sectors use their procurement and purchasing systems to support environmental protection and sustainable consumption? In certain markets for goods and services they have a significant market position, which they could use for environmental purposes. By establishing environmentally-friendly purchasing systems and favouring innovative and sustainable product ranges, companies and institutions can have a major impact on the market introduction and spread of greener, more sustainable products. The IÖW is currently involved in two projects to examine how bulk consumers in the public sector and the private sector can use their market power to benefit the environment.

Expenditure on public procurement in the EU is around two billion euros, which is equivalent to 20 per cent of GDP. That is a significant market position and the public sector could use it to transform the market. The IÖW has used its expertise to advise the Federal Environment Agency on how to help the public sector promote the spread of environmentally-friendly products and services. This work involved, among other things, researching examples of good practice, evaluating the public procurement website and providing suggestions for further development, and compiling guidance documents for Green Public Procurement (GPP) on selected topics. In addition the IÖW set up a database of current, publicly-accessible environmental standards. It includes the award criteria of recognised environmental labels as well as tender recommendations from the Federal Environment Agency and the European Commission, relevant manuals and various guidelines on procurement.

However, it is clear that it is not easy to achieve 'green' or 'sustainable' procurement across the board. Although the available training documents and guidelines are important and of excellent quality, they cannot replace binding nationwide targets, operational planning or standardised materials, nor can they replace systematic, widely-implemented training for those responsible for procurement. There needs to be more of a push towards implementing sustainable public procurement.

Bulk consumers in the private sector are also a significant market power. A further project involves looking at how this market power can be focused to promote innovative and environmentally-friendly products. Companies are considered bulk consumers if their purchases make up a significant share of a particular market. The project team is compiling an overview of bulk consumers and has planned three workshops with practitioners to investigate which green product innovations are particularly beneficial for the environment but are hampered by barriers to market entry. The result so far is an environmental policy strategy that encourages environmentally-friendly purchasing practices by bulk consumers and promotes environmental innovations.

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Climate Protection in Everyday Life

Climate Change and Daily Routine Acts:
Potential, Strategies and Instruments for a Low Carbon Lifestyle in a Zero-Emission-City
Period: 11/2010 – 10/2013
Supported by: Federal Ministry of Education and Research (BMBF), Berlin
Cooperation Partner: Institute for Social-Ecological Research (ISOE), Frankfurt am Main

Energy, mobility, food – private households make a significant contribution to the emission of greenhouse gases. Estimates range from 20 to 65 per cent of Germany's total greenhouse gas emissions. Beyond national measures, the local level represents an interesting starting-point for helping households to become more climate friendly. Being in closer touch with people and making them familiar with political and administrative figures could increase the acceptance and range of measures. The project examines how consistently low-carbon lifestyles can be promoted and popularised. It is mainly about changes to everyday routines which mean a major step forward ('leapfrogging') in the reduction of environmentally-damaging emissions. Municipalities are key players here as they have the possibility to shape municipal infrastructure systems and services. The IÖW's focus is on the following question: what instruments, measures and services can promote the diffusion of low-carbon practices in everyday life at local level? Based on an analysis of municipal measures in the two cities of Frankfurt am Main and Munich, we elaborate on the scope of these measures and on challenges and future strategies.

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Further Projects

Development Potential and Marketing Concept of the German Ecolabel Blue Angel
Period: 10/2011 – 10/2013
Supported by: Federal Environment Agency, Dessau

Linking Adaptation Knowledge and Stakeholders, Policy-Relevant Synthesis and Target-Oriented Communication
Period: 02/2011 – 02/2014
Supported by: Federal Environment Agency, Dessau

Selected Publications and Presentations

Filcak, Richard; Rubik, Frieder; Kuhn, Julia; Sabo, Stefan; Gossen, Maike; Sedlacko, Michal (2013)
Towards Sustainable Mobility in European Cities: Insights and Issues for Policy Makers and Researchers
Background Paper, Download: www.scp-responder.eu

Müller, Ria (2012)
Presentation **'(Green) Public Procurement: Examining the Realistic Potential for Stimulating (Sustainable) Innovation'**
IAS-STS Conference of the IFZ Graz, 08 May 2012, Graz/Austria

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Rubik, Frieder (2012)
Presentation **'Policies for Sustainable Products: Successes and Future Needs'**
Conference 'Innovation fur Sustainable Production'
06-09 May 2012, Bruges/Belgium

Rubik, Frieder; Kreß, Michael
Presentation **'Experience with Municipal Interventions to Influence the Carbon Footprint of Private Household Practices'**
ERSCP-EMSU Conference 2013, 'Bridges for a More Sustainable Future Uniting Continents and Societies'
04-06 June 2013, Istanbul/Turkey

Scholl, Gerd et al. (2013)
Enabling Sustainable Consumption. Making Better Use of Research Evidence in Policy-Making
Policy Brief, Download: www.scp-knowldge.eu

Sonigo, Pierre; Bain, Jonathan; Kong, Mary Ann; Fedrigo, Doreen; Withana, Sirini; Watkins, Emma; Scholl, Gerd; Rubik, Frieder; Vanner, Robin; Dresner, Simon (2012)
Policies to Encourage Sustainable Consumption
Full Report, European Commission, ISBN-Nr: 978-92-79-25952-4

Events

The European projects CORPUS and RESPONDER organise workshop series, EU Dialogues and multinational knowledge brokerage events on various topics relating to sustainable production and consumption, e.g.

25-27 January 2012
RESPONDER: Multinational Knowledge Brokerage Event on Sustainable Food Consumption
Lisbon/Portugal, 45 participants

06-07 June 2012
CORPUS: 3rd Workshop on Sustainable Housing
Helsinki/Finland, 40 participants

29-30 October 2012
RESPONDER: 2nd EU Dialogue on 'Linking Policy and Science for Greening the Economy'
Brussels/Belgium, 50 participants

Team

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TOPIC

Renewable Energy Regions – Pioneers for Decentralised 100 % Supply

Renewable Energy Regions: Socio-Ecology of Self-Sufficiency – The Conditions for and Diffusion of Concepts for the Complete Energy Supply of Municipalities and Regions on the Basis of Renewable Energy – Main Focus on Bioenergy

Period: 05/2009 – 04/2014

Supported by: Federal Ministry of Education and Research (BMBF), Berlin

Cooperation Partners: Centre for Renewable Energy (ZEE), University of Freiburg; University of Hohenheim, Institute of Landscape and Plant Ecology

Municipalities and regions play a significant role in developing renewable energies. Without involvement at regional level, higher-level climate protection targets and energy policy objectives cannot be met. What is more, many municipalities and regions in Germany are aiming to achieve self-sufficiency by means of renewable energies. The regions call themselves '100% Renewable Energy Regions'. However, in order to achieve self-sufficiency in a way that is socially just and ecologically sound they must overcome several challenges.

