



SCIENCE CENTRE NORTH RHINE-WESTPHALIA

**Wuppertal Institute for
Climate · Environment · Energy**

Annual Report 1998/1999

Short version

An extended version
is available in German at

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Imprint

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at the Science Centre North Rhine-Westphalia

Annual Report 1998/99

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Wuppertal 1999

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Introduction

There's always sunshine after rain ...

If, like insects, Institutes had the habit of shedding their skins, a rhythm of seven years might perhaps be appropriate. The Wuppertal Institute, at all events, has been experiencing such a process of radical change.

Once the leading flagship of the Institute, «Sustainable Germany» no longer raises the public interest the way it used to. Both its project managers, Reinhard Loske and Raimund Bleischwitz, have taken off to pastures new outside the Institute, Reinhard Loske as member of Germany's federal parliament, the *Bundestag*, where he is spokesman for environment and ecological fiscal reform with the green parliamentary party Bündnis 90/Die Grünen; Raimund Bleischwitz with the project group «Legislation for Common Goods» of the Max-Planck-Society. The much-discussed Factor-Four-Concept has entered the everyday speech and thought of engineers and managers, and requires but little backing from the Institute. Upon the retirement of Friedrich Schmidt-Bleek, the Factor 10 movement focusing on material intensity has developed a significant life of its own. The ecological tax reform, which the Institute had advocated from the day of its foundation, has finally passed the *Bundestag*, actively promoted by the new members Reinhard Loske and Ernst von Weizsäcker.

Considerable changes with regard to staff have kept the Institute on its toes: Lorenz Kneser, head of administration since the foundation of the Institute, has retired. His work was temporarily entrusted to the capable hands of Christian Radtke and, since September 1, 1998, to the new head of administration Brigitte Mutert. In November 1998, the director of the Climate Policy Division, Edda Müller, who had been with us since early in 1997, took on the honourable post of deputy director at the European Environment Agency in Copenhagen. Peter Bartelmus, New York, succeeded Friedrich Schmidt-Bleek as director of the Material Flow and Structural Change Division, and Ernst U. von Weizsäcker had to limit his working hours at the Institute in order to be able to fulfil his new duties as member of the German parliament.

The management of the Institute now has a new structure: Peter Hennicke was appointed vice-president, Brigitte Mutert head of administration. In this way, the Institute will continue to run smoothly in spite of Ernst U. von Weizsäcker, inevitable absences. In the course of reorganisation, the President's

research section has been added to the responsibilities of Harry Lehmann, hitherto head of systems analysis and hardware.

These surface changes were accompanied by a serious financial crisis, which, at first unnoticed, had been threatening the Institute since the middle of 1998. Strict budgeting and economizing, however, aided by a bridging loan advanced by our bank, steered the Institute back into calmer waters. In the course of a general overhaul, the causes of the financial crisis, which mainly lay in insufficient transparency, were uncovered and eliminated. A generous donation by the Swiss AVINA-Foundation of Dr. Stephan Schmidheiny has greatly helped solve the acute problems. Moreover, the Institute will benefit from the bequest of Dr. Vera Spahn and Dr. Georg Spahn of Köln/Breisach who died in February, 1999. The Institute also received a considerable sum from the bequest of Bernhard Rothfos, of Hamburg. These funds are for the time being held in trust by the Association of Friends of the Wuppertal Institute, thus ensuring long-term support for the Institute's work.

At a meeting of the International Advisory Board in June, 1998, a possible method for reviewing the Institute's performance was agreed on which could also become relevant for the organizational analysis planned by the Science Centre North-Rhine Westphalia.

There is ample evidence of the optimism and confidence again animating the Institute in the individual reports presented by the Divisions and Working Groups, some of which are now also available on the Institute's website. There is no need to add that the enthusiasm we feel for our work is the best guarantee for its quality.

Advisory Board and Supervisory Board

The Institute's International Advisory Board stands for the independence and scientific quality of the Institute. Inter alia, it gives advice on the research strategy of the Institute. It is chaired by Professor Dr. Hartmut Grassl, Director of the World Climate Research Programme of the WMO, Geneva, and Dr. Joan Davis, President of ECOROPA.

Under its Chairman, State Secretary Rüdiger Frohn, the Supervisory Board is increasingly concerned with the substance of the challenges posed by the Institute's future-oriented work, as well as its relevance for structural change in the industrial regions of North Rhine-Westphalia. The presence of four other deputy ministers on the Supervisory Board bears witness to the high level of interest shown by the NRW government in the Wuppertal Institute.

The members of the International Advisory Board are:

Dr. Stephan Bieri	Member of the Advisory Board of the Science Centre NRW's Institute for Work and Technology. Vice-President of Switzerland's Commission for Polytechnic Universities. Technological Universities.
Dr. Joan Davis	Deputy Chair of the Advisory Board. President, ECOROPA. Senior Fellow, EAWAG(Swiss Water Research Agency). Member of the Balaton Group.
Maneka Gandhi	Minister of Welfare (until April 1999), India.
Prof. Dr. Hartmut Graßl	Chairman of the Advisory Board. Since October 1994 Director of the WMO global warming programme. Director of the Max-Planck Institute of Meteorology, Hamburg, and former member of the Bundestag Select Committee »Protection of the Earth's Atmosphere«.
Prof. Dr. Eberhard Jochem	Deputy Director of the Fraunhofer Institute of Systems Analysis and Innovation Research, Karlsruhe. Lecturer at Kassel University

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- Prof. Dr. Thomas Johannsson Professor at the University of Lund, Sweden. Director of the Division for Energy Policies at the United Nations Environmental Programme UNEP.
- Jacqueline Aloisi de Larderel Director, Environment and Industry Office of UNEP in Paris. Member of the »Factor 10 Club«.
- Dr. Jim MacNeill Former Environmental Director of OECD. From 1984 to 1987 Secretary General of the World Commission on Environment and Development. Since 1994 Advisor to the UNDP Administrator.
- Prof. Dr. Klaus Michael Meyer-Abich Professor of Philosophy at the University of Essen. Former Minister of Science and Research in Hamburg. Former member of the Bundestag Select Committee »Protection of the Earth's Atmosphere«.
- Prof. Akio Morishima Chairman of the Board of Directors of the Institute for Global Environmental Strategies (IGES), Tokyo, Japan.
- Prof. Dr. Lydia Popova Director, Centre for Nuclear Ecology & Energy Policy, Moscow. Physicist and environmental activist.
- Prof. Hans-Joachim Schellnhuber Director of the Potsdam Institute for Climate Impact Research (PIK). Chairman, Federal Advisory Board on «Global Environmental Change».
- Dr. Klaus Steilmann (until May, 1999) Founder and Chairman, Steilmann Textiles, Bochum-Wattenscheid. Member of the Club of Rome.
- Nicholas Sonntag Director of the Stockholm Environment Institute; former fellow of the Institute for Sustainable Development, Winnipeg, Canada.
- Prof. Dr. Pier Vellinga Director of the Institute for Environmental Studies, Amsterdam. Former head of the Dutch government's global warming section and principal negotiator on the Framework Convention on Climate Change.

Dr. Michael P. Walsh Advisor to the US Federal Government on transport and the environment. Former Director of the Transport Department of the US Environmental Protection Agency.

The members of the Supervisory Board are:

State Secretary Rüdiger Frohn Chairman of the Supervisory Board. Head of the State Chancellery of North Rhine-Westphalia.

Georg Wilhem Adamowitsch State Secretary at the Ministry of Economy and Medium-Sized Companies, Technology and Transport of North Rhine-Westphalia.

Hanns Ludwig Brauser Head of Department of the State Chancellery of North Rhine-Westphalia.

Hans Georg Crone-Erdmann Executive Director, Association of Chambers of Commerce of North Rhine-Westphalia.

Dr. Joan S. Davis Deputy Chair, International Advisory Board.

Jochen Flasbarth President, Naturschutzbund Deutschland e.V., a federal environmental NGO.

Christiane Friedrich State Secretary for Environment, Spatial Planning and Agriculture of North Rhine-Westphalia.

Prof. Dr. Hartmut Graßl Chairman, International Advisory Board

Maria Huesmann-Kaiser Ministry of Labour, Social Welfare, City and Urban Planning, Culture and Sport of North-Rhine Westphalia

Prof. Dr. Gert Kaiser President of the Science Centre of North Rhine-Westphalia (WZN), Rector Magnificus, Düsseldorf University.

