Conference Programme
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Web: www.berlinconference.org/2010
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Welcome

A warm welcome to the 2010 Berlin Conference on the Human Dimensions of Global Environmental Change. We are proud to say that this is already the 10th conference in a successful series that started back in 2001 – right here at Freie Universität Berlin.

In the era of the ‘anthropocene’ the relevance of the Human Dimension in the drivers of environmental change as well as in the ability to cope with it is no longer disputed. The Berlin Conferences and since 2007 the Amsterdam Conferences provide a venue for social scientists to discuss pressing issues of global environmental change and to exchange ideas and experiences of best practices of social systems in mitigating, coping and adapting to environmental change. Researchers in the field of Global Change are committed to contribute to problem solving. Political systems, economies, traditions, cultures, policies, ideas, interactions make a difference on how countries, regions, cities, communities, and even the world can cope with environmental change. For ten years now, the Berlin Conferences bring together people who care about solutions and who aim for improving the living conditions of people. We invite contributions that provide new perspectives on social interactions in the realm of environment and development, that apply and test theories and methodologies on environmental change across levels and scales, and that advance scientific knowledge on complex socio-ecological systems.

This year’s conference focuses specifically on the Social Dimensions of Environmental Change and Governance. We are interested in exploring knowledge and knowledge gaps relating to distributional impacts of environmental change and the governance approaches responding to this change: Is living in a clean environment limited to the rich? How costly is it to clean up emissions and to become more efficient in the use of resources? These questions are of eminent importance since the emergence of modern environmental policies in the 1970s. They became even more
important when international environmental governance subscribed to the notion of sustainable development in the early 1990s. Since then environmental governance is no longer a matter of cleaning up and reducing industrial pollution. It has become a matter of fairness between the global north and the global south as well as between the present and future generations.

Triggered by the recent global financial crisis and the necessity to respond to global warming we are currently witnessing enormous changes in economies around the globe. The palpable aim to finally bring our economies and societies onto sustainable pathways requires transformations of a scale similar to the industrial revolution. Indeed, societies, markets and political systems have not only to embrace new economic opportunities, they have to adapt to concurring social and environmental changes at the same time: How will we cope with social disruptions resulting from this? Which sectors, which regions, which countries will be successful in doing so and why? How can societies decrease their vulnerability against environmental change?

Very much like the previous conferences, our ambition is to bring together researchers and ideas that have not been linked before. We want to challenge ideas and theories, develop joint frameworks for current and future research and to expose scientific insights to the realities of political processes at all levels.

To this end, we also introduce new formats at this year’s Berlin Conference: for the first time we make extensive use of videoconferencing. Partners that abstain from travelling to Berlin will present their papers from virtual hubs in Fort Collins, Colorado in the United States, Cape Town, South Africa and Tokyo, Japan. They will be able to follow the plenary and semi-plenary sessions and you can even meet your transcontinental colleagues in virtual coffee breaks. We warmly welcome all participants who virtually join us as well as those physically attending the conference in Berlin to make ample use of this opportunity and to share the
experiences with a network conference of this type. Given the imperative to avoid emissions from travelling, the increasing number of international conferences, the advances in information technology as well as the need for efficient use of research and travel budgets, this might be a stepping stone for new conference formats. We are highly interested to receive your feedback on this particular innovation to the tried ways of the Berlin Conference series.

Like its predecessors, this Berlin Conference has benefited from a broad range of contributors. For a start we have again received a large number of submissions to our call for papers. Most of them were of high quality and proposing promising papers. However, not all submissions could be accepted in order to keep the conference focused and manageable. We are hence very grateful to the voluntary members of the international review panel who provided their time and advice on the selection of the papers you now find included in this program. This said we are equally grateful to those who will be actually presenting their papers in the course of the next two days. Without you there obviously would not be much of a conference.

The conference would also not be possible without the funding we received from the German Science Foundation (DFG), which is gratefully acknowledged. We are also grateful to Freie Universität Berlin for again providing us with the facilities to host the conference. Moreover, we are thankful for support and advice received from the International Human Dimensions Program on Global Environmental Change (IHDP), the German Political Science Association (DVPW), the Global Governance Project (GLOGOV), the Earth System Governance Project (ESG) and the British

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1 Paper Sessions including virtual presentations are: A6, A2, B5, C8, D5, F8
International Studies Association and, especially our virtual conference partners in Cape Town University, Colorado State University and United Nations University Tokyo. We gratefully acknowledge the contributions of Per-Olof Busch who initiated this years’ conference, but who took over another position that did not allow him to stay involved in organizing this years’ event. Thanks also to our colleagues at the Environmental Policy Research Centre and the German Development Insitute. Not least, we appreciate the tireless efforts of a large number of student volunteers who facilitate a smooth proceeding of this year’s conference.

Most important, though, is your participation, your presentations, your ideas and thoughts. Thank you for sharing your efforts at the 2010 Berlin Conference! We wish all of you, whether you have travelled to Berlin in person or will be joining us via videocenference, a very good and inspiring conference.

Welcome again in Berlin!

Steffen Bauer, German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE), Lisa Münch and Klaus Jacob, Freie Universität Berlin.
International Review Panel

Participants of the 2010 Berlin Conference were selected and invited on the basis of a rigorous international anonymous peer review of the submitted abstracts. The review panels comprised 53 international experts in research on the human dimensions of global environmental change. All 381 abstracts were evaluated independently and anonymously by at least four members of the International Review Panel, allotted on a random basis.

Abstracts were ranked on a scale from 10 points (excellent/highly appropriate for the conference) to 1 point (not appropriate/rejection). For every abstract an average grade was then calculated and all abstracts were ranked accordingly. Abstracts, where evaluators have differed by more than 2 points, have been reviewed a second time by the organizers.

Review criteria were the fit with the conference theme, novelty and the scientific quality of the proposal.

The 53 members of the review panels are:

Steinar Andresen, Fridtjof Nansen Institute
Steffen Bauer, German Development Institute (DIE)
Thomas Bernauer, ETH Zurich
Michelle Betsill, Colorado University
Frank Biermann, Vrije Universiteit Amsterdam, IVM
Raimund Bleischwitz, Wuppertal Institute
Clara Brandi, German Development Institute (DIE)
Per-Olof Busch, University of Potsdam
Klaus Dingwerth, University of Bremen
Ines Dombrowsky, Helmholtz Centre for Environmental Research (UFZ)
Lorraine Elliott, Australian National University
Robert Falkner, London School of Economics and Political Science
Sunayana Ganguly, German Development Institute (DIE)
Francois Gemenne, Sciences Po, Paris
Aarti Gupta, Wageningen University
Rüdiger Haum, German Advisory Council on the Environment (SRU)
Julia Hertin, German Advisory Council on the Environment (SRU)
Chinwe Ifejika Speranza, German Development Institute (DIE)
Klaus Jacob, Freie Universität Berlin, FFU
Thomas Jahn, Institute for Social-Ecological Research (ISOE)
Helge Jörgens, Freie Universität Berlin, FFU
Kirsten Jörgensen, Freie Universität Berlin, FFU
Sylvia Karlsson-Vinkhuyzen, University of Turku
Claudia Kemfert, German Institut for Economic Research (DIW)
Kristine Kern, Åbo Akademi University and Wageningen University
Andreas Kraemer, Ecologic Institute
Teresa Kramarz, Munk Centre
Nana Künkel, German Agency for Technical Cooperation (GTZ)
Louis Lebel, Chiang Mai University
Markus Lederer, University of Potsdam
Mans Nilsson, Stockholm Environment Institute (SEI)
Ralf Nordbeck, University of Natural Resources and Life Sciences, Vienna
Sebastian Oberthür, Free University Brussels
Chukwumerije Okereke, University of Oxford
Lennart Olsson, Lund University
Susan Park, University of Sydney
Matthew Paterson, University of Ottawa
Philipp Pattberg, Vrije Universiteit Amsterdam, IVM
Anna Pegels, German Development Institute (DIE)
Ulrich Petschow, Institute for Ecological Economy Research (IOEW)
Klaus Rennings, Centre for European Economic Research (ZEW)
Heike Schroeder, University of Oxford
Bernd Sommer, Institute for Advanced Studies in the Humanities (KWI), Essen
Detlef Sprinz, Potsdam Institute for Climate Impact Research
Lindsay Stringer, University of Leeds
Andreas Thiel, Humboldt University Berlin
John Turnpenny, University of East Anglia (UEA)
Nicolien van der Grijp, Vrije Universiteit Amsterdam, IVM
Stacy VanDeveer, University of New Hampshire
Christian von Haldenwang, German Development Institute (DIE)
Lynn Wagner, International Institute for Sustainable Development
Fariborz Zelli, German Development Institute (DIE)
Conference Team

Conference Chairs

Klaus Jacob, Environmental Policy Research Centre, Freie Universität Berlin
Steffen Bauer, German Development Institute (DIE)

Conference Manager

Lisa Münch, Environmental Policy Research Centre, Freie Universität Berlin

Assistant Conference Management

Svenja Fox, Environmental Policy Research Centre, Freie Universität Berlin

Website

Arndt Leininger, Environmental Policy Research Centre, Freie Universität Berlin

International Steering Committee

Michele M. Betsill, Colorado State University, Fort Collins
Frank Biermann, Vrije Universiteit Amsterdam, IVM
Klaus Jacob, Freie Universität Berlin, FFU
Philipp Pattberg, Vrije Universiteit Amsterdam, IVM
Imme Scholz, German Development Institute, Bonn
Miranda Schreurs, Freie Universität Berlin, FFU
Oran Young, University of California, Santa Barbara
Student Volunteers (as of 4 October)

Anja Betker
Anna-Lena Guske
Anne Siemons
Anusha Anthonipillai
Catherine Brouers
Charlotte Schone
Chunyu Liu
Diana Muschiol
Hauke Broecker
Hyeyoon Park
Ingrid Bozsoky
Inken Bartels
Inken Reimer
Janine Budich
Jonas Tumbrink
Karol Sabo
Katharina Klein
Lavinia Mawlong
Lena Strehlow
Linda Bergset
Lisa Pettibone
Lukas Graaf

Mareike Rehl
Maren Birkenstock
Margarita Doneliene
Max Middeke
Michael Kölle
Moira Jimeno
Nils Radeisen
Patrick Strohmeier
Philipp Reiß
Salwen Brunel
Samah El-Bakri
Simon Ubong
Stefan Cetkovic
Theo Hofmann
Theresa Rauch
Thuyn Chinh Duong
Tobias Ide
Tobias Ide
Yamashita Noviaki
Yogi Hendlin
Xinlei Li
How to get to the Conference Venue

The 2010 Berlin Conference on the Human Dimensions of Global Environmental Change will take place in the Henry-Ford-Building at the Freie Universität Berlin, which is located in the Dahlem area in the south-western district of Berlin-Zehlendorf (main entrance to the HFB: Garystraße 35).