Germany is one of the pioneers in the area of local authority involvement, but there are many other examples around the world – such as the Netherlands, the USA and Denmark – that show that municipalities and regions understand the need for a sustainable energy supply and are striving to make themselves self-sufficient with renewable energies by using the potential already available to them. The aim of the project was to develop conditions for success for strategies that municipalities and regions could use to become completely self-sufficient in a way that is socially just and ecologically sound. This involved a holistic approach, above all analysing ecological and social opportunities and risks in conjunction with economic and technical aspects. Both the team and the approach were interdisciplinary and there was close cooperation with four partner municipalities. The team analysed the processes that the municipalities had applied when they took the political decision to aim for self-sufficiency, and the processes that they applied beyond that point. The team also carried out field research in the municipalities and discussed their problems in workshops. Finally, the project's results were examined to see whether they were suitable for practical application. The insights gained from the partner municipalities ultimately allowed for conclusions to be drawn that can also be applied to other municipalities.

The most important findings concerning the conditions for success for socially just and ecologically sound self-sufficiency strategies were included in the guide *Cooperative Local Energy Transitions*, which is aimed at municipal and regional decision-makers, practitioners and other involved parties. The guide introduces different areas of activity in five subject areas – Creating Together, Adding Value, Designing Space, Converting Energy and Connecting Power – and demonstrates ways of designing socially just and ecologically sound self-sufficiency with renewable energies. The problems are outlined at the beginning to make the reader aware of potential areas of conflict, then the 'optimal' conditions from a social and ecological perspective are set out. A visionary goal is then stated, which can be achieved by implementing the various measures in the different areas of activity. Last but not least, an energy target is enclosed to help municipalities and regions to work out their own position in the energy transition, highlight any gaps and develop appropriate measures.

Further information and materials can be found at:
www.ee-regionen.de
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Cities and Regions: Mobility Partnerships and Renewables

Energy Partnerships for Renewable Energies in the Transport Sector in Berlin-Brandenburg
Period: 6/2011 – 11/2012
Supported by: Joint Spatial Planning Department Berlin-Brandenburg, Potsdam; European Union
Cooperation Partner: Innovation Centre for Mobility and Societal Change (InnoZ), Berlin

The European Union has formulated ambitious targets for reducing greenhouse gas emissions to mitigate climate change. These goals also apply to the transport sector, where greenhouse gas emissions are to be reduced by at least 60 per cent by 2050 compared to 1990 levels. Meanwhile, the use of 'conventionally-fuelled' vehicles in urban transport is to be halved by 2030. Twelve partners from the seven European metropolitan regions of Berlin-Brandenburg, Oslo, Gothenburg, Vienna, Ljubljana, Budapest and Rome took part in CATCH-MR, an INTERREG IVC project supported by the European Union. The goal was to investigate 'Cooperative Approaches to Transport Challenges in Metropolitan Regions'.
The use of renewable energies such as biofuels, biogas, green electricity and hydrogen derived from it can be considered as one possible approach towards more sustainable mobility. Since the potential for renewable energies is particularly high in rural areas like Brandenburg, energy partnerships with metropolitan areas like Berlin could help extend more climate-friendly mobility patterns to the whole region. The IÖW and InnoZ analysed this potential in Berlin and Brandenburg and documented it in a report for the Joint Spatial Planning Department. Based on these results, existing partnerships and the political need for action were showcased. Furthermore, an inventory was carried out in the regions that participated in the project. The results were presented at the project's international conference and have been published in its newsletter and in the final CATCH-MR guide *Towards Sustainable Mobility In European Metropolitan Regions*.

More information and downloads are available at:
www.catch-mr.eu
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Value-Added Effects of Renewable Energies – The IÖW-WEBEE-Model

Value-Added Effects of Renewable Energies at Local and Regional Level – Several Studies for Germany, Federal States and Regions
Period: 12/09 – ongoing
Supported by i. a.: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), Berlin; State of North Rhine-Westphalia, Düsseldorf; Greenpeace, Hamburg; Renewable Energies Agency, Berlin

Alongside climate protection, value creation is an increasingly important motivation for municipalities and regions to generate their own energy locally using renewable sources. If energy resources and final forms of energy that are imported are replaced by local, renewable energy sources, technologies and services, then municipalities and regions can also benefit economically. Until recently the value-added effects of renewable energies were difficult to quantify in detail. The IÖW has developed the WEBEE-model to determine the value-added and employment effects of different renewable energy technologies at municipal level. The model calculates the components of local value added, namely business profits, net income of employees and municipal taxes, and has been applied repeatedly for different regional authorities, such as federal states, administrative districts and municipalities. So far the model comprises more than 30 different renewable energy technologies, including wind power, photovoltaics and biogas, and is currently being systematically revised and updated to cover more technologies and also take into account indirect effects.
Germany may be a pioneer when it comes to renewable energies and the 'energy transition', but renewables are also gaining ground in other countries. The IÖW is currently holding talks with Japanese institutions that are interested in WEBEE and is examining the extent to which its methodology for estimating renewable energies' value-added effects on municipalities can be applied to Japan. The topic was already presented to a global audience in cooperation with the German Agency for Renewable Energies (AEE) in the 46th issue of *Renews Specials*. An article will be published in the journal *Energy, Sustainability and Society* in the near future.

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Equipping the Baltic States to Deal with Climate Change

BaltClim – Supporting National Adaptation Strategies to Climate Change in the Baltic States
Period: 11/ 2011 – 01/2013
Supported by: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), Berlin
Cooperation Partners: Baltic Environmental Forum (BEF), Hamburg

Climate protection is already considered an important national responsibility in the Baltic States: Estonia, Latvia and Lithuania. However, the debate surrounding the need to adapt to the consequences of climate change (rising sea levels, changes to wind and precipitation patterns, a general temperature increase etc.) is not yet very advanced. The aim of the project was to support political leaders at national level in the development of climate change adaptation strategies.
One of the tasks of the project was to compile a background paper on the situation in the countries concerned, the barriers and possible courses of action. Country-specific roadmaps were drawn up and individually tailored to fit in with the national debate on climate adaptation in each country. The roadmaps were then discussed at a series of workshops in the three countries. There was a great deal of interest in how Germany had drafted and implemented its own adaptation strategy; in order to present this clearly and comprehensibly, representatives of Germany's Federal Environment Ministry and Federal Environment Agency (UBA) attended many of the workshops. In addition, a delegation from the Baltic states travelled to Germany, where they visited the UBA in Dessau and implementation projects at the German Baltic Sea coast, which were part of the KLIMZUG project RADOST. They also attended a regional adaptation conference at the North Sea coast.
By the time the project came to an end, Lithuania was already developing its national adaptation strategy and Latvia and Estonia had made significant progress – also in terms of awareness-raising among stakeholders, stakeholder involvement, forming links between ministries and exchanging information with the scientific community.