Dr. Wolfgang Lieb Deputy Chair of the Supervisory Board. State Secretary for Research and Science of North Rhine-Westphalia.

Manfred Morgenstern State Secretary for Housing of North Rhine-Westphalia.

Wolfgang Nettelstroth Trade Union Association of North Rhine-Westphalia.

Dr. Peter Wild Assistant Head, Ministry of Finance of North Rhine-Westphalia

The President

President Ernst U. von Weizsäcker

Office of the President

Head	Maryse Boitte Biermann	☎-101
Secretary	Monika Kieslich (since June 1998)	☎-269

Central Office

Head	Maryse Boitte Biermann	☎-101
Secretaries	Dorothea Frinker Jacqueline Sairawan Mary Walker Karin Wasserlos	
Student assistant	Tanja Hußmann	

Research Planning and Coordination

Head	Dr. Raimund Bleischwitz (on sabbatical since Jan 1999)	
Officer-in-Charge	Harry Lehmann (since March 1999)	☎-124
Research Fellow	Jan-Dirk Seiler-Hausmann	☎-102

Research planning and coordination fulfils cross-divisional management tasks in the immediate vicinity of the President. These include, amongst others, drawing up the research strategy, observation of the research landscape and conception of new subject fields, contact to donor and partner institutions, support of the International Advisory Board and some public relations work. A number of time-consuming tasks related to the general support of the President and the internal research-oriented communication within the Institute are attended to here.

Research Section of the President

Head	Harry Lehmann (since March 1999)	☎-124
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To assist the President, Harry Lehmann was appointed head of the President's research section early in 1999. The division he previously headed, Systems Analysis and Simulation (SuSi), has been integrated into the President's research section. The year 1998 saw the realization of the following projects:

Working Group Factor Four

Research Fellow	Jan-Dirk Seiler-Hausmann	☎-102
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Project

- »Factor Four+« Conference and Trade Fair, Klagenfurt, Austria, 17th-19th June 1998. *Contact: Ernst U. von Weizsäcker, Jan-Dirk Seiler-Hausmann*

Working Group Systems Analysis and Simulation

Fellows	Ulrike Brüggemann	☎-116
	Jürgen Elberich	☎-191
	Jürgen Mira	☎-146
	Thomas Walkowiak (until Sept 1998)	
Secretarial Office	Beate Schöne	☎-142
Student collaborators/ senior students	Brigitte Drees	☎-208
	Elke Hansen	
	Stefan Kröpel	
	Kosta Kolelis	
	Werner Lenhart	
	Martina Schmitt	
	Oliver Weckbrodt (until July 1998)	
Freelance Collaborators	Michael Hübner	

Fashioning our society in a more ecologically tolerable manner requires simultaneously finding solutions to problems in a variety of fields. This includes, inter alia, taking the path to »solar« energy management, the sustainable use of soils and surfaces, increasing material productivity, and ultimately, altering the amount and type of traffic. This and quite a bit more will all have to be realised at the same time.

Interdisciplinary research, cybernetic methods of systems analysis, model building and simulation are indispensable tools for defining the technical, planning-related, and economic prerequisites for ecological reform.

The fact that science today knows very little about the system we call »Earth« makes this all the more difficult. We have only just begun to explore a few of its many segments. Science can only say very little, and in most cases nothing, about how humankind's intervention will make itself felt; nor about the degree to which the ecosystem will react, nor about when and where. To be on the safe side, we should therefore strive to minimize the effect of our actions on this system, to avoid interfering with and altering natural systems. This principle of care must be the theme guiding all human action in order to achieve sustainable development.

Projects

- Scenarios of Sustainable Development. *Contact: Harry Lehmann*
- Resource – Optimised Building. *Contact: Harry Lehmann*
- Renewable Raw Materials/Energies. *Contact: Harry Lehmann*
- System Analysis of the BMBF Project »Ecologically Tolerable Mobility in Urban Regions«. *Contact: Harry Lehmann, Ulrike Brüggemann*

Computer hardware and software administration

Contact: Harry Lehmann, Jürgen Mira

Climate Policy Division

Organisation and Personnel

Director	Dr. Edda Müller (on leave since Nov 1998)	
Acting Director since Nov. 1998	Dr. Hermann E. Ott	☎-173
Deputy Director	Dr. Hans-Jochen Luhmann	☎-133
Senior Research Fellows	Dr. Reinhard Loske (until Oct 1998) Christiane Beuermann Bernhard Burdick Wolfgang Jung (until June 1998) Kai Schlegelmilch (until Dec 1998)	☎-170 ☎-110
Research Fellows	Michael Kopatz Stephanie Pfahl (May 1998 until Oct 1998) Michael Römer (until Dec 1998)	☎-148
Secretarial Office	Karin Gundlach Sabine Ochmann	☎-129 ☎-218
Student Assistant	Thomas Müller (until Dec 1998) Andrea Esken (until March 1999) Thomas Langrock (since March 1999)	

Profile

From the point of view of climate politics, the year was dominated by the Kyoto Protocol adopted at the Conference of the Parties (COP) on the Framework Convention on Climate Change, held in December 1997. The Kyoto Protocol is the first agreement to define legally binding limits for greenhouse gas emissions in industrial economies, and establishes the obligation — which has been differentiated for the various states concerned — to reduce the emission of six greenhouse gases by five percent over the period from 2008 to 2012, from the basis of their 1990 levels. An analysis of the results has been prepared by Hermann

Ott, and can be downloaded from the Wuppertal Institute's website at <http://www.wupperinst.org>.

The strengths and weaknesses of the Protocol became evident in the course of the year. In many respects, it is merely a framework, and leaves the specific agreements to the conferences the treaty parties are to hold in the future. In particular, instruments for the international implementation of the Protocol, such as international emissions trading or joint implementation, have only been outlined. At COP 4, held in November 1998 in Buenos Aires, the treaty parties agreed on a political schedule for the development of suitable instruments and the elaboration of an enforcement mechanism, which are to be presented by the year 2000, at COP 6.

Hermann Ott represented the Wuppertal Institute at COP 4, where he participated in a variety of events and advised the German Federal Government on a number of strategic and scientific issues. The Climate Policy Division of the Wuppertal Institute will continue to place its scientific knowledge at the disposal of the United Nations, the European Commission, the German Federal Government, environmental organizations and industry in general, in order to assist in the creation of the required instruments in line with the criteria of »ecological effectiveness«, »economic efficiency«, and »equity«.

Projects

Climate Policy

- Kyoto: Political and Legal Analysis of the Protocol (Cambridge UP, forthcoming). *Contact: Hermann Ott*
- Strategies for EU-leadership in international climate and sustainability regimes. *Responsibility: Reinhard Loske, Wolfgang Jung*
- Enhancing policy-making capacity under the Framework Convention on Climate Change. *Contact: Hermann Ott, Christiane Beuermann*
- Anglo-German Conference on Climate Policy, in cooperation with the Anglo-German Environment Forum. *Contact: Hermann Ott*
- Climate Policy in African States South of the Sahara (ELEARI): Scientific Advice and Capacity Building for Decision Makers. *Contact: Christiane Beuermann*

Instruments for the achievement of climate policy goals

- Joint Implementation and the Clean Development Mechanism. *Contact: Hermann Ott, Christiane Beuermann*
- International Emissions Trading. *Contact: Hermann Ott*
- Environmental Fiscal Reform. *Contact: Hans-Jochen Luhmann*

- Green Budget Reform in Central and Eastern European Countries – Case Study of Slovenia. *Responsibility: Kai Schlegelmilch*
- Ecotaxes in Luxembourg. *Contact: Hans-Jochen Luhmann*
- Research Network for Market-Based Instruments for Sustainable Development. *Responsibility: Kai Schlegelmilch*
- Environmental Fiscal Reform in Europe. *Responsibility*: Kai Schlegelmilch*
- Studies on environmental policy for the European Environment Agency. *Responsibility: Kai Schlegelmilch*
- Wuppertal Bulletin. *Contact: Hans-Jochen Luhmann, Kai Schlegelmilch*

Concepts for the Protection of the Biosphere

- Guidelines for Sustainable Development in the Nature Parks of the Rhineland-Palatinate. *Contact: Bernhard Burdick*
- Critical Natural Capital and the Implications of a Strong Sustainability Criterion (CRITINC). *Contact: Christiane Beuermann*

Regional Concepts for Sustainable Development

- Sustainable Urban Development Projects. *Contact: Christiane Beuermann, Michael Kopatz*
- Urban 21. *Contact: Christiane Beuermann*
- Sustainable Communities in Europe (Suscom). *Contact: Christiane Beuermann, or visit <http://www.prosus.nfr.no/la21/>*

A Learning Society

- Development of an Educational Model for the Regional Promotion of Food Products. *Contact: Bernhard Burdick, Gerhard Scherhorn*
- Institutional Change and Adjustment of EU and Non-EU Countries. *Contact: Christiane Beuermann, Bernhard Burdick*
- Enforcement of Agenda 21 in Industrialized Economies. *Contact: Christiane Beuermann*

* «Contact» refers to staff who will still be with the Wuppertal Institute at the date of publication of the annual report, while «responsibility» indicates that the person concerned, though no longer with the Institute, is still responsible for the project.