If you use public transport while in Berlin, the closest station to the conference site is Thielplatz on subway-line U3 (direction to Krumme Lanke coming from the city centre).

At the registration you will be/have been provided with tickets, covering up to four trips within the local public transportation system (BVG). These tickets are valid for subway (U-Bahn), tram, S-Bahn and busses within the zones A+B. For more information please check the little BVG-map in your conference bag or ask on the registration desk.

Please note: in order to get to the airport Schönefeld you need a ticket covering also zone C.
Rooms and Floor-plan

All plenaries, semi-plenaries and special sessions will take place at the Henry-Ford-Building (HFB). Also, the lunch buffet and the coffee breaks will be served in the foyer of the HBF.

Ground floor of the Henry-Ford-Building
First floor of the Henry-Ford-Building

Please note: some paper sessions scheduled on Friday morning (11:00 – 12:30) will take place in the building of the Economics (Wirtschaftswissenschaften) vis-à-vis of the HFB. This is a two minutes walk from the HFB guided by signs (see also map on page 12 and 13).
Facilities at the Conference Venue

Meals and Drinks

The conference registration fee covers all lunches, including drinks, and coffee breaks on the conference days (8-9 October). The conference dinner on Saturday, 9 October is included as well.

Lunch (buffet-style) and snacks during the coffee breaks will be served in the foyer of the Henry-Ford-Building.

Outside the breaks, you can buy drinks or food at different places around the conference venue. There is a french bakery shop at Ihnestraße/Garystraße, a Mensa in the law department (Van't-Hoff-Straße) and a cafeteria upstairs at the Otto-Suhr-Institut/Political Science.

Internet Access

Wireless internet access will be available during the conference period. The name of the network is “conference”; the conference key is “m6s2xiht”.

Accessibility

All buildings on the conference site are equipped with elevators, guaranteeing accessibility for all conference participants.
Speakers of the Berlin Conference

Peter-André Alt
Prof. Dr. Peter André Alt is professor of German Literature and, since June 2010, President of Freie Universität Berlin. His research areas include literature and knowledge discourses in early modern culture, literature and hermeticism, early modern literature (17th century), literature and politics in the age of reason, literature and aesthetics in German classicism as well as literature and psychoanalysis. Peter André Alt has held numerous offices in the course of his career, most recently at Freie Universität as Dean of the Department of Philosophy and Humanities from 2007 to 2009, as a member of Freie Universität’s Academic Senate from 2007 to 2010, as Head of the Friedrich Schlegel Graduate School of Literary Studies, and as Director of the Dahlem Research School.

Lázló Andor
Dr. László Andor is a Hungarian economist and associate professor at the Economics Department at the Corvinus University of Budapest and at the King Sigismund College. Since 10 February, 2010 he has been Commissioner for Employment, Social Affairs and Inclusion. Before joining the EU commission, he was a member of the board of directors of the European Bank for Reconstruction and Development (EBRD) in London, advisor in the Prime Minister’s Office and advisor for the World Bank on SAPRI (Structural Adjustment Participatory Review Initiative).
Bernard Avril

Dr. Bernard Avril is a Science Officer for Geosciences and Environmental Sciences at the European Science Foundation (ESF). He received a PhD. in applied physics (Paris 6 Univ., France), with a background in oceanography, meteorology, environmental sciences, and a keen interest in sustainable development. He is currently in charge of the “Responses to Environmental and Societal Challenges for our Unstable Earth” (RESCUE) foresight initiative. He is also the Chair of the Reference User Group for the MedSeA project and a member of the ASLO Public Policy Committee.

Thomas Bernauer:

Prof. Thomas Bernauer is a professor of political science at ETH Zurich. He and his research group are based at the Center for Comparative and International Studies, a joint institution of ETH Zurich and the University of Zurich, and at ETH Zurich’s Institute for Environmental Decisions. Since 2004 he is a member of the Swiss National Science Foundation’s research council. In his research and teaching Thomas Bernauer focuses on international environmental and economic issues. That is, he analyzes political and other conditions under which environmental and economic problems that extend beyond national borders can be solved.
Michele Betsill

Dr. Michele Betsill is an Associate Professor of Political Science at Colorado State University. She is a founder and co-leader of the Environmental Governance Working Group as well as an affiliate of the Center for Multi-Scale Modelling of Atmospheric Processes. She also is a member of the Scientific Steering Committee of the Earth System Governance project. Her research focuses on the politics of global climate change, from the local to the global level. In particular, she works on the various policy approaches to controlling greenhouse gas emissions. Michele Betsill teaches courses in international relations, global environmental politics and qualitative research methods.

Frank Biermann

Prof. Frank Biermann is professor of political science and of environmental policy sciences at the VU University Amsterdam, The Netherlands. He specialises in the study of global environmental politics, with emphasis on climate negotiations, UN reform, global adaptation governance, public-private governance mechanisms, the role of science, North-South relations, and trade and environment conflicts. Biermann is also the founding director of the Global Governance Project (GLOGOV.ORG), a research programme of 12 European institutes. Internationally, Biermann serves as chair of the Scientific Steering Committee of the Earth System Governance Project, a ten-year international core research project of the International Human Dimensions Programme on Global Environmental Change (EARTHSYSTEMGOVERNANCE.ORG).
**Janos Bogardi:**

Prof. Janos Bogardi has been the Director of the United Nations University - Institute for Environment and Human Security (UNU-EHS) since 2003. Simultaneously he is also Vice-Rector a.i. of the Vice Rectorate in Europe since May 2007. Janos Bogardi started his UN career in 1995 with the United Nations Educational Scientific and Cultural Organization (UNESCO) in Paris, France, as a Senior Programme Specialist and soon became the Chief of the Section on Sustainable Water Resources and Management.

**Carola Donner-Reichle:**

Dr. Carola Donner-Reichle is senior advisor Office of the Director General, Regional and Sustainable Development Department, Asian Development Bank in Manila, Philippines. Prior to joining the ADB she was director of the Social Development Department at Capacity Building International, Germany (Internationale Weiterbildung und Entwicklung; InWEnt). Before that she served the Federal Ministry for Economic Cooperation and Development (BMZ). Earlier positions included advocacy work with the Protestant Association for Cooperation in Development, including advocacy work and head of South Asia Department; expert with the International Labour Organisation (ILO), Regional Head Office for Asia and Pacific in Bangkok, and research fellow at the Institute of Development Studies in Dar es Salaam.
Anantha Duraiappah:

Dr. Anantha Kumar Duraiappah is Executive Director of the International Human Dimensions Programme on Global Environmental Change (IHDP). Until his appointment with IHDP, Dr. Duraiappah served as the Chief of the Ecosystem Services and Economics Unit with the United Nations Environment Programme (UNEP) in Nairobi, Kenya. Within UNEP, Dr. Duraiappah was responsible for establishing the Millennium Ecosystem Assessment Knowledge to Action Global Strategy and for developing the field of the economics of ecosystem services. He was also the team leader for the establishment of the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES).

Eran Feitelson:

Dr. Eran Feitelson is Head of the Federmann School of Public Policy and Government at the Hebrew University of Jerusalem since 2004 and professor at the same university since 2008. Dr. Feitelson was also a research fellow at the Truman Institute for the Advancement of Peace and senior visiting researcher at the Center for Urban Policy and the Environment, School of Public and Environmental Affairs at Indiana University in Indianapolis. He obtained his Ph.D. in Geography and Environmental Engineering at the Johns Hopkins University. Dr. Feitelson has been Scientific Coordinator of the Israel Sustainable Development Strategy and methodological consultant for the Ministry of Interior.
Itay Fischhendler:

Dr. Itay Fischhendler is Head of the Environmental Management Planning and Policy Program at the Hebrew University Jerusalem since 2006 and a senior lecture since 2009. In 2003 he gained his Ph.D. with a thesis about: Spatial adjustments as a mechanism for resolving river basin conflicts. Dr. Fischhendler has also been a research fellow at the Department of Resource Economics of the University of California, Berkeley and at the Lyndon Johnson School for Public Affairs at University of Texas in Austin.

Roberto Guimarães:

Prof. Roberto Guimarães is Vice Chair of the Scientific Committee of the IHDP-International Programme on Human Dimensions of Global Change. He is Chief of the Social Analysis and Policy Section of the UN Social Perspectives on Development Branch. He has been a key player in international summits and is well into the international development scene. Professor Guimarães is now at the School of Public and business Administration of the Getulio Vargas Foundation in Rio de Janeiro, and visiting professor at the Doctoral Program on Environment and Society of the University of Campinas in São Paulo.
Tim Jackson:

Tim Jackson is Professor of Sustainable Development in the Centre for Environmental Strategy (CES) at the University of Surrey. His current research interests include consumer behavior, sustainable energy systems, ecological economics and environmental philosophy. In the last twelve years he has pioneered the development of an ‘adjusted’ measure of economic growth – a ‘green GDP’ – for the UK. Since January 2003, Tim has been employed at CES under a research fellowship on the ‘social psychology’ of consumer behavior. He is author of the critically acclaimed “Prosperity without growth: Economics for a finite planet”. Besides, Tim Jackson leads the Economics steering group of the Sustainable Development Commission in the UK.