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Further Projects

Private Households as New Key Actors in the Energy System's Transformation Process
Period: 04/2013 – 10/2016
Supported by: Federal Ministry of Education and Research (BMBF), Berlin

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Feasibility Study 'Carbon Neutral Berlin 2050'
Period: 01/2013 – 12/2013
Supported by: Senate Department for Urban Development and Environment, Berlin

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Analysis of Economic, Technical and Environmental Benefits of Energy Storage Systems in Grid-Connected Photovoltaic Systems
Period: 12/2012 – 05/2015
Supported by: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), Berlin

Selected Publications and Presentations

Dunkelberg, Elisa (2010)
Presentation **'Sugarcane Ethanol Production in Malawi – Measures to Optimize the Carbon Footprint and to Compensate Indirect Emissions'**
Conference 'World Sustainable Energy Days 2012',
29 February - 02 March 2012, Wels/Austria

Kreß, Michael (2010)
Presentation **'Acceptance, Demand and Participation – Attitudes and Behaviour Patterns Concerning Renewable Energies of Citizens in Communities with the Goal of Renewable Energy Self-Sufficiency'**
Workshop on Energy & Society. Instituto de Ciências Sociais da Universidade de Lisboa, 22 March 2012, Lisbon/Portugal

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Prahl, Andreas (2012)
Presentation **'Value Added by Renewable Energies in Germany'**
Summer School on Renewable Energy, University of Bonn, 01 August 2012, Berlin

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Stieß, Immanuel; Dunkelberg, Elisa (2013)
Objectives, Barriers and Occasions for Energy Efficient Refurbishment by Private Homeowners. Journal of Cleaner Production, Volume 48, June 2013, pp. 250–259

Weiß, Julika; Vogelpohl, Thomas; Dunkelberg, Elisa (2012)
Improving Policy Instruments to Better Tap into Homeowner Refurbishment Potential: Lessons Learned from a Case Study in Germany
in: Energy Policy 44, 2012, pp. 406-415

Weiß, Julika; Neumann, Anna; Kramer, Steffi; Bost, Mark; Kuttler, Tobias (2011)
Renewable Energy in Transport in Berlin-Brandenburg
Report, Berlin, Download: www.ioew.de

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Further Projects and Publications: www.ioew.de/en

TOPIC

Adapting Energy and Transport to Climate Change

Chameleon – Adaptation to Climate Change in the Utility Sector – Analysis and Development of Options for Business and Political Action

Period: 10/2009 – 06/2014

Supported by: Federal Ministry of Education and Research (BMBF), Berlin

Cooperation Partner: University of Oldenburg, Oldenburg

The consequences of climate change do not only transform and endanger natural areas around the world. They also affect energy and transport infrastructure. A rise in extreme weather events such as heat waves, heavy precipitation and storms can add to wear and tear on infrastructure and lead to higher maintenance costs and increased replacement investment. Furthermore, energy and transport infrastructure is, by its very nature, part of a network. Thus any damage to this infrastructure can easily impact on other sectors of the economy and everyday life in general, leading to shortages of energy supply and even disruptions to public order and safety. In order to meet the need for adaptation in a way that is anticipatory and cost-effective, politicians and utility companies need to be prepared to support adaptation processes for durable infrastructure.

The 'Chameleon' project works with companies and industry associations from the energy and transport sectors to investigate how utility companies can prepare themselves to deal with the consequences of climate change. The project looks at perception, learning and decision-making processes within companies, as well as the factors that influence them, and asks how government and business can better coordinate their adaptation activities.

As part of the project, a Germany-wide, quantitative survey of companies was carried out. This, together with a series of qualitative corporate case studies (e.g. with industry partners including the German railway company Deutsche Bahn, the energy company RWE and industry associations from the energy and transport sectors) shows that urgent action is needed. Although many utility companies are aware of the new challenges, so far there has been more emphasis on discussing the problems rather than translating ideas into specific adaptation measures. In many cases, companies do not yet feel significantly affected by the challenges and there is often a lack of information about climate development, or the existing information is unreliable. These factors can all be identified as barriers to active adaptation measures. In addition, climate change is often considered a technical challenge that can be easily dealt with by standardisation via safety margins. Moreover, the responsibility for targets and measures to increase security of supply in the face of climate change is quickly attributed to decision-makers in the areas of politics, standardisation and research. In the political arena, too, there appears to be little active campaigning for adaptation measures for energy and transport infrastructure. In fact, barriers can be observed. In many cases, changes that would be conducive to adaptation are still in the early stages in the areas of standardisation, public procurement, competition and environmental regulation. The same applies to instruments for the cross-sector coordination of climate-proof infrastructures. Government efficiency targets for infrastructure development make it difficult to climate-proof infrastructure, and the delegation of responsibilities to companies can also be observed.

The project team was able to discuss and clarify these and further findings on barriers to adaptation with protagonists from science, politics and business at two events: the project team's international workshop 'Barriers to Adaptation to Climate Change', held in September 2012 in Berlin, and the European Climate Change Adaptation Conference, which took place in March 2013 in Hamburg. Until the project ends the researchers will focus on publishing their findings in the scientific media and a capacity manual aimed at decision-makers from politics and business.

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Books Were Once Made from Trees; Now They Are Made from Recycled Paper

Sustainable Publishing – New Environmental Standards for the Publishing Industry

Period: 08/2011 – 12/2012

Supported by: Federal Environment Agency, Dessau

Cooperation Partners: oekom, Munich; Institute for Energy and Environmental Research (IFEU), Heidelberg; Frankfurt Book Fair Ausstellungs- und Messe GmbH, Frankfurt am Main

Printed paper is an everyday item for most people, whether it is in the form of a newspaper, a book or a brochure. There are many ways of making printed material more environmentally friendly. From pulp used in production to distribution to the disposal of publications, finite resources can be replaced by renewable ones, substances that are harmful to the environment can be avoided, emissions can be decreased, and energy consumption, waste water and waste material can be reduced. However, we are still a long way from making publishing products that are completely climate neutral and environmentally friendly.

Active environmental protection and sustainability have long been the order of the day for publishers. The demand for green products has rocketed and environmentally-friendly alternatives are proving to be very profitable for companies. Nevertheless, very few publishers know what their own products' carbon footprint is. That is because this information – which has always been rather patchy – is not available anywhere in consolidated form. However, this is about to change.

The project 'Sustainable Publishing – New Environmental Standards for the Publishing Industry' aimed to make publishers aware of their responsibilities to society, formulate tangible requirements for sustainable publishing and communicate these to the entire industry. The main focus was on paper use and printing processes, two topics that are particularly important for environmental protection. The first step was to identify environmental protection approaches and standards in publishing and printing that already exist and are being applied. They include the ecolabels Blauer Engel (Blue Angel), Österreichisches Umweltzeichen (Austrian Ecolabel) and the EU Ecolabel. They were then examined to see whether they included requirements for sustainable paper purchasing and printing processes as a matter of principle and whether these requirements could be considered sufficient.