Material Flows and Structural Change Division

Organisation and Personnel

Director	Dr. Peter Bartelmus (since Feb 1999)	☎-132
Acting Director (until Feb 1999)	Dr. Friedrich Hinterberger	
Senior Researchers	Dr. Stefan Bringezu	☎-131
	Dr. Friedrich Hinterberger	☎-162
	Dr. Christa Liedtke	☎-130
	Joachim H. Spangenberg	☎-128
	Dr. Maria J. Welfens	☎-163
Research Fellows	Jörg Giesen (until Dec 1998)	
	Michael Kalff	☎-256
	Sylvia Lorek	☎-241
	Jutta Ludwig	☎-239
	Stephan Moll (sabbatical since May 1998)	
	Andreas Mündl (until Sept 1998)	
	Dr. Regina Nickel	☎-207
	Ines Omann (since Feb 1999)	
	Thomas Orbach	☎-171
	Stephanie Pfahl (since Dec 98)	
	Michael Ritthoff	☎-207
	Dr. Andrea Scharnagl (until Sept 1998)	
	Dr. Helmut Schütz	☎-240
	Anke Valentin	
	Arno Vogel (until Nov 1998)	
	Thorsten Reckerzügl	
	Philipp Schepelmann	☎-242
Secretarial Office	Giesela Menstell (until Dec 1998)	
	Kerstin Dross	☎-244
	Renate Buse	☎-179
	Mary Walker (since Jan 1999)	☎-139

Student Assistants	Torsten Brandt, Kai Dahme, Antje Flessner, Anja Haas, Christoph Felten, Petra Heuer, Michael Jaspers, Silke Jochims, Heike Schiewer, Angela Schilde, Michael Zeise
Freelance Collaborators	Renate Aumann, Caroline Baedeker, Ulrich Baer, Daniel Bannasch, Arnold Berndt, Lutz Blessing, Thomas Boermann-Schwarz, Odile Bonniot, Helmut Brentel, Oskar Brillung, Iwan Dam, Alexander Dauensteiner, Heiko Duppel, Aldo Femia, Elisabeth Fischer, Dr. Michael Fröhlich, Dirk Günther, Petra van Heek, Markus Heintz, Sonja Klingert, Rainer Klütting, Michael Kuhnt, Lars Meding, Bärbel Nowitzki, Anne Podehl, Thorsten Reckerzügl, Sandra Roewer, Larissa Rogner, Holger Rohn, Philipp Schepelmann, Nese Steinberg, Sandra Striewski, Gesine Tromsdorf, Roda Verheyen, Holger Wallbaum, Paul Weaver

Profile

In the course of the past years, MIPS and the concept of dematerialisation have found a permanent place in the debates on sustainability; applications of the Wuppertal concept of material flows analysis have proved it to be both innovative and robust. These pleasing results encourage us to continue discovering new approaches to MIPS, thus refining and improving the concept.

- With no threat to the continuity of successful efforts made above all in the area of — physical — material flows analysis, we are planning to enter on a constructive dialogue with the rather more conservative Environmental Economics and its — monetary — instruments. This may also be helpful in meeting the critique mainstream economists all too often level at the «unspecific» evaluation techniques related to material flow indicators. The first contact between environmental/physical economics and monetary environmental economics was established in a series of lectures on these subjects at the University of Wuppertal, delivered jointly by Dr. Peter Bartelmus and Dr. Friedrich Hinterberger.

- A variety of events, such as a workshop on «Unveiling Prosperity» at the end of the year 1999 will publicize the strained relations between wealth and capital on the one hand and the quality of life on the other. In this context, the common features, advantages and disadvantages of diverse statistical, analytical and political approaches will be laid open.

- The Division will pursue research in its four project areas, Metabolism of the Economy and Integrated Resource Management, Ecological Economics and Ecological Economic Policy, Sustainable Enterprises, and Sustainable Societies, while at the same time working towards the realization of pragmatic strategies and practicable policies. The newly-established project area on «Education for Sustainability» is a further step in this direction, and has already presented itself to the public with a superb puppet theatre performance centring on jeans — «they don't grow on trees».

Project areas

Metabolism of the Economy and Integrated Resource Management

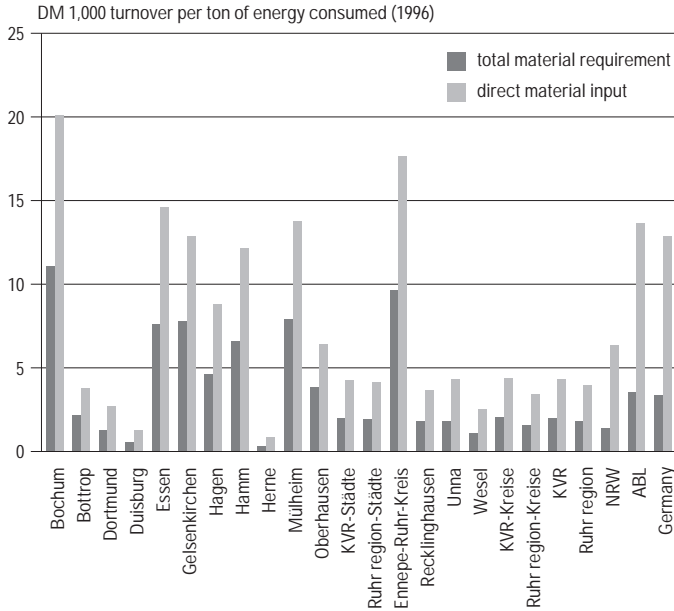
Contact: Dr. Stefan Bringezu, Project Management/Coordination, ☎-131

Main research topics/activities

- Promoting our method for the determination of material flows and the consumption of resources, to facilitate public accounting on an international level
- Reinforcement of international networking on the subject of material flow analyses with the aim of encouraging sustainable development
- Assisting with integrated planning of systems for the supply and disposal of water and food
- Material flow and resource management on the regional and community level

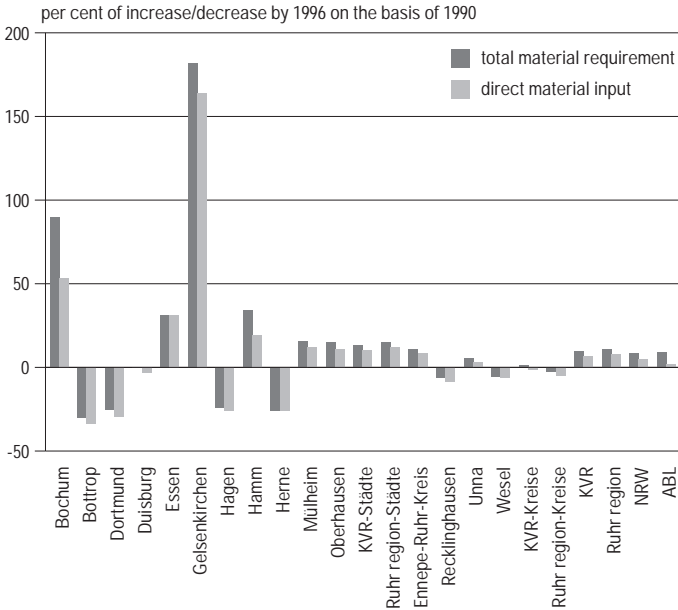
Projects

- Promoting Methods for Material Flow Analysis on the National and Regional Levels. *Contact: Dr. Helmut Schütz, Dr. Stefan Bringezu*
- ECOPOL: Ecological Economic Politics – A Strategy for Poland in the 21st Century. *Contact: Dr. Maria J. Welfens, Dr. Helmut Schütz*
- Material Flow Accounting and Resource Management in Egypt. *Contact: Dr. Stefan Bringezu*
- Networking. *Contact: Dr. Stefan Bringezu*
- Communal and Regional Resource Flow Management. *Contact: Dr. Stefan Bringezu, Thorsten Reckerzügl*
- Water Management in South China: Shenzhen. *Contact: Stefan Bringezu, Jutta Ludwig, Thorsten Reckerzügl*
- Structural Change and Sustainable Resource Management on the Regional Level. *Contact: Dr. Stefan Bringezu*