Martin Jänicke:

Professor Dr. Martin Jänicke was promoted to professor of political science in 1970 and appointed professor of comparative analysis at the Free University in 1971. He was director to the Environmental Policy Research Centre (FFU) from 1986 to 2007. Jänicke has been a member of numerous scientific boards and councils, among others of the German UNESCO-Commission (1991-96) and of the National Committee for Global Change Research. Jänicke is furthermore a member of the International Advisory Board of the Wuppertal Institute for Climate, Environment, Energy and of the curatorship of the Deutsche Bundesstiftung Umwelt (DBU) and director of the Foundation for Environmental Protection (Stiftung Naturschutz) Berlin.
Johannes Karte

Dr. Johannes Karte is Programme Director (Physics, Mathematics, Geosciences) and amongst others responsible of the German National Committee on the Global Change Research, one of the DFG Statutory Bodies.

David Katz

David Katz is currently serving as a Porter Fellow, a post-doc position intended to increase research and course offerings in environmental fields throughout Tel Aviv University. David Katz past research has focused largely on the economics of water resource management. His current research topics include environmental & resource economics, links between economic development and resource consumption, water policy, and corporate environmental management and strategy.

Dirk Messner:

Prof Dr. Dirk Messner is Director of the German Development Institute/ Deutsches Institut für Entwicklungspolitik (DIE) since 2003 and a Professor of Political Science at University Duisburg-Essen since 2006. He is a member of the German Advisory Council on Global Change (Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen, WBGU) since 2004 and serves as the councils vice-chair since 2009. His work areas and research interests include globalisation, global governance, global development, climate change, low carbon development and the Asian drivers of global change.
Adil Najam:

Adil Najam is an expert in international diplomacy and on sustainable development and currently serves as the Director of the Pardee Center for the Study of the Longer-Range Future at Boston University. He is also Frederick S. Pardee Professor of Global Public Policy and a Professor of International Relations and of Geography and Environment at Boston University. He has published widely on the role of developing countries in environmental policy and politics and on different aspects of sustainable development. He has been a Convening Lead Author for the third, fourth and now fifth assessment reports of the Intergovernmental Panel on Climate Change (IPCC), work for which the IPCC was collectively awarded the 2007 Nobel Peace Prize. In 2009, he was appointed by the UN Secretary General to serve on the UN Committee for Development Policy and in 2010 he was awarded one of Pakistan’s highest civil awards, the Sitara-i-Imtiaz (Star of Excellence).

Michael Renner:

Michael Renner is a Senior Researcher at Worldwatch Institute. He has analyzed the relationship between environment and employment since the early 1990s. In 2007-2008, Michael Renner was the lead author of a report commissioned by the United Nations Environment Programme and the International Labour Organization. During the past two decades, Michael has also examined linkages between environment and peace and security, and he directed Worldwatch's Global Security Project.
J. Timmons Roberts:

J. Timmons Roberts is Director of the Center for Environmental Studies and Professor of Sociology and Environmental Studies at Brown University in Providence, Rhode Island (USA). He was a James Martin 21st Century Professor at Oxford University's Environmental Change Institute in 2006-2007, and a Research Fellow at William and Mary's Institute for the Theory and Practice of International Relations in 2008-2009. His main current research concerns global inequality and climate change (in who is suffering most, who caused the problem, and who is taking action), and the role of foreign aid in addressing climate justice matters. His other work concerns both the political economy and the social psychology of environmental issues. He is leading work on adaptation strategies to deal with climate change in Rhode Island.

Imme Scholz:

Dr. Imme Scholz is Deputy Director of the German Development Institute/ Deutsches Institut für Entwicklungspolitik (DIE). She is a member of the North South Advisory Group to the Heinrich Böll Foundation and of the chamber for sustainable development of the Evangelical Church in Germany (EKD). Her main work areas and research interests are environment and development, climate change, global environmental governance as well as forest policy.
Miranda Schreurs:

Prof. Dr. Miranda Schreurs is the director of the Environmental Policy Research Centre and Professor of Comparative Politics at the Freie Universität Berlin. Prior to this she was Associate Professor in the Department of Government and Politics, University of Maryland. Schreurs’ work focuses on comparative environmental politics and policy in Europe, the US, and East Asia. In July 2008 Miranda Schreurs was appointed to the German Advisory Council on the Environment.

Klaus Töpfer:

Prof. Dr. Klaus Töpfer is Executive Director of the Institute for Advanced Sustainability Studies (IASS) in Potsdam. He was Executive Director of the United Nations Environment Programme (UNEP) and Director-General of the United Nations Office at Nairobi (UNON) from 1998 to 2006. He also served as Acting Executive Director of the United Nations Centre for Human Settlements (formerly UNCHS/Habitat) from 1998 to 2000. Before joining the United Nations, Klaus Töpfer held several posts in the Federal Government of Germany. He was Federal Minister of Regional Planning, Building and Urban Development as well as Coordinator of the Transfer of Parliament and Federal Government to Berlin from 1994 to 1998 and Federal Minister of the Environment, Nature Conservation and Nuclear Safety from 1987 to 1994.
# Programme Overview

**Friday, 8 October**

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<td>8:00 – 9:30</td>
<td><strong>Check-In/ Registration</strong></td>
<td>Foyer</td>
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<td>9:30 – 10:00</td>
<td><strong>Welcome Addresses</strong></td>
<td>Lecture Room A</td>
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<tr>
<td></td>
<td>Prof. Peter-André Alt, President of the Freie Universität Berlin</td>
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<td>Dr. Klaus Jacob, Conference Chair, FU Berlin</td>
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<td>Dr. Steffen Bauer, Conference Chair, German Development Institute (DIE)</td>
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<td>10:00 – 11:00</td>
<td><strong>Plenary I:</strong></td>
<td>Lecture Room A</td>
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<td>Lázló Andor, (via video message) EU Commissioner for Employment, Social Affairs and Inclusion</td>
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<td></td>
<td>“The Equity and Governance Dimensions of Environmental Change and Climate Adaptation”</td>
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<td>Prof. Adil Najam, Pardee Center for the Study of the Longer-Range Future at Boston University, USA</td>
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<td>11:00 – 12:30</td>
<td>Lecture Room B</td>
<td>Lecture Room A</td>
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<td>A1 - Governance of Natural Resources (I)</td>
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<td>A2 - Impact Assessment I</td>
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<td>A3 - MEA Success or Failure</td>
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<td>A4 - Integrating the Environment</td>
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<td>A5: Enabling Non-State-Actors</td>
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<td>A6: Low Carbon Development</td>
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<td>A7: Management of GEC</td>
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<td>A8: Managing Global Flows</td>
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<td>Conference Room II</td>
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<td>12:30 – 13:30</td>
<td><strong>Lunch Break</strong></td>
<td>Foyer</td>
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<th>Time</th>
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<tr>
<td>13:30 –</td>
<td>Lecture Room A</td>
<td><strong>Plenary II:</strong></td>
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<td>14:30</td>
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<td>“International Climate Justice and the Road to Cancun:</td>
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<td>Identifying and Addressing the Structural Roots of Non-Cooperation”</td>
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<td><strong>J. Timmons Roberts</strong>, Center for Environmental Studies at Brown</td>
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<td>University, USA</td>
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<td>14:45 –</td>
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<td>Governance of Sustainable Development: RIO Plus 20</td>
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<td>B1 - Legal Dimension of Environmental Policies</td>
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<td>B2 - Stakeholder Legitimacy</td>
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<td>B5 - Multi-level Governance: Local responses (I)</td>
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<td>AudiMax</td>
<td>B6 - Environment and Security: Discourses and Evidence</td>
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<td>C2 - Multi-level Governance: Local Responses (II)</td>
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<td>**Plenary III:**<em>Social Dimensions of Global Environmental Change and Governance”</em></td>
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<td><strong>Dirk Messner,</strong> German Development Institute, Germany</td>
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<td><strong>Semi-Plenary III:</strong> Global Burden Sharing and the Crisis of Multilateral Environmental Agreements</td>
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<td><strong>Semi-Plenary IV:</strong> Securitization of Environmental Change and Governance: Reconsidering “Environmental Security” in View of Global Warming</td>
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<td>E1 - Effects of Transboundary Regimes</td>
<td>E2 - Discourses on the Environment</td>
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<td>F4 - Governance of Natural Resources (II)</td>
<td>F5 - Lifestyles as Drivers of Change</td>
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<td>F7 - Benefit Sharing, Income and Eco-System Services</td>
<td>F8 - Sustainability Transition in Industrial Countries</td>
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<td>&quot;Sustainability Studies: Thinking the Social and Environmental Dimension Hand in Hand&quot;</td>
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<td><strong>Klaus Töpfer,</strong> Institute for Advanced Sustainability Studies, Germany</td>
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<td>19:00 – 19:20</td>
<td><strong>Closing Speeches</strong></td>
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<td><strong>Frank Biermann,</strong> Institute for Environmental Studies, Vrije Universiteit Amsterdam</td>
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<td><strong>Michele Betsill,</strong> Environmental Governance Research Working Group, Colorado State University</td>
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In 2012, a new summit of the heads of states and governments will be held, again hosted by Brasil in Rio de Janeiro. 20 years after the world summit which agreed on the Agenda 21 and which was the starting point of many international agreements new momentum should be given to strengthen the Governance of Sustainability. The preparations for the summit are under way. The panel will discuss the challenges and the prospects for a renewed world agenda to link issues of development and the environment.

“The Nexus of Development and the Environment”

**Roberto Guimaraes**, School of Public and Business Administration
Getulio Vargas Foundation, Brazil.

“Beyond Rio+20: Imagining an Institutional Framework for Sustainable Development”

**Adil Najam**, Pardee Center for the Study of the Longer-Range Future at Boston University, USA

“Opportunities to Strengthen the Global Governance for a Sustainable Development”

**Imme Scholz**, German Development Institute, Germany
The transition to sustainability will have a huge impact on the economy: The demand for more efficient products and processes, the shift to renewable energies and resources threatens traditional economic sectors. It is quite open how car industries, agriculture, coal based electricity production and other branches of the economy will look like in the future. To prepare adequately for the challenges of sustainability, a structural change is needed. On the one hand, losses will be compensated by the fast growing sectors of green tech. On the other hand, such structural changes are an opportunity to question the traditional perception on the need for economic growth and the measurement of welfare.