The study revealed that there is currently no standard that comprehensively sets out and fulfils requirements for sustainable printing paper and printing processes. Even the EU Ecolabel for printed paper products, which was introduced in August 2012, is insufficient from the project partners' point of view.

For this reason the project team developed sustainability requirements and discussed them in detail at subject-specific expert workshops and several industry events with stakeholders from the publishing industry. The sustainability requirements for paper were developed by the Institute for Energy and Environmental Research. The IÖW developed sustainability requirements for printing processes.

The basics of sustainable publishing at a glance:

- The use of certified recycled paper protects valuable resources and globally reduces the pressure on an important carbon sink – the forest.
- If it is necessary to print on paper containing virgin fibre, that fibre must be obtained from verifiably certified sustainable forest management.
- VOC emissions caused by printing and the cleaning of presses and other equipment should be minimised in order to prevent the formation of ground-level ozone.
- Sustainably-operating paper mills and printing plants practise energy management. They use renewable energy sources and continually reduce their energy consumption – for example by means of industrial heat-power cogeneration (CHP) and/or by using waste heat.
- No genetically modified ingredients or parts are used in paper production or in printing processes.
- The use of printing inks free of mineral oils must become a standard procedure in the near future.
- Sustainable products encourage regional substance flows and require transport only over short distances.

These and further 'Requirements for Sustainable Printing Paper and Printing Processes' were presented at the Frankfurt Book Fair in October 2012. They are summarised in the brochure *Ideas for Greener Pages*.

Further information: www.nachhaltig-publizieren.de

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Better Reporting to the Global Compact – IT-Based Tools

Adapting and Monitoring the Implementation of an IT-based Reporting Tool for Global Compact Reporting
Period: 06/2012 – 11/2012
Supported by: GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit), Bonn and Eschborn

How can the efficiency and quality of companies' annual reporting to the UN Global Compact be improved? This was the initial stimulus for a project which supported the German Global Compact Network (GGCN) during the adaptation and implementation of a reporting tool for companies' annual 'Communication of Progress' reports to the Global Compact.
The reporting tool was based on an existing reporting tool developed by the Spanish Global Compact Network. The older tool was adapted to make it more attractive to small and medium-sized member companies of the Global Compact and to make it easier to use in the German context. To that end, the content and structure of the tool was harmonised with the Level C reporting requirements of the Global Reporting Initiative and the German Sustainability Code. Subsequently, the tool was tested by selected member companies of the GGCN, who submitted detailed feedback via questionnaires. All of the companies stated that the tool had added value for their work and that they intended to use it for future reporting. Further positive feedback included comments that the tool was straightforward and easy to use – factors deemed important for quality assurance and diffusion, especially among small and medium-sized companies. In due course the IÖW formulated suggestions for the final version of the tool and recommendations for a broader implementation among the member companies of the German Global Compact Network, who can now obtain the final reporting tool from the GGCN.

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Further Projects

IÖW/Future-Ranking of Sustainability Reports 2011
Period: 12/2010 – 02/2012
Supported by: Federal Ministry of Labour and Social Affairs, Berlin; Rat für Nachhaltige Entwicklung (RNE), Berlin

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Natural Value – Close-to-Nature Company Premises as an Introduction to Environmental Management which Promotes Biodiversity
Period: 11/2012 – 12/2014
Supported by: Federal Agency for Nature Conservation (BfN), Bonn

Selected Publications and Presentations

Barkemeyer, Ralf; Liesen, Andrea (forthcoming)
Stakeholders of Responsible Investment – The Natural Environment
in: The Handbook of Responsible Investment, Routledge, London

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Hahn, Tobias; Figge, Frank; Liesen, Andrea (2012)
Assessing Trade-Offs in Investments for the Environment – The Case of a VOC-Reduction Investment at AUTO Group
in: Corporate Social Responsibility and Environmental Management, 19(2), 2012, pp.114-128

Hoffmann, Esther (2012)
Presentation **'Making Sense of Climate Risks. Organizational Response to Climate Change Risks'**
EGOS Colloquium 2012: Climate Risks, 06 July 2012, Helsinki/Finland

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Hoffmann, Esther (2012)
Presentation **'Adapting Utilities to Climate Change – Challenges, Conflicts and Barriers in Germany'**
Nordic Adaptation Conference, 29-31 August 2012, Helsinki/Finland

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Liesen, Andrea; Figge, Frank; Hahn, Tobias (2013)
Net Present Sustainable Value: A New Approach to Sustainable Investment Appraisal
in: Journal of Strategic Change 22(3-4), 2013, pp. 125-239

Oxenfarth, Anke; Schwerthöfer, Kajsa; Schorb, Achim; Müller, Ria; Reichard, Almut (2013)
Ideas for Greener Pages
E-Paper. Download: www.nachhaltig-publizieren.de

Rotter, Maja (2012)
Presentation **'Limiting Factors for a Robust Railway System: The Case of Germany'**
Chameleon Workshop on Barriers to Adaptation, Chameleon Research Group, 19 September 2012, Berlin

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Ziegler, Rafael; Gebauer, Jana (2012)
Ideas Changing Minds or Money Changing Hands? Development cooperation support for social innovators is an opportunity that calls for a focus on social and ecological funds and the networks that regenerate and sustain them
in: Stanford Social Innovation Review Blog (www.ssireview.org/blog)

Event

18-21 September 2012
Chameleon Research Workshop on Barriers to Adaptation to Climate Change
Workshop
Berlin, 30 participants

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Further Publications: www.ioew.de/en

TOPIC

Recent Trends: Biomimetics in Economics and Business

Literature Review: Biomimetics in Economics and Business
Period: 08/2010 – 01/2011
Supported by: Federal Agency for Nature Conservation (BfN), Bonn
Cooperation Partner: Prof. Dr Arnim von Gleich, Bremen

Since the world of finance and business has had to fight for its existence in recent years, theorists as well as practitioners have been looking for solutions or at least explanations for these disruptive crises. By drawing on biomimetics, one significant path was identified in concepts that originally came from biological and ecological disciplines and seem to provide explanatory potential for economic applications.

The IÖW's literature review of *Biomimetics in Economics and Business* was the first attempt to develop a systematic overview of the adoption of biomimetics in the fields of economics and management science. The broad-based literature study identified relevant biomimetic concepts, methods and design approaches in the field of economics and evaluated them with regard to their specific capabilities and limitations. The analysis focused on close analogies in the explicit use of biomimetic concepts. In addition, more implicit references between explanatory approaches in natural and economic science were analysed, e. g. the managerial application of concepts such as self-organisation, resilience and swarm intelligence.

As a result, the study shows that 'learning from nature' seems to be a fruitful approach to business and management science when there is increasing complexity, uncertainty, and accelerated market change. Since these conditions reflect the major challenges for contemporary business organisations, it can be assumed that the trends identified in this study will be consolidated in the future and may become more relevant.