Energy productivity in the mining and processing industries of the Ruhr region. From 1990 to 1996, energy productivity in the mining and processing industries of the Ruhr region increased by an average of 11% and 8% respectively, depending on whether hidden flows are taken into account. Individual communities achieved an increase by the factor 1.8 or even 2.8. On the one hand, the ongoing structural change is an unmistakable sign that, as the Federal Ministry of Environment suggested, the increase of resource productivity by the factor 2.5 within a period of 27 years can easily be achieved at some locations. On the other hand, additional measures will be necessary to ensure a sufficiently widespread effect.

One important conclusion to be drawn from these studies points towards the speedy establishment of institutions providing planning personnel and decision-makers with information on sustainable resource management on a regional basis. This concerns resource-conserving infrastructures and sustainable material flow cycles as well as eco-efficient production and the development of new branches in the services sector. Consultant centres modelled on energy agencies could evolve in the context of institutions for regional planning or economic development.



Ecological Economics and Ecological Economic Policy

Contact: Dr. Friedrich Hinterberger, coordination/ planning, ☎-162

This project area is dedicated to the study of the economic structures behind empirical (micro, meso, and macro) data, to the interdependence of competitiveness, environment, and employment. In the course of the past year, a variety of approaches served to further elucidate this subject

- in econometric studies;
- with the help of theories on macroeconomic effects and structural conditions, to support the ecological trends in the services sector;
- in consultancy projects committed to the realization of the Amsterdam Treaty;
- in a study on the contribution of the financial sector (banks and insurance companies) to the reduction of material flows.

A catalogue of instruments relevant to ecological economic policy may be deduced on this basis, ranging from voluntary agreements via information (MIPS labels) right down to taxes, subsidies and tradeable pollution permits.

Projects

- The empirics of decoupling: Sectoral studies on material flows and employment. *Contact: Stephan Moll, Friedrich Hinterberger, Stefan Bringezu*
- Macroeconomic effects and structural conditions relating to trends towards eco-efficient services. *Contact: Friedrich Hinterberger, or visit our website at http://www.wupperinst.org/Projekte/Dienstleistung_2000.*
- European Structural and Environmental Policies. *Contact: Philipp Schepelmann*
- Sustainability and the Financial Market. *Contact: Hartmut Stiller*

Sustainable Enterprises

Contact: Dr. Christa Liedtke, coordination/ planning, ☎-130

Main research topics

- Integrated management systems
- Information networks and indicator systems;
- Comprehensive material flow and added value;
- Product development and design;
- Eco-efficient processes and services;
- COMPASS — enterprises and sectors on the road to sustainability.

Projects

- «United we sustain» — Sectors and Enterprises Dialogue.
Contact: Dr. Christa Liedtke, Michael Kuhndt
- COMPASS — on the road to a winwinwin-strategy. *Contact: Michael Kuhndt, Dr. Christa Liedtke*
«COMPASS» (Companies' and Sectors' Path to Sustainability) is a tool we are developing for enterprises in various branches of industry, regional governments, and budgeting in general. Indicators on all levels of economic activity (national economy, particular industries, individual enterprises) serve to determine how sustainable trends can be initiated or pursued.
- Environmental Management Systems/Resource Management. *Contact: Michael Kuhndt, Thomas Orbach, Michael Ritthoff, Holger Rohn, Dr. Christa Liedtke, Holger Wallbaum*
- Resource Management in the Textiles Industry.
- «Made-to-measure, not mass production» — tomorrow's custom-made shoes
- Eco-efficient sporting events — eco-efficient Ski World Cup 2001.
Contact: Holger Rohn, Carolin Baedeker, Dr. Christa Liedtke
- Environmental Cost Calculation/Environmental Information Systems.
Contact: Heiko Duppel, Thomas Orbach, Holger Rohn, Dr. Christa Liedtke
- Sustainable development of organisations. *Contact: Holger Rohn, Thomas Orbach, Dr. Christa Liedtke*
- »Act locally — think systemically« (1998-2000)
- New Roads for Work and Organisation
- Indicators, MIPS, and Material Flow Analysis. *Contact: Michael Ritthoff, Holger Wallbaum, Dr. Christa Liedtke, Holger Rohn.* Visit our website at <http://www.wupperinst.org/wi/projekte/mipsonline/index.html>.
- Resource-Conserving Land-Use Management. *Contact: Carolin Baedeker, Michael Fröhlich, Dr. Christa Liedtke*
- Biotic Raw Materials and Sustainable Development. *Contact: Dr. Regina Nickel, Dr. Christa Liedtke, Carolin Baedeker*

Sustainable Societies

Contact: Joachim H. Spangenberg, coordination/planning, ☎-128

The work of this project area is entirely project-financed. Divided into three subject areas, it is concerned with various aspects of operationalizing sustainability concepts. Individual projects include the development of new integrated

control and regulation instruments in the form of indicator systems for recording sustainability trends as the basis of a system-dynamic simulation model which permits a comparative analysis of divergent political measures.

The effects of sustainability-oriented political measures on the labour world form the focus of the Labour and Environment project.

Projects

- Labour and Environment. *Contact: Joachim H. Spangenberg, Torsten Brandt, Sonja Klingert, Meike Spitzner, Sandra Striewski, Roda Verheyen, Martin Wrotny*
- Sustainability Indicators. *Contact: Joachim Spangenberg, Kerstin Deller, Martin Gürtler, Sylvia Lorek, Stephanie Pfahl, Meike Spitzner, Anke Valentin*
- Modelling Sustainable Europe. *Contact: Dr. Andrea Scharnagl, Joachim H. Spangenberg, Andreas Mündl, Dr. Helmut Schütz, Antje Fleßner, Torsten Brandt, Michael Jaspers*

Education for sustainability

Contact: Dr. Maria J. Welfens, project management/ coordination, ☎-163

MIPS FOR KIDS is an innovative interdisciplinary project sponsored by the German Federal Foundation for the Environment. Its aim is to explain the MIPS-concept to children and young people, with the so-called »ecological rucksack« illustrating the hidden resource flows related to each and every product, its material input from the extraction of raw materials down to its disposal.

Project

- How Children Use and Design — MIPS for Kids.
Contact: Dr. Maria J. Welfens, Michael Kalff



Environmental National Accounting

Contact: Dr. Peter Bartelmus, coordination/planning, ☎-132

Preliminary ideas concerning the integration of modified indicators of »green« national accounting into processes of material flow reporting and analysis have recently been developed in the context of the Institute's work. The aim is to compare the applicability and political relevance of monetary versus physical approaches to sustainability assessment. Considerations such as these also represent an important link between the areas of Ecological Economic Policy and Material Flows/Resource Management.

Preparations for an inter-divisional workshop «Unveiling Prosperity», at which politicians and representatives of companies, trade unions, the academic world and various associations will discuss these issues, are already in full swing.