“Measuring Welfare and Humankinds Prospects for Prosperity Without Growth”

Tim Jackson, University of Surrey, UK

“Accelerating ecological Modernisation”

Martin Jänicke, Environmental Policy Research Centre, FU Berlin

“Opportunities for Employment in the Green Tech Sectors”

Michael Renner, Worldwatch Institute, USA
The failure of the Copenhagen Climate Change Conference of December 2009 epitomizes the limits of international environmental negotiations. Once tangible issues of financing, binding targets and international burden sharing are one the negotiation table, the “business as usual” mode of environmental multilateralism typically results in a deadlock. Rather than overcoming deadlocks in substance, multilateral environmental agreements often seek to circumvent them by developing additional institutional mechanisms. Specific instruments for the transfer of finance, knowledge or technology thus proliferate and further the fragmentation of global environmental governance. These instruments are typically voluntary and highly issue specific. Some of these instruments, like the Clean Development Mechanism under the Kyoto Protocol, are based on broader market systems and generate considerable financial transfers. The function of MEA financing mechanisms is inextricably linked to overarching questions of international burden sharing and the principle of common but differentiated responsibilities.

This semi-plenary session will focus on the financial dimension of international burden sharing as negotiated under existing multilateral environmental agreements and discuss inter alia

- the proliferation of transfer mechanisms and the need for a coherent institutional architecture;
- the prospects of innovative and self-sustaining financial mechanisms and their relevance for ongoing multilateral environmental negotiations;
- the linkages between global financial redistribution under MEAs and concepts of environmental equity;
- the role of pertinent agencies such as the Worldbank or the Global Environment Facility in the generation and disbursement of MEA-bound financial resources.

Carola Donner-Reichle, Senior Advisor on Capacity Building and Sustainable Development, Asian Development Bank

Anantha Kumar Durraiappah, Executive Director, International Human Dimensions Programme (IHDP) on Global Environmental Change

Dirk Messner, Director, German Development Institute and Vice-Chair, German Advisory Council on Global Change

Miranda Schreurs, Director, Environmental Policy Research Centre, Freie Universität Berlin
The end of the cold war has given rise to a broadening in the concept of national security. What was once defined as a set of external military threats, is now understood as also securing inter alia the provision of environmental protection and ecosystem services. A key driver of the subsequent securitization of environmental change and governance is the premise that scarcity of natural resources diminishes human security and can even lead to regional instability and conflicts. This notion is gaining further attention among academics and policy makers who expect resource scarcity to increase as a result of climate change. Concurrently, funding agencies and academic programs call on researchers to study the environment-security-nexus. Yet, the very validity of this nexus and its prospective implications for policy makers are subject to criticism. Some argue that it is merely a rhetorical device to garner support for specific policy agendas, others caution that focusing on environmental causes of conflict distorts conflict research as it distracts from more proximate causes. This session aims to critically reflect on the securitization of environmental change and governance by scrutinizing (1) the rationale behind securitization, (2) researchers’ ability to identify countries, environmental resources and political contexts that are prone to securitization, (3) the potential risks and benefits of securitizing environmental change and governance.
“Climate change, economic development and conflict: researching causal links”
Thomas Bernauer, ETH Zürich

“Securitization of environmental change and environmentally induced migration”
Janos Bogardi, Institute for Environment and Human Security, United Nations University, Bonn

Itay Fishhendler, Hebrew University, Jerusalem
& David Katz, Tel Aviv University

Discussant:
Eran Feitelson, Hebrew University, Jerusalem
Human life is changing the face of our planet in an unprecedented way. Rapid climate change, the extinctions of species, changes in land cover, the over-exploitation of water resources are all inextricably linked to human needs and economic activities. To cope with these problems more research is needed, not only on the impacts of global change but also on its driving forces.

Many new research communities have already evolved to address these mounting challenges, i.e. Sustainability Science, Ecological Economics, Socio-ecological research, and others. The emergence of these research communities is accompanied by innovations in methods and theory as well as the redrawing of the boundaries of disciplinary research. New approaches, such as multi- and interdisciplinary research, problem orientation, the international scope, long-term predictive and prescriptive approaches, are enhancing and sometimes replacing the research in the traditional disciplines.

How are the major European funding agencies reacting to these developments?

We invite the speakers to briefly present the strategic approaches of their organisations. Rather than presenting single research initiatives the panel should be an opportunity to discuss the long term visions for research in social sciences, economics, law, humanities, etc., as they relate to questions of sustainability and global environmental change. What are the priorities from the
viewpoint of the funding agencies? How does research on sustainability relate to traditional research? What is envisaged for a long term integration and durability of the new research communities? How is the quality of interdisciplinary and problem oriented research perceived and measured?

**Bernard Avril**, European Science Foundation (ESF)

**Johannes Karte**, German Science Foundation (DFG)
Special Session II: BISA-DVPW Roundtable:
Reaching across the Channel – Research on Global Environmental Governance in Germany and the UK

Time: Friday, 08/10/2010: 18:00 – 19:30

Chairs: Hannes Stephan, BISA / Keele University;
        Fariborz Zelli, DVPW / German Development Institute (DIE)

Participants will discuss current and future research on global environmental governance in Germany and the United Kingdom, addressing the following questions:

- What are commonalities and differences regarding predominant theories & schools of thought, methods and subjects in both research communities?
- To what extent have both communities influenced and inspired each other? Have new research fields emerged concurrently or at different times?
- What is the state of exchange and cooperation across the Channel? Could or should we do better? What are the advantages and drawbacks of integrating two different research traditions and talking to two different academic audiences?
- What are the big questions that will guide future research on global environmental governance in both communities?
Sponsors:

British International Studies Association (BISA) – Environment Working Group

German Political Science Association (DVPW) – Environmental Policy & Global Change Working Group

Panel Speakers:

Per-Olof Busch, DVPW / International Organisations and Public Policy, University Potsdam

Helge Jörgens, DVPW / Environmental Policy Research Centre, Freie Universität Berlin

Chukwumerije Okereke, BISA / Tyndall Centre for Climate Change Research ZICER, School of Environmental Sciences University of East Anglia

Philipp Pattberg, DVPW / Institute for Environmental Studies, Vrije Universiteit Amsterdam

Heike Schröder, BISA / Environmental Change Institute, University of Oxford

John Vogler, BISA / School of Politics, IR, and Philosophy (SPIRE), Keele University (via video link)
Conference Streams

Theme 1 – Adaptation and Governance

Friday 8th

A1    Governance of Natural Resources (I)
A6    Low Carbon Development
B3    Resilient Communities
B7    Capacities for Adaptation
C5    Preparing for Natural Hazards

Saturday 9th

D2    Migration
E7    Social Consequences of Environmental Change (I)
E8    Integrating Adaptation
F4    Governance of Natural Resources (II)
F6    Social Consequences of Environmental Change (II)

Theme 2 - Assessment and Valuation

Friday 8th

A2    Impact Assessment (I)
A7    Management of GEC
B4    Business Strategies
B8    Social Drivers of Change: Public Awareness
C1    Indicators
C6    Modelling Resource Use
Saturday 9th

D3  Appraising Technological Transfer
D8  Application of Scenarios
E3  Social Drivers of Environmental Change: Policies
E6  Appraising Adaptation Government
F1  Impact Assessment (II)
F5  Lifestyles as Drivers of Change

Theme 3 - Multi-level and International Politics

Friday 8th

A3  MEA Success or Failure
A8  Managing Global Flows
B5  Multi-level Governance: Local Responses (I)
B9  Interlinkages in International Environmental Governance
C2  Multi-level Governance: Local responses (II)
C7  National Interest and International Climate Policy

Saturday 9th

D4  International Justice/ Distribution
E1  Effects of Transboundary Regimes
E4  Trade-based Solutions to Environmental Challenges

Theme 4 - Policy Instruments and Integration

Friday 8th

A4  Integrating the Environment
B1  Legal Dimension of Environmental Policies
C3  Creating Markets
C8  Evaluating and Comparing Environmental Policies
Saturday 9th

D5 Financing Adaptation
E5 Impacts of Certification and Effectiveness
F2 Mixing Modes of Governance
F3 Private Actors in GEG
F7 Benefit Sharing, Income and Eco-System Services

Theme 5 - Legitimacy and Participation

Friday 8th

A5 Enabling Non-State-Actors
B2 Stakeholder Legitimacy
B6 Environment and Security: Discourses and Evidence
C4 Participatory Governance of Natural Resources

Saturday 9th

D1 Participation and Trust
D6 Reinventing Statehood
E2 Discourses on the Environment
F8 Sustainability Transition in Industrial Countries
Participatory Forest Resource Governance: The Mount Cameroon Experience

Nkemtaji Moses Nchotaji
Jovash Initiative for International Development, Norway;
nkemtajims@yahoo.co.uk

After the Rio Summit in 1992, Cameroon and most other countries in Africa adopted principles that have given communities legal rights in the management of natural resources. Mount Cameroon Region presents a typical example where this method of management has been introduced by the Ministry of Forestry and Wildlife in collaboration with International Agencies like GTZ and DED. These institutions introduced ecotourism in 1998 as part of the Mount Cameroon Project (MCP) aimed at conserving biodiversity and improving the livelihood of the communities in this area. Hunters and prunus africana (valuable medicinal plant demanded by pharmaceutical firms) harvesters are among the important actors that have been included in the new management structure. Primary data derived from interviews and questionnaires were used to evaluate the extent to which this management mechanism meets the goal of sustainable development. The theory of New Institutional Economics (NIE) by Ostrom, which outlines eight principles that guarantee resource appropriation at the local level, was used to guide the study. The results indicate that the behavior of hunters and prunus Africana harvesters have changed in favor of conservation through collaborative law enforcement.
Livelihoods have been improved as well with the introduction of income-generating activities (bee farming, snail farming and piggery), which have indirectly reduced the pressure exerted on natural resources. However, the study concludes that participatory governance initiatives result in fragile and conditional successes. If poverty reduction is not fully addressed, actors are unlikely to pursue the goal of sustainable development in Mount Cameroon. The theory of NIE thus provides a conditional understanding of natural resource management for sustainable development that is dependent on the wider context of development.