Download (German only): www.ioew.de
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Production and Consumption 2.0

The Potential of Advanced Technological, Decentralised and Personalised Production against the Background of a Low Carbon Economy

Period: 07/2010 – 06/2013

Supported by: Federal Ministry of Education and Research (BMBF), Bonn

Sustainable development requires new modes of production and consumption. This project investigated the role of technological and social innovations as potential enablers of such a transformation. Based on the reconstruction of past shifts of manufacturing paradigms, the researchers analysed nascent alternatives to mass production and consumption in the light of two technological trends: the rise of Web 2.0 and the rise of digital fabrication technologies such as 3D printers. The team assessed the economic and ecological potential of these technologies and how they trigger organisational shifts, empowering customers and turning them into 'makers' – DIY enthusiasts equipped with high-tech tools.

The results show how the interplay of Web 2.0 and digital fabrication could lead to a new paradigm of 'social fabrication'. This new paradigm promises a radical decentralisation of production and consumption, which could also imply more sustainable material flows. The empirical analysis, however, also identified several barriers for such a scenario, such as the technological limitations of digital fabrication itself and the expansion of online-based customisation as an alternative to regionalised and personalised forms of production. To exploit the ecological and economic potential of social fabrication a carefully-designed policy is needed to address these challenges. A book on the findings will be published in autumn 2014.

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Selected Publications and Presentations

Dickel, Sascha (2012)
Presentation **'The Unknown Future. What Kind of Expertise is Possible?'**
Conference 'Design and displacement', Society for Social Studies of Science (4S) and European Association for the Study of Science and Technology (EASST)
18 October 2012, Copenhagen/Denmark

Dickel, Sascha (2012)
Presentation **'How Technologies Make Us Responsible. 3D Printing, Social Media, Enhancement'**
Conference 'Precarious Responsibility. Functions and Mechanisms of the Attribution of Responsibility under Conditions of Trust in Systems', University of Bielefeld & Deutsche Forschungsgemeinschaft (DFG), 23 October 2012, Bielefeld

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Scholl, Gerd; Petschow, Ulrich; Ferdinand, Jan-Peter (2012)
Deliberating Converging Technologies. An International Comparative Perspective on Public Engagement with Emerging Technologies
In: International Journal of Emerging Technologies and Society, Vol. 10, 2012, pp.: 1-5

Scholl, Gerd; Petschow, Ulrich (2013)
Overview of a Set of Deliberative Processes on Nano
In: Strandbakken, Pal; Scholl, Gerd; Sto, Eivind (eds., 2013): Consumers and Nanotechnology: Deliberative Processes and Methodologies, Pan Stanford Publishing, Singapore, pp. 17-26

Stieß, Immanuel; Dunkelberg, Elisa (2013)
Objectives, Barriers and Occasions for Energy Efficient Refurbishment by Private Homeowners
In: Journal of Cleaner Production, 48, pp. 250-259

Strandbakken, Pal; Scholl, Gerd; Sto, Eivind (eds., 2013)
Consumers and Nanotechnology. Deliberative Processes and Methodologies
Pan Stanford Publishing, Singapore

Further Projects

Adaptive Support Device/Textile with Pressure Controlled Stiffness and Integrated Sensor Technologies Inspired by the Human Skin
Period: 06/2009 – 05/2012
Supported by: Federal Ministry of Education and Research (BMBF), Bonn

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Optimisation of a New Membrane Process for Upgrading Biogas for Injection into the Natural Gas Distribution Grid
Period: 10/2012 – 12/2014
Supported by: Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), Berlin

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Water and Land Management

TOPIC

Fair Fuels? Biofuels between a Dead-End and the Energy Transition

Period: 05/2008 – 06/2014
Supported by: Federal Ministry of Education and Research (BMBF), Berlin
Cooperation Partners: Institute for Latin American Studies (LAI) of the Freie Universität Berlin; German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE), Bonn

The production of biofuels has been a controversially-debated issue in recent years, not only in the scientific community but also in society at large. At the centre of the 'food or fuel' debate is the competition of biofuels with food production. Nevertheless, the positive climate-protection effects of biofuel production are contested. The biofuel policies of several industrialised countries as well as emerging economies and developing countries have led to a growing biofuels market with far-reaching ecological and social implications. Since 2009 the team from the 'Fair Fuels?' project has dedicated itself to analysing policies, discourses and conflicts as well as potential benefits and risks with regard to biofuels production, working from a transnational and interdisciplinary perspective. Empirical findings from three international country case studies in Latin America (Brazil and Columbia), Africa (Malawi and Tanzania) and Europe (the European Union and Germany) are interlinked with cross-cutting issues such as changes to current North-South relations, environmental impacts and governance issues.

In the Brazilian case study, questions regarding land access and land use were examined in the context of the Brazilian Program for the Sustainable Production of Palm Oil. The existing land use patterns can be outlined as a form of 'green grabbing', especially by transnational agricultural corporations legitimised by environmental and climate considerations. In the Malawi case study an on-site analysis of the only large-scale biofuel production plant in Sub-Saharan-Africa was performed, with a focus on the socio-economic effects of biofuel production. The results show that there are indeed possibilities for production relationships from which workers and small-scale farmers can profit. Yet such a positive production relationship is dependent on a series of complex contextual factors such as local site conditions, supply chain design and supporting policies and institutions. For this reason the same positive effects could not necessarily be transferred to comparable regions.

The German case study also depicts the globalisation and expansion of biofuels policy, which has developed from an incented agricultural niche product to become part of global environmental, financial and agricultural policy. This development process is accompanied by a changeover to the regulatory instruments preferred in these arenas, such as quota systems. In addition the dominant actors have changed from small businesses to transnational companies. Attempts to limit the sustainability problems of biofuels via regulatory measures in the shape of sustainability criteria and joint certification systems have been critically analysed. The findings from the case study countries as well as a specific analysis of the impacts and avoidance opportunities of indirect effects in these countries have exposed the limits of this regulatory approach.

As a preliminary result it can be noted that current biofuel policies cannot ensure sustainable production on an international scale. The chosen instruments fail to specifically target the improvement of the social and ecological situation. Socio-ecological problems such as poor working conditions, poverty and risks to biodiversity and rainforests are intensified rather than reduced. As biofuel production is still expanding, these problems should be targeted directly.

Preliminary findings from the 'Fair Fuels?' projects were presented at a well-attended conference in April 2013 in Berlin. Further information on the project is available at: www.fair-fuels.de

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Valuing Agricultural Landscapes

Interdependencies between Land Use and Climate Change –
Strategies for Sustainable Land Use Management in Germany (CC-LandStraD)
Period: 11/2010 – 10/2015
Supported by: Federal Ministry of Education and Research (BMBF), Berlin
Several Cooperation Partners

Land use management has far-reaching impacts on the climate but also on many ecosystem services. At the same time, it has to be adjusted to the effects of climate change itself. To achieve more sustainable land management practices that find broad acceptance among the German population, different societal interests have to be weighed against each other. The aim of the sub-project, carried out by the IÖW, is to assess direct and indirect costs and benefits of land use options that have to be adjusted to climate change. The results will be integrated into a cost-benefit analysis of sustainable land use strategies. For this purpose, the IÖW has developed a methodological framework, applying the interdisciplinary and internationally-accepted concept of 'ecosystem services'.