Energy Division

Organisation and Personnel

Director	Prof. Dr. Peter Henricke	☎-140
Senior Researchers	Dr.-Ing. Manfred Fishedick	☎-121
	Dr. Kora Kristof	☎-183
	Stefan Thomas	☎-143
	Klaus Richter (until Nov 1998)	
	Dr. Kurt Berlo (since Dec 1998)	☎-174
	Stefan Lechtenböhmer	☎-216
Research Fellows	Dr. Claus Barthel	☎-166
	Dr. Christiane Dudda	☎-201
	Thomas Hanke	☎-202
	Wolfgang Irrek	☎-164
	Britta Körschgen	☎-203
	Sabine Nanning	☎-169
	Stephan Ramesohl	☎-255
	Gerhard Wohlauf	☎-165
Secretarial Office	Dorle Riechert	☎-109
	Susanne Rabe	☎-111
Student Assistants	Stephan Barths	
	Christiane Becker	☎-288
	Andrea Esken	☎-109
	Frank Merten	☎-126
	Mark Noetzel	
	Angela Nowak	☎-252
	Oliver Wagner	☎-188
Freelance Collaborators	Stefan Pfahl, Carsten Polenz, Andreas Schmidt, Susanne Stark and Dirk Wolters	

Profile

Our scientific interest centres on the following questions:

- Which form must an energy system adopt in order to meet the criteria of »sustainable development« (e.g. climate and resource protection, environmental compatibility, economic cost-efficiency, risk minimisation and social sustainability)?
- Which solution-oriented steps are to be taken at what point in time in order to reach a »sustainable energy system« ?
- How do we derive proposals for action in politics, administration and industry from such knowledge?

Apart from the long-term conditions of an energy system that is sustainable from the ecological, economical and social perspectives, our Energy Division also investigates short and medium-term transitional forms along the way. With the aim of gradually establishing a type of energy economy which is more strongly oriented towards renewable energies and energy conservation, practical concepts are being developed for private and public persons. Prerequisites for the evolution of this type of economy lie in

- a considerable increase in energy productivity (the same energy service with a considerably lower amount of energy input);
- a shift from the currently supply-side to a more strongly demand-side energy economics with a distinctively decentralised character, focusing on the efficient provision of locally required energy services, and not on the sale of energy whose production can be connected with greater risks;
- the promotion of new players to enter the market for energy services (energy service companies, cogeneration plants, energy agencies, contracting firms etc.).

The exacting standards set by a restructured energy system oriented towards sustainability can no longer be met by seeking purely technical answers. Consequently, in addition to analysing the basic technical elements involved, one of the main research tasks of our Energy Division lies in the socio-economic sector. An essential prerequisite for research results which can be successfully implemented in industry and politics therefore lies in the close cooperation of various disciplines, a fact that is not only reflected in the broad spectrum of training qualifications found among our staff at the Energy Division, but also by day-to-day interdivisional collaboration. Intensive cooperation with renowned national and international institutes provides further opportunities of meeting the high standards ruling interdisciplinary energy research and consultancy.

Our priorities in individual fields of research and the projects which dominated 1998 – frequently carried out in cooperation with other institutes – are listed below.

Project Areas

- Least-Cost Planning (LCP)/Contracting: New Business Fields for Energy Service Companies. *Contact: Prof. Dr. Peter Hennicke, Stefan Thomas, Dr. Kora Kristof*
- Concepts for Energy and Climate Protection/Local Agenda 21: Ranging from Local Energy and Climate Protection Concepts through Regional Political Options to Recommendations on a European Level. *Contact: Kurt Berlo, Peter Hennicke, Kora Kristof, Manfred Fishedick*
- Issues Relating to the Power Industry Act and New Forms of Cooperation: Ranging from European Directives to Providing Local Government Sectors and Public Utilities with Consultation on Franchise and Cooperation Agreements. *Contact: Peter Hennicke, Stefan Thomas, Kora Kristof, Kurt Berlo*
- Socio-Economic Obstacle and Implementation Research in the Energy Sector. *Contact: Kora Kristof, Wolfgang Irrek, Stephan Ramesohl*
- Energy Efficiency and Climate Protection Strategies for Industry, Household Appliances, Cross-Sectional Technologies, and Energy-Optimised Building and Housing. *Contact: Kora Kristof, Stephan Ramesohl (Industry), Stefan Thomas (Household Appliances/Cross-Sectional Technologies), Britta Körschgen (Energy-Optimised Building and Housing)*
- Energy System Scenarios/Future Perspectives for the Energy System. *Contact: Manfred Fishedick, Peter Hennicke, Stefan Lechtenböhrer, Thomas Hanke*
- Specific Issues Regarding Hard and Brown Coal and the Withdrawal from Nuclear Energy. *Contact: Peter Hennicke, Stefan Lechtenböhrer, Manfred Fishedick, Kora Kristof, Wolfgang Irrek*
- New Eco-Efficient Services. *Contact: Kora Kristof, Claus Barthel*
- Future of Work/Work and Ecology. *Contact: Peter Hennicke, Kora Kristof*
- Education, Qualification, Training in the Energy and Environmental Sectors. *Contact: Stefan Lechtenböhrer, Christiane Dudda, Sabine Nanning*

Projects Concluded in 1998

- Climate Protection Assessment of Federal States: Saarland
- Energy Efficiency Analysis of Domestic Electric Storage Water Heaters in EU-countries

- Future Energy Policy – Action Plan for Rational Energy Utilisation and Regenerative Energy Sources
- Protecting the climate in the building and housing sectors
- Future of work (book project)
- Pilot projects, conservation contracting and intracting in North-Rhine Westphalia
- Evaluation of energy conservation and CO₂ reduction programmes of the municipal utility of Münster
- Opportunities for energy efficiency strategies in Brandenburg – survey on specific proposals for activities and their economic effects
- Ecology in Bad Hersfeld: Developing practicable energy concepts
- Energy Services offered by Electric Utilities in diverse national regulatory contexts (Norway/Germany)
- Eco-efficient concepts for uses and services in the home furniture industries
- The future of energy supply in the town of Warstein — consultations for the foundation of a multi-sectional utility
- Sustainable fields of business for German utilities and power station construction
- Brochure on Demand-Side Management in Jordan
- Development of eco-services as the core to a comprehensive services plan for public offices («Amt 70») in the town of Stuttgart
- Restructuring Energy Supplies in Greven — Consultations for Public Administration and City Council
- Consultations for the City of Solingen on regional (Rheinisch-Bergische) utilities cooperation
- Consultations for the Wuppertal utilities on regional (Rheinisch-Bergische) utilities cooperation
- Energy-Saving Contracting with the Heidelberg utilities: Detailed analysis of the University refectory and St. Joseph Hospital
- Natural gas supplies for the town of Arnsberg
- Consultations for the re-foundation of the Reutlingen utilities
- The Hermannsdorfer Workshops at Kronsberg, Hannover: Critical Assessment and Analysis of their energy and water supplies concept, including remarks on building ecology
- Compilation of a list of sustainable enterprises capable of recycling waste heat from the GuD power station in Luxembourg
- Possibilities of privatising the supplies and waste treatment section of the MVV Ltd
- CO₂, exploitation of wind-generated energy and the climate: critical assessment of propositions suggested by the German Federal Association for

Landscape Conservation (Bundesverband Landschaftsschutz)

- Assessment: Introduction of energy taxes in Luxembourg
- Saving energy by changing consumer behaviour at schools in North-Rhine Westphalia
- Saving energy and protecting the environment at schools in Saxonia-Anhalt

Current Projects

- Building blocks for Least-Cost Planning (LCP) at the Velbert utilities
- Global Environmental Change: Motivation and stimuli for municipal utilities and energy consumers in Germany to promote energy efficiency on the community level
- Climate protection concept for the town of Remscheid and Remscheid utilities Ltd.
- Short-term action plan for Least-Cost Planning at Remscheid utilities
- Corporate concept for the Association for Renewable Energies Ltd (Gesellschaft für Regenerative Energien GmbH)
- Eco-department store: qualification in marketing ecological products and services
- Voluntary Agreements — Implementation and Efficiency
- DSM Pilot Actions, Demand-Side Bidding and Development of IRP (Integrated Resource Planning) Incentives in Restructured Electricity Markets — A Joint Project in Italy, Germany and Austr
- Working Group on Energy Efficient Domestic Ovens in the EU
- Protecting the Climate in Hanover — Interim balance and controlling tools
- Update of CO₂-Study including proposals for practicable measures and a projective CO₂-accounting tools for Greater Hanover
- Cost/benefit-analysis of building measures for sustainable private homes in the federal state of Brandenburg
- Efficiency Assessment of Buildings Plans for the BHKW-Project Initiated by the Erkrath Municipal Utilities
- Demand-Side Management: Case Study Jordan and Zimbabwe
- Aggregated Purchase at a European level: A-Rated Fridge/Freezers
- IRP (Integrated Resource Planning) in a Changing Market
- Protecting the climate by using renewable energies within the framework of new regulations: Development of a basket of workable measures
- Evaluating the strategies of the Industry Department: Assessment of the effect of the Swiss Energy Model on the realization of measures for the increase of energy efficiency in the industrial sector and of its strategic relevance for energy policies