**Implementing affordable water prices in developing countries**

**Paul Lehmann**
Helmholtz-Centre for Environmental Research - UFZ, Germany; paul.lehmann@ufz.de

Water scarcity is a major issue in arid and semi-arid developing countries. In many areas of the world, scarcity is going to be aggravated by climate change in the future. These challenges call for reasonable concepts to use water. In this respect, economists have suggested to implement water prices which reflect the full use and non-use costs of water. Such approach would allow water utilities to recover their costs and provide for an efficient allocation of water. However, for most developing countries, it would also bring about a significant rise in water prices. This rise usually challenges another criterion which is highly relevant for policy-making but often neglected in economic analyses: the affordability of water pricing. According to this criterion, water pricing has to allow the poor to satisfy their minimum water requirements. This article reviews options for addressing affordability in water pricing. It sheds light on the often used but also widely criticized approach of increasing block tariffs. However, the article also goes beyond this approach and shows that there is a variety of
alternative (and possibly superior) solutions. In general, one can distinguish between (1) means to reduce the overall level of water pricing and (2) means to modify the structure (or tariff) of water pricing. Regarding the latter, one measure may be to differentiate the water price with respect to income or proxies for income, such as water consumption, household size or geographical location. Alternatively, uniform prices may be combined with rebates or subsidies which are related to income but decoupled from water consumption. For each of these approaches, this article discusses the theoretical implications for affordability — and whether they hold under real-world conditions. Moreover, the article addresses possible trade-offs between affordability and other relevant criteria, such as efficiency and cost recovery, under alternative pricing regimes.

Village Forest Councils: Emerging rural institutions in Tamilnadu state of India

K K Kaushal
Lok Kalyan Mandal, India; kaushal64@gmail.com

Tamilnadu, a southern state of India, has embarked upon a community involvement process to restock its forests through an Indian version of community forestry called Joint Forest Management. Tamilnadu Forestry Project, funded for US$200 million by the Japan Bank for International Cooperation was launched in 1997–1998 in this state of India and has evolved into a comprehensive poverty alleviation programme for the forest abutting villages where the proportion of poor people is the largest. People’s participation is structured through specially established local representative institutions called Village Forest Councils (VFCs). This article seeks to present a full account of the concept, working and effectiveness of the VFCs in Tamilnadu. Based on the author’s field experience as District Forest Officer working with the JFM program, it further suggests that VFCs are
evolving into important local institutions for empowerment, poverty alleviation and social development of forest communities.

VFCs are emerging as important and vital tier of the local self government. The entire planning, execution and monitoring of the programme is done by the VFCs, whose day to day affairs are looked after by its executive committee headed by elected president. The annual NTFP revenue for some of the VFCs has already crossed US $ 4000 and from the initial money of US $ 12000 for buffer zone, some VFCs have developed a corpus fund of US $ 24000 for microcredit as they are charging an interest of one percent per month from the beneficiaries. The VFCs control not only all the forest affairs and involvement of line departments but also serve as a forum for forest people to evolve a common strategy and wield collective bargaining power for assembly and parliamentary elections.

**Institutionalizing IWRM in Developing and Transition Countries – The Case of Mongolia**

**Lena Horlemann, Ines Dombrowsky**
Helmholtz Centre for Environmental Research - UFZ, Germany; lena.horlemann@ufz.de

Integrated Water Resources Management (IWRM) focuses on the coordinated management of water on a watershed level and can be understood as an approach to solve problems of spatial fit and institutional interplay. This, however, often requires a fundamental realignment of water sector institutions. The introduction of IWRM forms a challenge particularly for developing and transition countries that lack essential resources and face complex political dynamics.

In order to analyze opportunities and constraints in the institutionalization of IWRM in developing and transition countries, a case study on Mongolia was carried out. Mongolia suffers from
water scarcity, intensified by climate change and increasing depletion of its natural resources. As a transition country it is undergoing a rapid institutional change which is accompanied by a process of decentralization. While an attempt to introduce IWRM exists on paper, it is unclear how it will be made politically and institutionally operational.

Results of about 25 interviews and a critical review of policy and legal documents show that in Mongolia the processes of decentralization and institutional change themselves have lead to problems of fit and interplay. At the same time, attempts are underway to overcome problems of fit through the establishment of River Basin Councils. Yet these face challenges concerning legal form, financing and quorum. Problems of interplay arise when it comes to policy integration. A National Water Committee was established but suffers from little political influence. The Water Authority is endowed with little resources for effective work or enforcement of environmental legislation. Overall the institutionalization of IWRM is also hampered by political actors that benefit from the coexistence of (ineffective) modern formal and old informal institutions in order to “hybridize” their power while “depoliticizing” other actors.

Social Network Dynamics in Reef Fishery

Irendra Radjawali
Leibniz Center for Tropical Marine Ecology, Germany; irendra.radjawali@zmt-bremen.de

Live reef fishery is one of the important livelihoods which provide incomes for most of the small-island communities in Indonesia. The reef area of Spermonde Archipelago in Indonesia has been one of the main suppliers for the significant live reef food fish (LRFF) market in Hong Kong creating significant income for the community. However, this development is also followed by the emergence of destructive fishing practices, i.e. cyanide fishing and
overfishing. This practice leads to the depletion of the “highly-valued” fish bringing them to the vulnerable level to extinction and threaten the whole reef ecosystem as reef becomes vulnerable to the death.

Reef fishery in Spermonde Archipelago operates through three different types of social networks which constitute the whole LRFF business. At the local level, the patron-client networks locally known as “punggawa-sawi” form the fishing network based on debt, kinship and goodwill. At the regional level the patrons and the exporters all together with government officials and authorities form the risk insurance network based on the exchange of capital with security support. At the regional and global level, the exporters and Hong Kong based importers form the marketing networks. The continuing demand of LRFF market, the dynamic monsoon climate, and the depletion of fish result the dynamics of these networks.

However, there is still little attention which examine the dynamics of social networks in social-ecological systems like reef fishery. This paper offers a framework to better understand the complex interactions between social and ecological systems through understanding the social network dynamics. It examines to what extent understanding social networks dynamics in reef fishery is able to provide the basis for better fishery management systems which support the adaptive governance of marine and coastal social-ecological systems toward the desirable future of human-nature interactions.

**Conceptualizing re-scaling of water governance in Portugal, Spain and Germany**

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The paper aims to develop a framework for explaining shifts in the
territorial delimitation of and the level from which common pool resources are governed within different European industrialized countries. The described phenomenon is also called “re-scaling”. In broad terms, the framework will consider changes in characteristics of actors, characteristics of state action, characteristics of transactions, cost effectiveness of governance, property rights and governance structures as variables potentially explaining re-scaling of water governance. The mentioned variables recur to various theories of institutional change. The framework will subsequently be applied to the different ways in which Germany, Spain and Portugal dealt with the drivers of “re-scaling” comprised in the European Water Framework Directive (WFD) (Integrated planning and management of “hydrographic” regions). In Spain and Portugal the WFD coincided with re-scaling which implied shifts in the spatial delimitation and vertical allocation of water governance. In Germany, it resulted in setting up new coordination mechanisms between Länders that share a hydrographic region. In each case, the role of actors involved in resource management and the way transactions are considered in decision making processes have changed. Data on these three cases has been collected throughout extensive qualitative and quantitative field work. As a further step to coherent theorizing of “re-scaling” of resource governance, subsequently the paper discusses the explanatory value of the previously developed analytical framework. Specifically, it addresses the roles of state structures, changes in properties of transactions, mental models and ideologies and path dependency for decisions on the scale and delimitation of resource governance. As an outcome the paper aims at detailing a pathway towards the way different theories need to be articulated in order to adequately conceptualise re-scaling of resource governance.
If the economy is doing well, we are doing well - economic biases in integrated policy assessments

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Ex-ante policy assessments have seen an enormous rise as decision support tools for policy-making. Especially in the context of Sustainable Development Policies they are widely intended to contribute to more informed and balanced, i.e. ‘better’ decisions. While the first generation of assessments mainly focused on a single analytical dimension recent assessment approaches aim at the (integrated) analysis of multiple dimensions in order to provide more comprehensive information to decision-making. But how are the economic, the environmental and the social dimension of Sustainable Development actually balanced within assessment processes?

Drawing on empirical insights from six case studies on Strategic Environmental Assessments (SEA) in Austria, I argue that multidimensional assessments are at risk to be structurally biased towards the economic dimension. In contrast to the initial design of SEA as an environmental assessment instrument the analyzed cases followed a multidimensional approach, including economic and social aspects in the analysis. Beyond the economically biased interests of actors I explore the biased in-built dynamics in the
assessment procedure. First, in terms of content of analysis a bias is introduced through the selection of criteria and indicators. Especially indicators for the social dimension partly replicate the indicators in the economic analysis. Secondly, an epistemological and methodological bias emerges from the different techniques, data and information use as well as argumentation of analysis for the three dimensions. While methodologies for economic analysis are quantitative and precise, the analysis the environmental and social dimension often base on rough expert judgment and common sense argumentation. Thirdly, the narrow functional, spatial and temporal scope of the analyzed assessments further contributes to an overvaluation of the economic dimension. The paper concludes with a comparison of the case study results with insights from research on other integrated assessment approaches such as Sustainability Impact Assessment and (Regulatory) Impact Assessment.

**Sustainability Impact Assessment as a tool of environmental governance**

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My proposal aims at analyzing the mechanisms of “impact assessment” as a tool of environmental governance, more specifically “sustainability impact assessment” (SIA) of trade agreements created by the European Union as a way of ensuring that trade outcomes comply with sustainable development principles.

Sustainable development and its three dimensions – economic, environmental and social – have become a guiding principle of the international community, and there is a general assumption that trade can work for the promotion of this goal - poverty is seen as one of the main causes of environmental degradation, and an increase in international trade as one alternative to alleviate
“pollution of poverty”. Nevertheless, while the economic benefits of an open trading system are clearer, the social and environmental outcomes of trade agreements are still overlooked. Thus, in order to bridge the gap between commitment and compliance, mechanisms that bring international environmental norms into deliberations must be a part of the institutional setting of environmental governance.

The EU SIA emerged after other models of impact assessment, but its model extended the scope of the analysis also to the partners and to the social and economic sphere apart from the environmental one. SIAs final recommendations are not binding, but enhance public dialogue and can provide better governance in two ways: firstly, by providing data and information on the effects of trade policy on all involved actors; second, by enhancing public debate and generating indirect effects on trade negotiations, based on the findings of the studies, even if the negotiating positions are not directly modified.