Agricultural landscapes are not only good for food production. They are also important for nutrient cycling and retention, climate regulation and also for recreation. Exemplary land use measures are being implemented in two German focus regions. They may serve as a blueprint with regard to climate-adjusted land management for other European countries with similar land use systems.

To prepare one of the largest German online surveys on the economic valuation of ecosystem services of agricultural and forested landscapes, the IÖW conducted a pre-study that included several focus group discussions about land use management and perception of landscapes in Germany. Additionally, a two stage pre-study was conducted to test the survey for perceivability and comprehensibility. The survey was carried out in cooperation with the Thünen Institute of Forest Economics, Hamburg, and the Technische Universität Berlin.

The questionnaire for the main study includes a choice experiment on selected ecosystem services affected by potential land use measures and a non-monetary valuation of landscape images. In addition, there are questions about perception of and attitudes to biodiversity and agriculture as well as recreation and the demographic characteristics of respondents.

The interviewee is offered attributes of a described landscape. Each attribute relates to particular – mainly cultural – ecosystem services. Exemplary attributes used in the choice experiment are: the share of agricultural land and forest, the proportion of meadows and grazing land, biodiversity in agricultural landscapes with birds as a diversity indicator, the proportion of hedges at field margins and margins of grasslands, the proportion of maize in agricultural fields, and the state of land consumption. Preliminary results reveal that preferences vary strongly between individuals and are sometimes opposed. Nevertheless, we observe an overall positive willingness to pay for more sustainable land management strategies, adding up to several billion euros per year for Germany. The initial results of the project and conference documentation relating to the project are available at www.cc-landstrad.de/en.

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Selected Publications and Presentations

Hirschfeld, Jesko; Hoffmann, Esther (2012)
Presentation **'Stakeholder Involvement Approaches and Practical Examples from Germany'**
Workshop 'Approaching National Adaptation Strategies to Climate Change in the Baltic States', 29-30 May 2012, Tallinn/Estonia

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Rajmis, Sandra (2012)
Presentation **'Economic Valuation of Ecosystem Services – A Case Study in Germany'**
Charles University Environment Center (CUEC) and CzechGlobe – Global Change Research Center, 24-27 April 2012, Prague/Czech Republic

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Vogelpohl, Thomas (2012)
Presentation **'The Social Construction of a Mandatory Quota for Biofuels in Germany'**
International Workshop 'Beyond Efficiency – Exploring the Political and Institutional Dimensions of Market-Based Instruments for Ecosystem Services', 13-14 March 2012, Berlin

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Vogelpohl, Thomas (2012)
Presentation **'The Discursive Construction of Sustainable Biofuels in Germany and the EU'**
Conference '7th International Conference in Interpretive Policy Analysis: Understanding the Drama of Democracy. Policy Work, Power and Transformation', 05-07 July 2012, Tilburg/Netherlands

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Vogelpohl, Thomas; Dunkelberg, Elisa (2012)
Presentation **'The Production of Scientific Evidence on Indirect Land Use Change and its Role in EU Biofuels Politics'**
Berlin Conference on Evidence for Sustainable Development, 05-06 October 2012, Berlin

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Vogelpohl, Thomas; Hirschl, Bernd; Meßmer, David (2012)
Presentation **'The Institutional Sustainability of Public-Private Governance Arrangements'**
Lund Conference on Earth System Governance – Towards a Just and Legitimate Earth System Governance: Addressing Inequalities, 18-20 April 2012, Lund/Sweden

Further Projects

Water Flows in Germany
Period: 10/2011 – 12/2013
Supported by: Federal Ministry of Education and Research (BMBF), Berlin

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Regional Adaptation Strategies for the German Baltic Sea Coast (RADOST)
Period: 07/2009 – 06/2014
Supported by: Federal Ministry of Education and Research (BMBF), Berlin

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Research on Coastal Waters: Joint Research Project SECOS: The Service of Sediments in German Coastal Seas; Project: Monetary Evaluation
Period: 04/2013 – 03/2016
Supported by: Federal Ministry of Education and Research (BMBF), Bonn

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TOPIC

Getting Things Done Sustainably – The GETIDOS Project

Period: 05/2009 – 12/2013
Supported by: Federal Ministry of Education and Research (BMBF), Berlin
Cooperation Partner: Ernst Moritz Arndt University of Greifswald

In 2000, the United Nations formulated global targets for combating extreme poverty in the form of eight Millennium Development Goals (MDGs). These include the commitment to halve the proportion of the population without access to safe drinking water and basic sanitation by 2015. It is foreseeable that this goal will not be achieved with the traditional institutions and instruments of development and economic policies. New actors are thus required. Under the umbrella term of 'social entrepreneurship', they are also the subject of scientific interest. Social entrepreneurship focuses on individuals, organisations and networks which tackle local and regional problems and link innovative solutions for these problems – albeit not primarily – with the generation of income. They thus differ from both traditional companies and civil society organisations, although the boundaries are fluid.

The GETIDOS group is studying these new actors and discussing the contribution that they could make to the MDG target for drinking water: what role do social entrepreneurs play in the water sector, what impact can their locally-launched ideas have in the face of global social and environmental problems, and what can they contribute to sustainable development? To examine whether or not the approaches of social entrepreneurship initiatives offer a promising addition to existing actors and their strategies and instruments, the GETIDOS team conducted several qualitative case studies. Initiatives from Kenya, India, Ecuador, Slovakia, France and Germany were studied. These initiatives cover a range of areas e.g. building and running public toilets, political campaigning and networking, and selling bottled water to raise money for development cooperation projects.

GETIDOS' aim is to offer an integrative social-ecological perspective on social entrepreneurship. To this end, the team developed an evaluation approach that integrates findings and methods from the fields of business management, ecohydrology, philosophy, political science and environmental engineering, and the knowledge of the social entrepreneurs themselves. The resulting case studies deal with the central questions of the innovativeness and scalability of the various approaches, the possibility and desirability of generating market-based income and, above all, the actors' social and environmental responsibility.

The case-study results were discussed separately with the initiatives' representatives in order to get their feedback, but also to encourage further progress. In addition, core topics that applied to several of the initiatives analysed – such as the management of water catchment areas or the mobilisation of certain social interest groups – were discussed jointly. This process made it clear that social entrepreneurs could benefit greatly from cooperating with each other and from sharing their knowledge. On the basis of the individual results of the analysis and supported by the GETIDOS team, they thus explored options for cooperation. The aim was to use the complementary knowledge of the respective initiatives for mutual support and for their development. The implementation of the chosen forms of cooperation can still be observed during the course of the project. As well as having a very tangible impact on the practical side of social entrepreneurship, the project has also generated scientific contributions by the team members, which feed into fields such as evaluation research in development cooperation and management research at the interface of social entrepreneurship and corporate social responsibility.