- Instruments for protecting the climate in a liberal energy market, with a special emphasis on cogeneration plants
- Processes of Innovation and Diffusion Serving the Increase of Energy Efficiency in Small and Medium-Size Enterprises and the Role of the Field of Actors (IDEE)

Transport Division

Organisation and Personnel

Director	Dr. Rudolf Petersen	☎-117
Senior Researchers	Dr. Oscar Reutter	☎-267
	Dr. Karl Otto Schallaböck	☎-115
	Meike Spitzner	☎-151
	Georg Wilke	☎-211
Research Fellows	Ute Beik	☎-214
	Stefanie Böge	
	Susanne Böhler	☎-259
	Harald Diaz-Bone	☎-258
	Martin Hüsing	☎-260
	Ady Köhn	☎-268
	Andreas Pastowski	☎-118
	Dr. Klaus-Dieter Schlünder (until Sept 1998)	
Secretarial Office	Edda Buchleither	☎-127
	Edith Bräutigam	☎-184
Research Assistant	Monika Brinkmüller (until Sept 1998)	
Part-time Student Staff	Elmar Jasper	☎-257
	Tamara Adkins (until Oct 1998)	
	Sebastian Belz (until Dec 1998)	
	Julia Blinde	
	Alexander Daunsteiner (until May 1998)	
	Sebastian Elbe	
	Heide Hopkins (until June 1998)	
	Marion Klemme (until June 1998)	
	Andreas Meißner	
	Tina Ruschenburg	☎-266
Robert Schlich	☎-266	
Philipp Schmidt		
Graduates	Holger Dalkmann	☎-233
	Martin Lanzendorf	☎-261

Profile

Our work at the Energy Division is oriented on the concept of sustainable development. In accordance with the tenets of Agenda 21, we are building on a view of ecological compatibility and sustainability that goes beyond the bounds of conventional environmental protection and integrates commercial, social, and natural-habitat requirements as well as a decided orientation towards equity.

The unrelenting growth in traffic volumes even in already highly motorised countries and the increase in motorised transport in the developing nations are resulting in an insupportable strain on the carrying capacity of the environment. Though the emergence of more benign technologies has reduced emissions of «classical» harmful substances such as nitrogen oxides and carbon monoxides in industrial economies, any achievements made here are cancelled out by the continuous growth of traffic volumes. In view of the stagnating energy efficiency of vehicles, an increase in greenhouse gas emissions seems inevitable. Counter-productive from the perspective of climate policy, the legitimacy of traffic developments such as these will have to be closely scrutinized, considering that within an encompassing climate policy, other sectors are continually striving to accomplish greater and greater improvements.

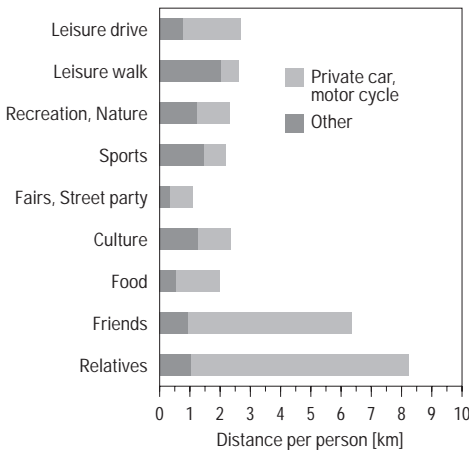
In the southern hemisphere, due to increases in population and migratory movements into the cities, even comparatively small rates of motorisation result in detrimental urban living conditions. In this context, obsolete technologies causing high pollution levels play a central role.

The ecological reorganisation of traffic thus poses a number of tasks, including the further improvement of traffic-relevant technologies in view to energy and material efficiency, but also the development of strategies promoting alternative means of transport and avoidance of traffic.

A major objective therefore lies in decoupling prosperity from the growth in traffic volume, in the same way that value-creation was separated from energy consumption in the field of stationary energy in the 1970s, or to put it in more general terms, to see how the beneficial effects of mobility could be separated from its less beneficial consequences. On account of their greater wealth and higher intensity of traffic, the industrial economies will have to lead the way in the field of energy efficient vehicle design, and point out possibilities of achieving progress without causing traffic.

Project Areas

- Instruments for a More Ecologically-Oriented Transport System. *Contact: Dr. Rudolf Petersen, Harald Diaz-Bone, Susanne Böhler*
- Integrative Approaches to Regional and Transport Planning. *Contact: Dr. Oscar Reutter*
- Ecological City. *Contact: Georg Wilke, Ute Beik, Stefanie Böge, Ady Köhn*
- Economic Aspects. *Contact: Andreas Pastowski*
- Individual Traffic Behaviour and Background Structural Conditions. *Contact: Susanne Böhler, Martin Lanzendorf*



Traffic behaviour: A case study conducted in four districts of Cologne centres on weekend leisure mobility. An empirical survey provides the basis for a close analysis of motivations and routine behaviour in leisure mobility, and for the identification of possibilities of reducing motorised traffic. First results show that the temporal-spatial heterogeneity of leisure mobility requires highly differentiated approaches in the subcategories leisure facilities, social contact, nature, and aimless mobility.

Source: Lanzendorf, Martin, Befragung zum Freizeitverkehr in vier Kölner Stadtvierteln, n = 949, Frühjahr / Sommer 1997, deutsche Bevölkerung ab 18 Jahre.

- Feminist Approaches to Structural Traffic Avoidance. *Contact: Meike Spitzner*
- A Life Independent of the Car – Car-less Urban Districts. *Contact: Dr. Oscar Reutter, Ute Beik, Holger Dalkmann, Ady Köhn*
- Energy-efficient Vehicle Design. *Contact: Dr. Rudolf Petersen, Harald Diaz-Bone*
- New Rail Concepts: The Practical Example of the Local Railway Network. *Contact: Dr. Karl Otto Schallaböck, Martin Hüsing*
- Aviation. *Contact: Dr. Karl Otto Schallaböck, Ady Köhn, Andreas Pastowski*
- International Activities
- Environmental Fellowship. *Contact: Susanne Böhler*
- Agenda 21 in Wuppertal. *Contact: Georg Wilke*

Working Group on New Models of Wealth

Organisation and Personnel

Director	Prof. Dr. Gerhard Scherhorn	☎-175
Deputy Director	Dr. Wolfgang Sachs	☎-177
Senior Fellows	Lisbeth Bakker	☎-193
	Dr. Eberhard K. Seifert	☎-178
	Dr. Uta von Winterfeld	☎-176
Research Fellow	Renate Jungkeit	☎-176
Secretarial Office	Beate Schöne	☎-142
Student assistants	Martina Schmitt	☎-191
	Nicole Heißmann	☎-142

The idea of »productivity of resources« may well be regarded as the theoretical cornerstone of the Wuppertal Institute. The slogan of »increasing resource productivity« reflects the Institute's strategic approach: on the one hand, the ecological reform of society aims at securing and further developing our current standard of living, on the other, at reducing the cost in materials and energy that this will incur, by a factor of 10 within the next 50 years.

Anyone who intends to increase the productivity of the resources we use faces a choice of two routes. He can attempt to reduce the quantity of resources employed, or turn his attention to improving the results. While the first approach involves doing things right, the second involves doing the right things. For the term »productivity« has always had a double meaning, both in terms of its dictionary definition and in the way it is generally used; it relates either to the way in which resources are used or to the quality of the results achieved.

However, the two different meanings give rise to quite different questions. Taking the first definition: how can organisational or technical progress be made at less cost? This apparently calls for a contribution not only from accountants but also from engineering and planning experts. Taking the second definition:

what cost is acceptable for a given result? What are the benefits, the purpose, the aesthetic impacts? In a word: will it improve our standard of living? Questions like these rather require answers from economists, historians, philosophers, and psychologists.

The »Working Group New Models of Wealth« concentrates on the second line of investigation, asking whether the results achieved from using large quantities of materials, such as a high economic output, mobility, intensity of employment, and material prosperity are promoting the quality of personal and social life as well as a sustainable form of wealth. It is essential to rediscover the qualitative dimensions of the «good life», and to develop quantitative methods and techniques of assessing the sustainability of economic activities.