This paper will take a pragmatic approach in this issue, analyzing a concrete SIA – prepared for the negotiation of the Association Agreement with MERCOSUR - and its criteria and final recommendations as a way of promoting environmental governance.

**Queer-intersectional challenges to notions of social well-being and vulnerability within environmental and social impact assessment**

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Most forms of Social Impact Assessment (SIA) conducted as part of Environmental Impact Assessment (ESIA) focus on the needs of seemingly coherent social groups and local communities. Through
Gender Impact Assessments (GIA), it has become evident that men and women are exposed to and confront social, economic and environmental realities in different ways. These approaches, in turn, shape their local responses to the environmental changes. Their ways of participating in society and decision-making are interrelated not only with location, age, socio-economic class or culture, but also with the sexuality and (gender) identity. Current debates about intersectionality pose queer and postcolonial challenges to the notions of well-being and vulnerability that up-to-date fail to integrate desire, sexuality and identity into gender and/or social analysis.

The new SOGI (sexual orientation and gender identity) strategy as implemented by UNAIDS and the Global Fund, offers an integrated human rights based approach to inclusionary assessment. Although the practicality of increased intersectionality in conducting multi-variable or multi-criteria analyses is still contested, the benefits in the social arena are immediately evident: The employment of less statistically-oriented, qualitative profiling methods in combination with deliberative, participatory elements, support the emergence of formerly invisible and disenfranchised groups, including women, the elderly, people with disabilities, and youth, now also encompassing gays, lesbians, bisexuals, gender variant or transgender people and intersexuals.

How can an intersectional SOGI approach be incorporated into EIAs? Which understanding of women’s and men’s sexualities and identities, affecting their different vulnerabilities and capacities to deal with climate change, can we develop? How do queered and intersectional methods with ESIA and GIA frameworks help foster efficiency and sustainability of policies, and programmes? How does identifying the most vulnerable groups through incorporation of a gender and sexuality perspective give a fuller picture of the relations people have built with ecosystems?
Climate change poses the ultimate dichotomy between social welfare and individual incentives because, despite the global benefits synonymous with mitigation, individuals lack incentive to reduce their own emissions. Using a public good experiment with a climate change framing, this paper examines the scope for cooperation in meeting a national mitigation goal; in particular, the experimental design examines how different sectors with differing marginal abatement costs distribute the responsibility of reducing emissions between themselves. The experiment consists of four treatments including the counterfactual baseline scenario which examines voluntary cooperation, a communication treatment examining the role of stakeholder participation in facilitating cooperation and, finally, two treatments simulating a carbon tax, where the carbon tax reflects an electricity levy. The results suggest that voluntary cooperation will not be sufficient to meet the mitigation target. While communication significantly increases average contribution levels, it also polarises individual player strategies between full cooperation and free riding. With the introduction of a tax, cooperation becomes near-universal. However, a carbon tax crowds out contributions in excess of a specified mitigation target. This emphasises the importance of choosing the correct tax level.
Science for Impact Assessment Tools – European examples for implicit research reaching sustainable development

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In the past years, the instrument of impact assessment (IA) has increasingly gained importance in the analysis of EU policies and their effects on sustainable development. The IA studies are carried out ex-ante by the respective Directorate Generals of the European Community and are based on quantitative as well as qualitative tools. The results of these IA studies are to provide information to support the decision making process for the policies and can be regarded as a governance option to reconcile environmental, social and economic elements. Applying IA is a result of the EU Sustainable Development Strategy and the Gothenburg process, whereas IA is expected to have the potential for delivering more sustainable development as well as enhancing the effectiveness and efficiency of policy decision making.

In the context of IA, the interlinkages between the environmental, social and economic component in order to reach sustainable development become especially obvious and need to be taken into account when carrying out the analysis as well as in the implementation process. The instrument of IA, its scope, analytic tools and political opportunities and challenges are of wide choice which is reflected in European as well as international research. This session aims to present a set of research papers which study the EU IA system through different disciplinary perspectives and addressed relevant research questions:

How does the implementation of IA contribute to sustainable development?
How is research-based knowledge used in the impact assessment processes?
What kind of methods could strengthen the science policy interface?
How is the development of evidence-based tools for impact assessment support analysed?

**A3: MEA Success or Failure?**
*Time: Friday, 08/10/2010: 11:00am - 12:30pm*
*Chair: Markus Lederer, University of Potsdam*

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**The Effectiveness of International Environmental Agreements: Empirical Findings from Treaty-level Panel Data**

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This study investigates the effectiveness of international environmental agreements (IEAs). There are numerous empirical studies that examine the effectiveness of IEAs but most examine variation in national ratification rates and regulated behaviors. This focus on country behaviors and country characteristics limits the ability to identify treaty attributes that influence the success of IEAs. To circumvent this limitation, this study develops and examines treaty-level panel data including 30 environmental agreements that have been in force over the previous 20 years. The fixed-effects and random-effects models are employed to identify the factors that significantly affect the performance of IEAs. This approach allows us to investigate the attributes of each IEA in greater detail and identify those factors that influence the effectiveness of agreements.

Our results show that several treaty-specific attributes to be important. Particularly, sanctions for noncompliance have emerged
as the primary factor that fosters IEA effectiveness. Mechanisms for financial assistance to weaker developing countries is also found to be important. On the other hand, technical assistance does not appear to foster IEA success. Our results also indicate that involving a considerable number of countries, especially large and fast-growing developing countries such as the BRICs, also fosters IEA effectiveness. Although, this is not compatible with a strict sanction for noncompliance, introducing a well-designed financial mechanism could serve as a possible solution to this conflict as well as aid in making IEAs more attractive and effective.

**The Influence of NGOs in Environmental Negotiations: A Quantitative Approach**

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Although previous work largely suggests that non-governmental organizations (NGOs) might have a positive impact on environmental negotiations to the extent that states in turn have a higher environmental awareness and are more likely to commit themselves to more effective environmental solutions, the empirical evidence is unclear. This study claims that the exclusive qualitative nature of the existing research limits the generalizability of the findings, and, hence, leads to this ambiguity. In order to address this shortcoming, this article employs a bargaining model and demonstrates that NGOs primarily help facilitating states’ information problems in negotiations. The authors then examine quantitative data on international environmental regimes, and, using multivariate statistical techniques, find evidence that NGOs do indeed positively influence environmental treaty negotiations. More specifically, the higher the influence of those civil-society actors and the more NGOs are effectively engaged during negotiations, the higher the degree of regime members’ commitment, i.e., the depth of cooperation. Finally, this paper also
finds evidence for an interaction effect between NGO influence and the effective number of NGOs.

Signed, but not ratified: Limits to U.S. participation in international environmental agreements

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Why do the United States sign environmental treaties, but not ratify? Two-level game theory says executives will sign only such treaties that can obtain the required support for ratification in the legislature. Over the past 20 years, however, several environmental treaties were negotiated and signed by the United States but could not find enough votes in the Senate to be ratified. This paper considers two possible explanations for this apparent puzzle. First, presidents may face divided government and upcoming elections that enhance uncertainty about domestic win-set size because they can upset previous majorities and change the preferences of Congress on an issue. This may have caused “involuntary” defection from international environmental cooperation. Second, a small U.S. win-set can in theory be increased by compensation and compromise between constituent groups, so that implementing legislation can pass. The president can also include compensation programs for key constituency interests in the international agreement that increase the domestic win-set, i.e. attempt to overcome resistance in Congress by pushing his policy agenda. Failure to secure ratification may be a result of overestimating the potential for negotiating a policy package capable of creating sufficient support to obtain Senate ratification, or pushing his agenda too far.

This paper examines these alternative explanations by comparing limits to U.S. participation in three international environmental negotiations: climate change, biodiversity, and chemicals. The cases exemplify institutional arrangements regulating executive-
legislative relations, and how debates in the Senate first and foremost focus on finding compensation programs for strong constituency interest groups as the best avenue for gathering enough support for policy change. My results point to explanation 2 as the most plausible account for why US administrations sign environmental treaties even when they might expect the treaty not to obtain Senate ratification.

**On Commitment Levels and Compliance Mechanisms: Determinants of Participation in Global Environmental Agreements**

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We argue that participation in international agreements is influenced by their design characteristics, notably commitment levels, measured by the specificity of obligations, and compliance mechanisms, measured by monitoring, enforcement, assistance, and dispute settlement provisions in treaties. We submit that specific obligations as well as monitoring and enforcement have a negative, and assistance and dispute settlement a positive effect on participation. These arguments are tested on a new dataset that includes information on ratifications of more than 200 global environmental agreements in 1950-2006. We find that specific obligations, assistance, and dispute settlement have the expected effects. Surprisingly, our results show that the presence (or absence) of monitoring and enforcement has no effect on participation. The latter finding suggests that monitoring and enforcement through mechanisms operating outside of treaties rather than through treaty obligations themselves are likely to play a significant role.
Why Have The Relatively Successful Attempts To Govern The World’s Production Of Chlorofluorocarbons Not Been Duplicated in Other Areas of Global Environmental Protection?

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Climate change due to global warming is one of many issues confronting countries which they cannot successfully deal with on their own. The purpose of this paper is to ascertain why international attempts by governments and institutions to forestall climate change by regulating and reducing greenhouse gas emissions have not been successful. This question is answered through an empirical study of the international politics of regulating chemicals which lead to ozone depletion and comparing this with the politics surrounding deforestation and CO2 emissions.

Part I reviews the world’s growing awareness of global environmental issues and the relatively successful attempts which have been made to govern the production of chlorofluorocarbons. Part II examines the growing influence of environmental NGOs on government’s response to concerns about environmental degradation and the unsuccessful attempts by states to prevent climate change by reducing deforestation and carbon gas emissions. Part III compares and contrasts the politics of ozone depletion with the political complexity of the problem of climate change brought on by global warming and analyzes alternative strategies for regulating the production of greenhouse gas emissions and reducing deforestation. The Conclusions section then offers suggestions on how greenhouse gas emissions might be regulated by governments in the near term (utilizing existing and new legislation), and even more effectively in the future by developing new international environmental governance and regulation regimes.
Reflexive governance and sustainable development – exploring the concept

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This paper explores the concept of reflexive governance with regard to the attainment of sustainable development. I take as a starting point the prevailing notion of sustainable development as of distributed and often conflicting objectives, interests and actors. Governance for sustainable development implies the adjustment of practices of governance along these integrative lines in order to ensure that social development proceeds along a sustainable trajectory. Reflexive governance, as I understand it, adds a procedural dimension to sustainable development and elaborates instruments and procedures that allow for integration. In this context, reflexivity is the capacity to turn back or bend back on oneself. When reflexivity is applied to larger societal phenomena, it refers to procedures to organise recursive feedback relations between distributed concepts, strategies and actors.