Further information: www.getidos.net
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Is There Sustainable Justice?

Utilisation of the Current Debates on Social Welfare for Environmental Justice and Conclusions for Political and Societal Transformation – Concepts of Social Welfare and Environmental Justice

Period: 09/2011 – 11/2012

Supported by: Federal Environment Agency, Dessau

Cooperation Partners: Protestant Institute for Interdisciplinary Research (FEST), Heidelberg; Environmental Policy Research Centre (FFU) at the Freie Universität Berlin; Institute for Advanced Study in the Humanities (KWI), Essen; Ethics Institute, Utrecht University, Utrecht

Since the Brundtland Report and the Rio Conference shaped the concept of sustainable development, there has been a growing discussion about the questions of intragenerational and intergenerational justice. While sustainable development has become an established concept over the past two decades, less importance is now given to the central idea of justice within the concept of sustainable development. Why is that, and how can the basic idea of justice make a comeback? This project aimed to answer these questions. First of all the ethical lines of argument of ecological justice were analysed. The project team then looked at how aspects of ecological justice are used in the current transformation and welfare discourses. This is extremely relevant, particularly since environmental policies such as climate protection – as well as biodiversity protection, among other things – require far-reaching changes to be made at the societal and individual levels. The question of how exactly such a transformation can take place is linked to distributional concerns. Against this background it becomes clear that environmental policy is becoming social policy and questions of justice are coming to the fore. Thus societal changes for the purpose of sustainable development are on the one hand motivated by questions of justice and on the other hand they have to incorporate aspects of justice in the steps towards transformation.

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Defining Requirements for Policy-Relevant Sustainability Research

Improving Strategic Environmental Policy Consultancy in the Context of the General Principle of Sustainable Development – Study and Professional Dialogue about Approaches and Utilisation Perspectives of Environmental and Sustainability Research

Period: 09/2011 – 09/2012

Supported by: Federal Environment Agency, Dessau

Cooperation Partners: Institute for Social-Ecological Research (ISOE); Environmental Policy Research Centre (FFU) at the Freie Universität Berlin

The 'great transformation' to sustainable development is a task for the whole of society. Science and research are also important for sustainable development – this is now increasingly being recognised. The knowledge provided by sustainability research does not only have to be verified; it must also be usable and thus applicable to other disciplines. Scientific contributions from specific disciplines are no longer sufficient. In particular this is true for the kinds of research that aim to provide policy advice. As part of this project the team developed requirements for policy-relevant sustainability research, just like those that exist in other scientific disciplines.

Firstly the international discourse of 'sustainability sciences' was examined. The team also analysed the sustainability-oriented research landscape and research projects in selected subject areas and discussed the results with researchers and further representatives. The project was supported by an advisory committee or 'dialogue forum', which included representatives from research funding organisations and research institutions. As a result, requirements for politically-relevant sustainability research were developed, which were published in a guide and discussed at a conference.

The guide *Policy Relevant Sustainability Research: Requirements Profiles for Research Funding Agencies, Researchers and Policy-makers Regarding Improving and Ensuring Quality of Research – A Guide* can be downloaded at: www.umweltbundesamt.de

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Selected Publications and Presentations

Conrad, Jobst (2012)
Presentation **'The Discourse on Sustainable Development: How Political and Scientific Codes Go along with Each Other'**
Berlin Conference on Evidence of Sustainable Development, 06 October 2012, Berlin

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Dunkelberg, Elisa (2012)
Presentation **'Sugarcane Ethanol Production in Malawi – What Can We Learn Regarding the Environmental Perspective?'**
Africa Berlin International Conference 2012, 27-31 August 2012, Berlin

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Gebauer, Jana (2012)
Presentation **'GETIDOS – Introduction to the Project and the Conference'**
GETIDOS Conference 2012, University of Greifswald and IÖW, 16 September 2012, Frankfurt am Main

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Hirschl, Bernd; Kaphengst, Timo; Neumann, Anna; Umpfenbach, Katharina (2012)
Science Policy Interface and the Role of Impact Assessments in the Case of Biofuels
in: Sustainable Development, Evaluation and Policy-Making – Theory, Practise and Quality Assurance, pp. 151-172.

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von Raggamby, Anneke; Rubik, Frieder (eds., 2012)
Sustainable Development, Evaluation and Policy-Making Theory, Practise and Quality Assurance
Edward Elgar Publishing Ltd, Cheltenham, UK, Northampton, MA, USA;
ISBN-Nr: 978 0 85793 254 9

Vogelpohl, Thomas; Dunkelberg, Elisa (2012)
Presentation **'The Production of Scientific Evidence on Indirect Land Use Change and its Role in EU Biofuels Politics'**
Berlin Conference on Evidence for Sustainable Development, Berlin, 05-06 October 2012

Ziegler, Rafael; Karanja, Benson; Dietsche, Christian (2012)
Toilet Monuments: An Investigation of Innovation for Human Development
In: Journal of Human Development and Capabilities 2012, pp. 1-21

Further Projects

Economics of Climate Change Adaptation – Integrated Economic Modeling and Institutional Analysis at Different Scale Levels (econCCadapt)
Period: 10/2011 – 09/2014
Supported by: Federal Ministry of Education and Research (BMBF), Berlin

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Climate Change in Germany: Adaptive Capacity and Transformation Paths towards a Resilient Society
Period: 10/2011 – 12/2014
Supported by: Federal Environment Agency, Dessau

Qualification Structure and Requirements in Environmental Protection
Period: 01/2013 – 03/2015
Supported by: Federal Environment Agency, Dessau

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TOPIC

From Facebook to Festivals: Social Marketing Instruments and Their Impact

Social Innovation and its Diffusion:
Social Marketing and Social Entrepreneurship
Period: 04/ 2010 – 03/2012
Supported by: Stiftung Mercator, Essen
Cooperation Partner: Ernst Moritz Arndt University of Greifswald

"We're the people who actually make an impact in changing the world for the better – we leave just endlessly talking about it to other people". This is how the individuals who run the online donor forum Betterplace describe their organisation. It is a good example of the attitude behind many social entrepreneurship initiatives. Social entrepreneurs are characterised by their entrepreneurial approaches to solving social problems. In this way they attempt to contribute to far-reaching social change.

The aim of the research project was to identify success factors for innovative social entrepreneurship. Alongside Betterplace two further case studies were examined: the initiative Viva con Agua, which aims to improve drinking water provision in developing countries, and co2online, which has been using campaigns and consumer information to encourage people to save energy and protect the climate since 2003.

The project focused on the mechanisms of social marketing in particular and considered the question of how social enterprises manage to persuade people to take action e.g. making donations or making major changes to the way they live their lives. In order to understand the mechanisms of social marketing in these areas, the project team carried out interviews with employees of the initiatives being studied and important cooperation partners. In addition, online surveys were used to record the effect of social marketing among the initiatives' target groups. The researchers then used the findings to come up with recommendations for courses of action that social entrepreneurship initiatives could take.