The Group is also looking into the possibilities changing and reducing its production output entails for our civilisation. Can less be more? If so, under what conditions? Is it conceivable, and are there examples to prove it, that limits can be turned into opportunities? The future surely belongs to those models and examples of wealth that make a life that is successful for the individual and for society both attractive and feasible at a lower cost in material consumption.

In order to come closer to answering these questions, the Working Group is using methods taken from the empirical side of the social sciences, economic-statistical analysis, historical research, political analysis, and philosophical reflection.

Project Areas

- Sustainable Lifestyles. *Contact: Gerhard Scherhorn, Renate Jungkeit*
- Nature and Work. *Contact: Gerhard Scherhorn*
- Growth and Globalisation. *Contact: Wolfgang Sachs*
- Assessing Wealth. *Contact: Eberhard Seifert*

North-South Relations

Contact: Dr. Manfred Linz, ☎-136

Upon an invitation issued by the regional government of North-Rhine Westphalia, the three great umbrella organizations representing Muslims in Germany held a series of meetings at the Wuppertal Institute, dedicated to defining ways in which Muslims living in Germany, their communities and associations, can contribute to local Agenda 21 activities. As a result, the umbrella organizations have jointly signed the «Memorandum of Muslims in Germany on Responsibility for Future Developments in Politics, Economy, and Society», which encourages Muslims to take their international contacts as an incentive to put the resolutions of the Rio summit into effect, by establishing ecological and multi-cultural partnerships and playing an active role in the realization of Agenda 21.

Another memorandum, signed by the State Chancellery and the Wuppertal Institute, addresses the communities of North-Rhine Westphalia, draws their attention to this initiative and urges them to involve our Muslim neighbours in the round table discussions on the Agenda. On October 19, 1999, the initiative will be formally inaugurated at the Islamic Academy of Cologne.

Working Group Media

Communication and Public Relations

Head	Wolfram Huncke	☎-150
Assistants	Alicja Darski (on leave) Kerstin Kluth	☎-180
Freelance Collaborator	Jochen Pferdehirt	☎-272

«Science is either a public good, or no good at all» — the Wuppertal Institute fully embraces this maxim, coined by Prof. Dr. Heinz Meier-Leibniz, former president of the Deutsche Forschungsgemeinschaft (German Society for the Advancement of the Sciences). Efficient communication and public relations make the latest scientific findings available not only to our clients, but also to the scientific community and the general public.

Regular press releases serve to keep a general and interested public informed on what the experts think, always at the ready to answer any question when the media need to know, where does the Wuppertal Institute stand on this issue?

Guests, guests

One of the highlights of the events Communication and Public Relations staged this year, a five-day workshop from September 29 to October 3, 1998, welcomed scientists and cultural representatives hailing from 16 nations and four continents as «cultural mediator» sent by the Goethe Institute.

It is a well-known fact that since 1995, the Goethe Institute of Munich offers international seminars for «cultural ambassadors», which aim at creating a space for international cultural exchange with people and institutions having to do with the local cultural life, and between the participants of the seminars themselves. The workshop conducted at the Wuppertal Institute was a pilot project following the motto «Shades of Green — the Full Diversity of Innovative Approaches in Germany». Apart from the Wuppertal Institute, the programme for the travellers included visits to the Association for Environment and Nature Conservation in Germany (BUND) in Freiburg and to the Environmental Agency in Berlin.

A considerable number of our scientists took part, thus representing the work of the Wuppertal Institute in its whole breadth and scope. Participants in the

seminar were provided with information on a multitude of projects currently pursued at the Institute. The cultural ambassadors evinced a keen interest in all matters discussed, and took a lively part in debates. The publications issued by the Institute were in high demand.

The president of the Wuppertal Institute, Ernst Ulrich von Weizsäcker, not only introduced the Institute to our guests, but also led a thorough discussion of the Factor Four Concept. Dr. Raimund Bleischwitz then presented «Sustainable Germany», whereas Harry Lehmann and Rudolf Petersen focused on «Energies of the Future» and «Spatial and Traffic Planning», pointing out ecological approaches to combating poverty in third world countries. In the context of «Defining Sustainability», Peter Henicke, vice-president of the Wuppertal Institute, presented a paper on innovative approaches to environmental politics. In the following round of discussions, the cultural ambassadors entered on a lively debate of various scenarios of sustainability with Susanne Böhler, Uta von Winterfeld and Beate Schöne.

A panel of representatives of the media, including Hanna Leitgeb, head of communications at the Institute for Cultural Sciences (KWI) and former editor of the *Süddeutsche Zeitung*, Marianne Wollenweber, environmental journalist from Bonn, Angela Weber, duty editor at Radio Wuppertal, Ingo Lamberti of WDR television Düsseldorf, then joined the cultural ambassadors in a discussion on «How to represent environmental issues in the media» chaired by Carmen Scher, project manager at the Goethe Institute.

One of the highlights of this event was the invitation to «Pitch In!» For a whole day, the cultural ambassadors were able to discuss projects of their own and topics they were especially interested in with experts from the Institute.

As the cultural explorers suggested, this meeting in Wuppertal will be documented in a book which is to be published in the autumn of 1999. This publication will also include contributions by the cultural explorers themselves, focusing on the experiences they made with ecological innovations based on the Factor Four Concept in their home countries (Eds: Prof. Dr. Hilmar Hoffmann, President of the Goethe Institute, and Prof. Dr. Ernst Ulrich von Weizsäcker, President of the Wuppertal Institute). The Goethe Institut provides further information at their website at <http://www.goethe-institut.de/z/23/index.htm>

Our mentor: Welcoming Minister-President Johannes Rau at the Institute

On May 20, 1998, shortly before standing down from his office of minister-president of North-Rhine Westphalia, Johannes Rau visited the Wuppertal Institute in order to discuss current and pressing issues of environmental policy with Ernst Ulrich von Weizsäcker and scientists from the Institute.

It was Johannes Rau who gave a major impulse for the foundation of the Wuppertal Institute in the year 1991. He had then phrased his vision for the newly-founded Institute in a programmatic address, calling it a «Workshop for Responsible Knowledge for the Future».

Visualisation Lab

Head	Hans Kretschmer	☎-125
Assistants	Sabine Michaelis Thomas Pössinger	
Student Assistant	Gabriele Thönes	☎-187

The visualisation lab is responsible for transforming scientific concepts and examination results into images, graphs and diagrams, for the layout of publications and DTP.

Internet Communication

Administrator: Oliver E. Weckbrodt ☎-279

The internet is an ideal medium for the Institute, facilitating the provision of up-to-date information on our various projects, creating contacts and exchanges between scientists as well as the interested public while at the same time fulfilling our goal of conserving resources. This very Annual Report is the first to be published exclusively in electronic form, thus saving enormous amounts of paper and toner cartridges...

Our webmasters work in close cooperation with Communication and Public Relations and the Visualisation Lab. The number of visitors at our newly-designed website has doubled in the course of the past year and now reaches 14,000; more than 3,000 visitors also subscribed for our free newsletter at www.wuppertal-institut.de/info.