In the paper, I elaborate reflexive governance for sustainable development in two dimensions which have been key in the current debate of the concept: learning (policy learning, social learning) as a process where cognitive procedures are designed to create feedback on distributed objectives and interests that lead to change in the beliefs and social norms of the involved actors; and coordination , referring to, for example, multi-level institutional
arrangements where the upper level sets guidelines and principles which are then substantiated in specific programmes and instruments at the lower level, or coordination in networks where flexible actor arrangements complement the static and compartmentalised working of the state. On a more general level, reflexive governance is addressed as a normative-practical concept that helps to opening up and making discursive the existing shapes and mutual alignment of the societal institutions and actors in processes of sustainable development.

Reorganisation of Environmental Bureaucracy in Turkey: Strategies for Policy Integration or Sustaining Business as Usual

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There are several barriers to implementation of policies to mitigate adverse effects of environmental problems. In that respect, implementation of sound environmental policies requires environmental policy integration. However, fragmentation of bureaucracies and in particular political resistance of established bureaucracies pose a major challenge to environmental policy integration. Although perception of environmental crisis in the public and mounting environmental problems contributed to overcoming those barriers, bureaucratic traditions die hard and resist new forms of organisations and new ways of policy making and implementation. In those respects, pressures from below, political pressures from the public, and above, international pressures, play a major role in stimulating institutional change and environmental policy change. Yet again whether reorganisation ensures effective policy integration is a question deserve to be answered.

This paper aims to discuss the reorganisation of environmental bureaucracy in Turkey with reference to stated policy objective of
environmental policy integration. In fact, Turkey’s efforts towards harmonisation of its environmental legislation with EU environmental legislation bring a number of new avenues for policy integration. In this context, this paper aims to unearth whether reorganisation of the bureaucracy resulted in the stated environmental policy integration. Although the merger of ministries of environment and forestry in 2003 and attachment of State Hydraulic Works to the Ministry of Environment and Forestry were presented as an effort to ensure environmental policy integration, it will be argued that those efforts remain ineffective because dominant development paradigm is still at work and the objective of economic development dominates concerns over the environment. It is also argued that some new forms of governance, like autonomous regulatory boards, contributed the resistance towards policy integration and assured the predominance of already existing forms of development.

**Beyond Governance of Global Environment: Biofuels and Interplay between Climate Change and Agriculture**

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Recently, it is pointed out that the complex linkage between the global environment problems and other sector issues will come into being. The purpose of this study is to explore the effective ways of solving these complex-linked problems. Therefore, this study is to clarify the political relationship between energy sector, agricultural sector, and climate change in the United States and EU. For the analysis, I use the following two approaches to analysis. The first approach is the policy analysis by using the concept of “Institutional Interplay”, which is constructed with the theoretical concept of “Institutional Dimensions” that Young supported in the IHDP science project. I analyze the “Institutional Interplays” among climate change policy, energy policy and agricultural policy in the
United States and EU. And if there is the Interplay among the policies, I identify whether it means the “link” or “Interaction”. And, I clarify how the structures among agriculture, climate change and energy have been rerated in the each policy.

The second approach is the text analysis in the speech of U.S. and EU agriculture and environment ministers. Ministerial speeches reveal the government policy. And the stylistic features of the political speeches will be expressed in the words themselves. Therefore I analyze the speeches of EU Agriculture Commissioner, EU Environment Commissioner, Secretary of U.S. Department of Agriculture and Environmental Protection Agency in order for a network of co-occurrence of nouns in speech of each ministers, to be used as a supplementary measure to explore the relationship between the actual policies.

Finally, through the results obtained from this analysis, I get to the conclusion that strengthening scientific institution (e.g. IPCC) could be the one of the effective ways of solving complex global problems which relate to various problems.

**Impact of Phasing out Energy Subsidies on Developing Countries and Alternative Mitigating Mechanisms "Case study Egypt"

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Energy policy in general and energy subsidies in particular have direct and indirect impact on the sustainable development path in both developed and developing countries. The need to reform energy subsidies was one of the major issues addressed at the World Summit on Sustainable Development held in Johannesburg in September 2002.

While a proven long list of both environmental benefits and economic gains from reforming or phasing out subsidies was
affirmed both in theory and through international experience, still social and political consequences especially in developing countries is surrounded by uncertainty.

This fact is clearly reflected in the case of Egypt as one of the developing countries. Where despite clear evidence on the negative implications on the environmental and economic dimensions, energy subsidies are growing in both absolute and relative terms. The primary objective of this paper is to identify the social impact of phasing out subsidies and hence higher energy prices on consumer household welfare. To this end the study will evaluate the magnitude and distribution of domestic oil subsidies utilizing the methodological approach in Gupta and others. Then Households will be disaggregated according to expenditures level, so that welfare effects of different policies on poor households can be determined. The secondary objective of this paper is to examine the alternative ways of employing the current cooperation framework between Egypt and the EU to enhance the adoption of suitable alternative social mitigating mechanisms.
The influence of firms on the elaboration of climate policy in a democratic system is quite controversial. Firms do not form a solid bloc of opponents to environmental regulation. Some firms even expect to gain from such regulation, either because they offer goods and services that will allow other firms to comply with the regulation or because they are in a better position to comply than their competitors. As a result, the detailed features of climate policy are more important than the general thrust. Firms and industry sectors could try to influence those features rather than oppose the policy upfront. This paper extends existing analyses of the Swiss elite (Kriesi, 1980; Fischer et al., 2007) which is dominated by a small core of political actors with a high degree of integration in the decision-making process to the issue of climate policy.

Based on the analysis of business interest in Swiss climate policy (Börner, 2009), this paper investigates how these positions of the business community are translated into the decision making process of the Swiss CO2 law. Data for the empirical analysis are drawn from consultation documents on the Swiss CO2 law in 2005 and 2009, the corresponding word protocols of the Swiss...
parliament, interest affiliations and votes of the members of Swiss parliament. Discourse analysis traces the arguments of the Swiss business community formulated in the consultation process in the subsequent parliamentary debates. Social network analysis investigates potential influence and coalitions of private actors in Swiss climate policy.

**Climate Change in Brazil: The Impacts of Different Actors on the Creation of the National Policy**

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The establishment of the National Policy on Climate Change has caused a change in Brazil’s position concerning the adoption of greenhouse gas (GHG) reduction targets. Brazil still supports the application of the ‘principle of common but differentiated responsibilities’ and its implications in the way developed and developing countries must address climate change issues. However, for the first time, and shortly before the COP 15 in Copenhagen, the Brazilian government announced voluntary targets to reduce its GHG emissions (considering the business-as-usual scenario) to at least 36.1% (may reach 38.9%) by 2020 and included these targets in the law 12.187 of 2009 that established the National Policy on Climate Change. The decision-making process that led to the development of the climate policy involved several actors. This paper studies specific government commissions, business initiatives, and NGOs as actors involved in this process, addressing their roles, their contributions, and the future challenges of environmental governance concerning the national policy in Brazil. Those actors were studied in order to determine their influence and impact in shaping the Brazilian National Policy on Climate Change. It is argued that despite the growing involvement of NGOs and business initiatives in the discussions on a climate change policy,
there are some key challenges in its implementation, such as the
definition of concrete measures and reduction targets that will be
adopted in each sector (industry, transport, construction etc) as
well as the clarification of the financial resources that will be used
to achieve GHG reductions. These challenges still need to be
overcome by the government and environmental governance in
Brazil.

**Participation and deliberation: could deliberative
processes empower civil society participation in
cclimate governance?**

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Participation of civil society is one of three key mechanisms of
democracy (Lindskog and Elander 2010) and thereby crucial to
effectively addressing socially complex problems (Kahane 2010)
such as climate change. The principle of civil society engagement in
global governance of climate change is enshrined through the
United Nations to ensure that actors with differing perspectives
and interests are incorporated to address socially complex global
challenges.

22,000 accredited civil society representatives registered to attend
the Copenhagen climate talks as observers, in addition public
protests involved approximately 100,000 people on the streets of
Copenhagen (similarly large citizen protests were held
internationally). Despite such high levels of involvement, criticisms
of exclusion, marginalisation and voicelessness of civil society have
formed the common refrain. Following the outcome of the 2009
Copenhagen Conference, these criticisms raise questions about the
essential nature and extent of civil society participation in
international climate change negotiations as “authentic, inclusive
and consequential” (Dryzek 2009); and how the diversity of civil
society interests can and should be represented in global fora. In this paper we explore how deliberative processes could be utilised to increase the capacity of civil society to participate in future climate change discourse and also consider the potential of participatory processes to engage and empower ordinary citizens. We draw on observations of deliberative practices across multiples scales as a basis for theorising how participation could influence and/or offset prevailing power and interests around climate change governance. The paper draws on research outcomes from two deliberative processes, firstly, local Australian grassroots community-based climate action groups and; secondly, global deliberation undertaken in the lead up to the Copenhagen talks. Based on these findings, we propose potential ways in which the deliberative space can increase the capacity of civil society and citizens to participate in future climate change deliberations.