The research team was able to identify several success factors for social entrepreneurship initiatives. It became apparent that the particularly successful initiatives employ a positive message to motivate their target groups and suggest tangible activities, thus empowering them to take action for themselves. To communicate with their target groups social entrepreneurship initiatives use social media such as Facebook or Twitter to a large extent. Using social media in different ways can help support the dissemination of knowledge and information, however it does little to make users feel emotionally connected to organisations and their messages. Personal communication with the target group, via existing social networks or events, is much more important here. The way in which Viva con Agua implements this strategy is particularly systematic: the initiative makes contact with its target group at festivals and other exciting events that offer a very favourable environment for directly addressing the group with an emotional message.

In many cases the initiatives studied as part of the project manage to get their supporters more involved by recommending actions that are easy to implement. Other initiatives that wish to bring about social change by changing people's behaviour and attitudes may benefit from the social marketing strategies identified by this project.

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Raising Awareness of Climate Risks among Stakeholders

Stakeholder Dialogues: Adaptation to Climate Change
Period: 09/2011 – 01/2015
Supported by: Federal Environment Agency, Dessau
Cooperation Partner: e-fect dialog evaluation consulting eG, Trier

Besides climate protection German politics is increasingly focusing on adapting to the inevitable consequences of climate change. This can be seen in the German Adaptation Strategy of 2008 and in the Adaptation Action Plan of 2011. The development and implementation of these plans is accompanied by a large-scale communication campaign. Together with the relevant actors, the needs and options for climate change adaptation should be identified and communicated broadly. In this context the IÖW has been running a series of stakeholder dialogues on behalf of the Competence Centre on Global Warming and Adaptation at the Federal Environment Agency since 2009.

The first dialogues dealt with climate-change-related risks and adaptation requirements for individual sectors. Currently, the dialogues are focusing more on cross-cutting issues related to adaptation. Risk management was the main topic in 2012. Each of the dialogues dealt with key approaches and challenges, possible courses of action and responsibilities in risk management processes.

In the 'Corporate Risk Management' dialogue the IÖW and stakeholders discussed possible corporate approaches for systematically dealing with the risks of climate change. For businesses the main challenge is how to deal appropriately with the uncertainties of climate change projections. Additionally, understanding and analysing risks is a resource-intensive process and is particularly difficult for smaller companies. Large companies can pave the way here.

The stakeholder dialogue 'Risk Management in Planning Processes' presented a concept for public planning. Here, ways to implement an integrated approach to risk management as well as to a more systematic exchange of information among the many actors involved in planning processes were discussed. Regional development planning was considered to have a central, guiding role. While the respective actors must be prepared for this task, further responsibilities at the individual planning levels must also be clarified.

In the dialogue 'Adaptation to Climate Change in Municipalities' new administrative structures that promote the development of adaptation strategies were presented. The idea of appointing specific representatives for climate-change adaptation was discussed, along with possibilities for cooperation between different departments. Ideas like this have only been implemented in a few municipalities so far, but they could form the basis for the employment of adaptation instruments. It was made clear that there was specific need for assistance from municipal umbrella organisations, the federal government and the federal states.

The nationwide dialogue 'Is the Climate-Change Risk under Control?' at the end of 2012 merged the discussions from the other dialogues. It dealt with public and private risk management in the area of climate change and was held at the Federal Environment Agency in Dessau. For two days, over 100 participants discussed specific adaptation challenges e.g. in public utilities, the private sector, coastal areas and urban areas. In addition, they developed a conceptual basis for implementing risk management processes.

At the first Climate Change Adaptation Conference in March 2013 in Hamburg the IÖW presented the results and experiences concerning the involvement of stakeholders in research and policy making on climate-change adaptation.

Documents from all the stakeholder dialogues (German only) can be found at:
www.anpassung.net/dialog

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Selected Publications and Presentations

Hoffmann, Esther (2012)
User Integration in Sustainable Product Development. Organisational Learning through Boundary-Spanning Processes
Greenleaf, Sheffield, ISBN-Nr: 978-1-906093-69-3

Rotter, Maja; Hoffmann, Esther; Hirschfeld, Jesko; Schröder, André; Mohaupt, Franziska; Schäfer, Laura (2013):
Stakeholder Participation in Adaptation to Climate Change. Lessons and Experience from Germany
Climate Change 12/2013, Federal Environment Agency
Download: www.umweltbundesamt.de

Rotter, Maja; Hoffmann, Esther (2013)
Presentation **'Making Sense of Climate Risks: Organizational Adaptation to Climate Change'**
European Climate Change Adaptation Conference (ECCA), 18-20 March 2013, Hamburg

Further Project

Climate-Residents. New Roles, Chances and Responsibilities of Citizens in the Transformation of the Energy System
Period: 04/2013 – 03/2016
Supported by: Federal Ministry of Education and Research (BMBF), Berlin

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Copenhagen Business School (CBS), Copenhagen, Denmark
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Finnish Ministry of the Environment, Helsinki, Finland
Fondazione Eni Enrico Mattei (FEEM), Trieste, Italy
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Institute for Development Policy and Management (IDPM), Manchester, Great Britain
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Institute for European Environmental Policy (IEEP), London, Great Britain
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European Commission, Directorate-General for the Environment (ENV), Brussels, Belgium
European Commission, Directorate-General for Health and Consumer Protection (SANCO), Brussels, Belgium
European Commission, Directorate-General for Regional Policy (REGIO), Brussels, Belgium
European Commission, Directorate-General for Research (RTD), Brussels, Belgium
United Nations Environment Programme (UNEP), Paris, France

The Scientific Journal

Ökologisches Wirtschaften

In 1986 the IÖW started to publish its own journal, in cooperation with the Association for Ecological Economic Research (VÖW). Since 1996, it has appeared quarterly under the title *Ökologisches Wirtschaften* ('Ecological Economy'), published by the oekom Publishing Company in Munich. Its goal is to strengthen the scientific debate and disseminate research results to a specialist readership.

Ökologisches Wirtschaften presents the scientific foundations for a link-up between ecology and economy, describes the political and social framework conditions for sustainable management and discusses the resulting practical challenges for companies. The concept of the journal is unique: it confronts recent findings in the scientific arena with concrete experiences from politics and industry – an exciting and, at the same time, important and productive encounter for all stakeholders. At www.oekologisches-wirtschaften.de the journal's open access portal offers downloads of over 1000 scientific articles from 1986 to the present day. The journal is published in German but it regularly includes English-language articles as well.

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No. 4/2012: Between Green Economy and Post-Growth
No. 3/2012: Sustainability in Climate Change

Publisher:
Institute for Ecological Economy Research (IÖW),
Association for Ecological Economic Research (VÖW)
oekom Verlag, Munich

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