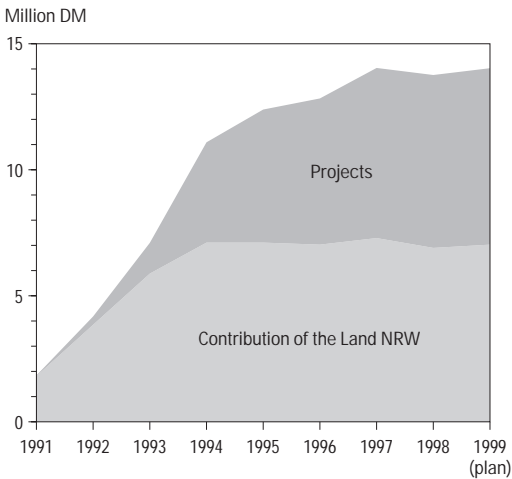
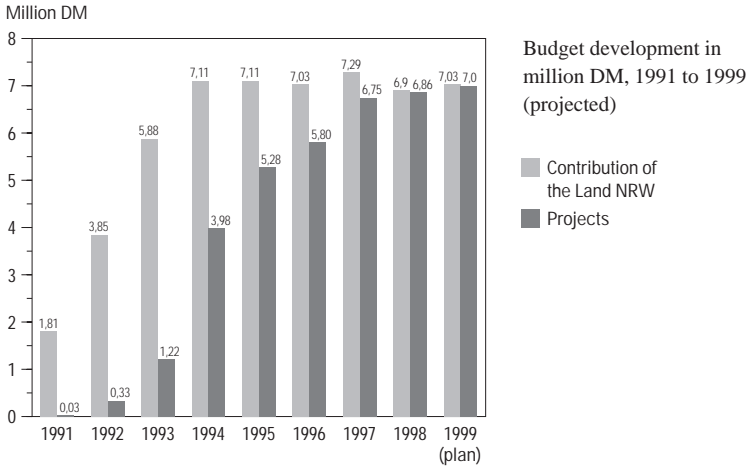
Cross-Divisional Tasks

Administration

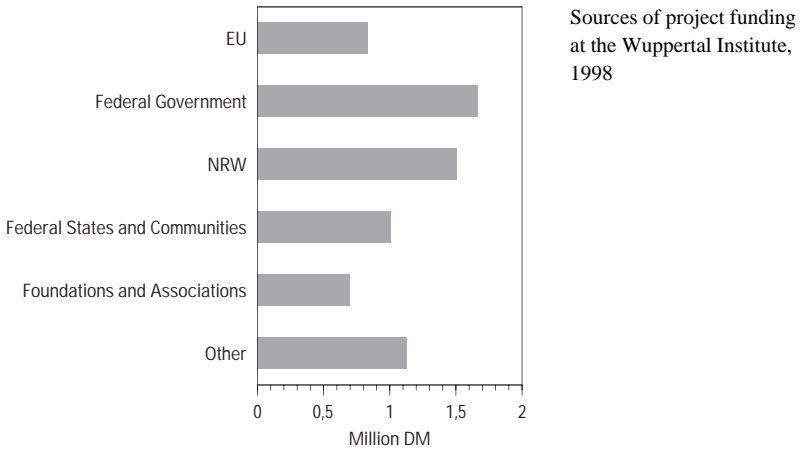
Head	Brigitte Mutert (since Sept 1998)	☎-112
Assistant and Secretarial Work	Birgit Wolff	☎-141
Accounting and Budget	Christine Wolf	☎-195
	Brigitte Gnaß	☎-144
	Karin Wasserlos	☎-159
Procurement, General	Hermann Sawallich	☎-104
Administrative Tasks and	Holger Frank	☎-204
In-House Services	Jörg Gundlach	☎-204
Personnel	Wolfgang Drost	☎-105
Projects	Christian Radtke	☎-275
Student Assistants	Simone Bräutigam	☎-209
	Heike Drost	☎-281
	Maria Morgado Peinado	☎-209

As an Institute of the federal state or Land, the Wuppertal Institute receives considerable financial support from the budget of North-Rhine Westphalia. At the time of its foundation in 1990/91, the Institute had around DM 1.84 million at its disposal; in 1998, its budget totalled DM 13.8 million. The contribution of the Land for 1998 adds up to DM 6.9 million, reflecting a decrease by 5.3% or DM 290,000 compared to the figures of the previous year.

With a total of DM 6. 860.000, funds deriving from project work have risen slightly in comparison to the previous year (1997: DM 6.750.000).



In contrast to previous years, the total of funds deriving from project work were only slightly lower than the budgetary means provided by the Land. For 1999, we are again reckoning with a financial budget composed of 50% contributed by the Land and 50% deriving from projects.



The procurement of funding for projects faces tough international competition; the stabilization of this type of funding in the course of the years argues the Institute's competence and the unsurpassed quality of our work, reaching from basic research down to serviceable pilot schemes.

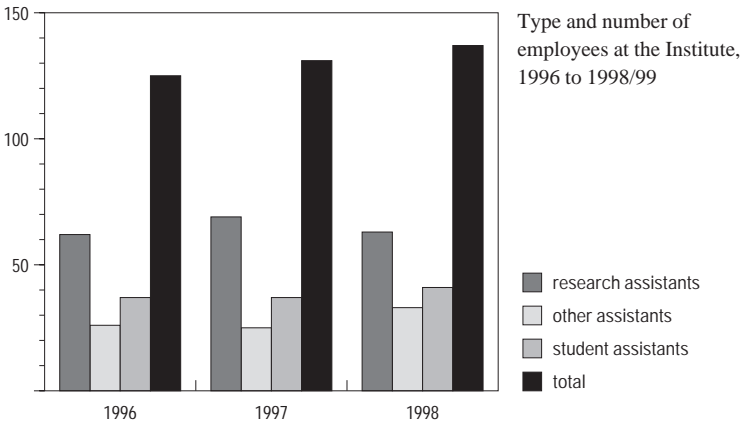
In 1998, the percentage of studies and projects commissioned by private-sector companies, among them ABB, Audi, and the Düsseldorf Trade Fair, showed a marked increase.

Unforeseen expenses went into the Institute's new building, causing a considerable rise in expenditures, which we are meeting with a strict budgeting plan drawn up at the end of 1998.

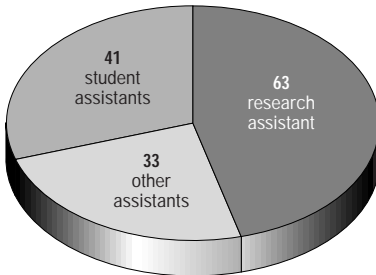
Since 1996, the number of employees at the Institute has been rising, especially where the number of student and research assistants is concerned.

At the end of 1998, a total of 137 persons was employed with the Institute, comparing with 131 in 1997; the number of employees whose salaries are drawn from permanent funds has remained stable since 1997, totalling 49 persons.

Number of staff members



1998/99



Library

Head

Nadja Schiemann (maternity leave 1997)
 Susanne Schwarte (until Oct 1998)
 Holger Wendler
 (acting head since Dec 1998)

☎-122

Student Assistant

Folke Obermark
 Bettina Bahn-Walkowiak
 (until Feb 1999)
 Iris Tillmannshöfer
 (since March 1999)

☎-120

☎-120

Publications 1998/1999

Bartelmus, P.

- Greening the National Accounts: Approach and Policy Use, DESA Discussion Paper No. 3, United Nations: New York 1999.
- Green Accounting for a Sustainable Economy — Policy Use and Analysis of Environmental Accounts in the Philippines, in: *Ecological Economics*, Nr. 29/1, May 1999, pp. 155-170.
- with: Kim, S.-W.; Alfieri, A.; van Tongeren, J.; Gudgeon, P.: Pilot Compilation of Environmental-Economic Accounting — Republic of Korea, Seoul, UNDP, KEI, UN-DESA, 1998.

Bartelmus, P.; Alfieri, A. (eds.)

- *Environmental Accounting in Theory and Practice*, Kluwer Academic Publishers: Dordrecht, Boston, London, 1998
- Implementation of environmental accounting: towards an operational manual, in: Bartelmus, P.; Uno, K. (Ed.): *Environmental Accounting in Theory and Practice*, Kluwer Academic Publishers: Dordrecht, Boston, London, 1998, pp. 13-32.

Bartelmus, P.; Uno, K.

- The value of nature — valuation and evaluation in environmental accounting, in: Bartelmus, P.; Uno, K. (Ed.): *Environmental Accounting in Theory and Practice*, Dordrecht, Boston and London, Kluwer Academic Publishers, 1998, pp. 263-307.

Beuermann, C.

- Local Agenda 21 in Germany. Summary and Update 1998: Do the fundamental ideas apply as time goes by?, in: Prosus (Ed.): *Implementing Local Agenda 21 in Europe. Varieties of Sustainable Community development*, Prosus: Oslo, 1998, pp. 95-105.
- Local Agenda 21 in Germany. Five years after Rio and its still uphill all the way?, in: William M. Lafferty and Katarina Eckerberg (Ed.) *From the Earth Summit to Local Agenda 21. Working Towards Sustainable Development*, Earthscan: London 1998, pp. 106-139.

Beuermann C.; Burdick, B.

- The German response to the sustainability transition, in: O’Riordan, T.; Voisey, H. (Ed.): *The transition to Sustainability. The Politics of Agenda 21 in Europe*, Earthscan: London, 1998, pp. 174-188.

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