A mandate for local people’s voice: socio-cultural considerations for conservation policies in Madagascar

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Madagascar is well-known for its natural uniqueness but at the same time faces a tremendous habitat loss because of anthropogenic threats. As global initiative governments are encouraged to nominate protected areas in order to either stop or reduce biodiversity loss. While decisions on conservation activities are mainly based on epistemic grounds, the role of local people and their socio-cultural context in its complexity remains to be left out. Although conservation organisations demonstrate their willingness to cooperate with local people, cultural discrepancies are still too vast and yet inhibit a well-balanced and constructive collaboration.
In a social science study using participatory rural appraisal and semi-structured interviews in two biosphere reserves in the north of Madagascar we collected qualitative data from local people, local authorities and biosphere reserve management. The aim is (1) to contrast local value perceptions with western epistemic based understanding of forest resources and (2) to elaborate on local social organisation in the two Malagasy biosphere reserves. Results show on the one hand that by far not only provisioning services are conveyed as could have been expected, but also values that can be assigned to one of the three other categories: regulating, cultural or supporting services. On the other hand local people support a grouping in thematic associations, which can foster their recognition and potential social movements towards collectively defined goals in the conservation debate. These facts encourage dialogue between apparently differing positions on forest ecosystems that provide services to both the local and the global community.

Comparison of the role of NGOs in Natura 2000 implementation in Poland and Hungary: influence, outcomes and future prospects for Natura 2000 maintenance

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With their accession to the EU in 2004 Poland and Hungary had to implement the Natura 2000 program (N2000) for biodiversity protection. In both countries NGOs have been active throughout the implementation process. Forms and outcomes of NGO involvement, however, considerably differ between the two countries. This research analyses how the differences in NGO
activity and influence through the course of the N2000 implementation process can be explained. The analysis is based on in-depth interviews and written documents. Thanks to their expertise and collaboration among each other and with state nature conservation bodies, Hungarian NGOs were very influential during the site designation phase, contributing to the country’s site proposal. Cooperation with state authorities could be based on informal contacts within an existing advocacy coalition for nature conservation. In Poland the form of NGO actions considerably changed from opposition (publication of a N2000 shadow list) to cooperation with public institutions as trust in the legitimacy and expertise of NGOs evolved with the N2000 implementation process. In both countries NGOs had less chance for influence at the stage of developing N2000 maintenance schemes, in Hungary due to inter-sectoral conflicts, and in Poland the recognition for their participation is still low. The comparison shows that the existing architecture of the sector of biodiversity governance is decisive for NGO activities and determines whether they prefer to informally cooperate with state authorities or to publicly oppose them. In the European multi-level governance setting new opportunities were given to NGOs, who developed their capacities to participate in decision making, however for a real influence on the outcome in terms of the actual biodiversity conservation in the field, trust in their legitimacy and contacts across all involved sectors are crucial. Needs and potential for NGOs’ further engagement in N2000 management are discussed in the paper.
Governing low-carbon development in Africa

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While climate change poses profound challenges to African development it also offers great opportunities for linking energy poverty alleviation with low-carbon development. A few energy-intensive multinational companies in resource rich but poorly developed African countries have both significant impact and great potential to help drive low-carbon growth in these countries. Using Eskom–South Africa and Shell–Nigeria as case studies, the paper explores the opportunities for and barriers against low carbon-development and energy poverty alleviation in sub-Saharan Africa. Furthermore, the paper indicates the mix of corporate and government strategies, institutional requirements and policy options needed to exploit existing opportunities. In doing so, particular attention is given to distributional implications of alternative approaches and the governance frameworks that would most likely guarantee effective and equitable policy outcomes.

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Automobile industry is expected to play a key role in the global climate governance. This is because, first, the road transport sector accounts for about 16% of the total global CO2 emissions, with expected growth from 4 gigatonnes in 2000 to more than 9 gigatonnes in 2050. Second, the industry operates globally with its economic significance that could potentially give a rise to their political power over the international climate negotiations. Japan in particular, is the biggest automobile manufacturing nation as well as one of the key players in the international climate negotiations, and therefore has the potential to affect changes towards more sustainable road transportation sector on a global level. Against these backgrounds, this paper asks how the automobile industry can be the driver to push towards low-carbon society, especially through their developments of the sustainable technologies. To do so, this paper examines how Japanese public policies and business strategies have been influenced the developments of sustainable technologies in the automobile industry. As a result, it emphasises two factors that can be identified as the driving forces of Japanese sustainable technological innovation in the sector. First, technological innovation has been backed up by domestic fuel economy regulations, which can be characterised as ‘co-regulation’ between the government and the industry. Second, two international factors, environmental standards of importing countries, as well as differing trends in technological innovations in other major automobile producing countries – namely Europe and United States – have encouraged technological innovation in the Japanese industry. Based on these findings, this paper argues that
there is need for more international governance that would further encourages the business competition for sustainable technologies amongst the major automobile manufacturing nations, in order to push for the low-carbon society at the global level.

**Fostering Renewable Energy in South Africa – Barriers to Policy Implementation**

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The challenge of transforming entire economies is enormous; even more so if a country is as fossil fuel based and emission intensive as South Africa. However, in an increasingly carbon constrained world and already now facing climate change impacts South Africa has to reduce greenhouse gas emissions intensity soon and decidedly. The South African electricity sector is a vital part of the economy and at the same time contributes most to the emissions problem. Several policy papers have been drafted and published by the South African government to enhance energy efficiency and promote renewable energy. However, they fail to show large-scale effects. This reveals a gap between policy planning and actual implementation.

The paper discusses the potentials and possible shortcomings of the existing policy schemes and identifies the main factors leading to the implementation gap. It furthermore proposes measures to enhance implementation.

The major social barrier identified in the paper is the inherent power constellation of the South African energy sector, which is dominated by few para-statal enterprises. Their core competencies are fossil-fuel technology based, so they have no incentives to foster renewable energies. This power constellation crucially affects the energy innovation system, biasing research as well as education towards fossil-fuel technologies. The structure of the
energy sector furthermore prejudices relevant policy making, reduces the incentives of effective clean energy policy implementation and thus leads to a situation of ‘carbon lock-in’.

Another barrier is based in the economics of renewable energy technologies, i.e. their cost and risk structures. As most renewable energies are more expensive than conventional technologies, they offer no incentives for policy makers to support rapid deployment. Despite the necessity to deploy these technologies, their cost structure collides with the policy goal of cheap electricity provision and electrification of the poor parts of the South African population.

The effects of subsidies on diffusing new technologies: A case study of the Swedish subsidizing policy “The Local Investment Program”

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Although subsidizing policies are not highly evaluated in environmental economics since they are contrary to “The Polluter Pays Principle” and there is a budget constraint, many countries have in practice introduced several subsidizing policies and some of them have been effective in promoting investments to a certain degree.

This paper explores the conditions under which subsidizing policies are effective in diffusing new technologies using a case of a Swedish subsidizing policy, “the local investment program” (LIP) 1998-2002. In the LIP scheme, municipalities make an investment program for environmental protection in their region and subsidies are granted to excellent programs after screening by the Swedish government. An investment program in general consists of several projects by municipal authorities, municipal companies, private companies and so on. One of the features of the LIP is that subsidies are granted to each project through municipalities, so in
order for private companies, individuals and other organization to obtain subsidies their projects have to be included in a program by the municipality.

Most projects would not have been implemented without LIP subsidies, so we could evaluate the LIP promoted additional investments. But there were not many projects using new technologies although it was at first one of the purposes of the LIP. The reasons could be attributed to the fact that the LIP subsidies were granted through municipalities and to win the race for subsidies municipalities tended to avoid including projects with high uncertainty in their program. The competition among municipalities, which had been considered to promote unique programs, might prevent municipalities from introducing projects with new technologies in this case.

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**A7: Management of GEC**

*Time:* Friday, 08/10/2010: 11:00am - 12:30pm

*Chair:* Ruben Zondervan, International Human Dimensions Programme on Global Environmental Change (IHDP)

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**Sustainability Science and the Anthropocene: Re-negotiating the Role for Science in Society**

**Henrik Thorén, Giovanni Bettini, Eric Brandstedt**

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The concept of the Anthropocene conveys a radical novelty: humans have become a ‘geological actor’ and are able to influence and affect the biosphere to an extent unprecedented in history. This new state of affairs poses intertwined challenges to ecological, technological, political and normative systems. It also raises hard questions about knowledge and science. The emerging field of Sustainability Science seeks to respond to such challenges. In this
paper we focus on the interface linking sciences and society, and explore attempts within Sustainability Science to conciliate two possibly divergent goals. On the one hand, the sheer urgency of problems related to the Anthropocene (like e.g. climate change) calls for science to be more responsive to societal needs and provide quick-and-ready solutions to 'real-world' problems. On the other hand, a quality benchmark for science is still needed and wanted. How to avoid compromising one of the sides is an open question. In the literature on Sustainability Science, tendencies can be found to give science role to envision optimal, universally valid solutions to these challenges, as well as to negotiate these with society. If not cautiously done, this may lead Sustainability Science towards something akin to ‘social engineering’. Such a development faces risks of the following three kinds: (i) to ‘freeze’ a solution, i.e. losing critical/ reflective perspectives, (ii) to be less open to instances from society, (iii) to neglect the immanent plurality of wills in collective decisions making. We assess some of the assumptions and implications of such approaches, isolating their components with regards to the formulation of scientific questions, the procedures and methods employed, and the processes of transmission (and negotiation) of the results to society. We conclude by arguing that these challenges call for cautiousness when envisioning new forms for the intersections between science and society.

**An Action Theory of Adaptation to Climate Change**

**Klaus Eisenack, Rebecca Stecker**
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The paper presents an action theory to analyse adaptation to climate change. It provides hypotheses on barriers to adaptation and a framework to analyse them. It clarifies what is meant by „adaptation measures“ and critically reflects on established
concepts. Currently, many observers indicate substantial barriers to cope with the impacts of climate change. However, the often incoherent use of terms like autonomous and planned adaptation seems to be of little help here. There are no established methods that enable for operationalizing research on human or social adaptation. The action theory of adaptation intends to allow for rigorously clarifying the notion of adaptation in each specific research context, and delivers a template for hypothesizing on adaptation. The argument is developed by framing adaptation as an individual or collective action, and by building on established analyses of (social) action. To represent the bio-physical counterpart of adaptation, concepts from the DPSIR framework are used. The exposition of the concepts is underpinned by case examples. We conclude that basic components of the theory are (collective) actors, means and ends of adaptation. Ends may be targeted at socio-economic or bio-physical units that are exposed to climate change, but also at other receptors. The theory highlights that climate change affects many actors in different ways, and that their reactions are strongly interlinked. Actions tend to come in means-ends-chains. For understanding adaptation, it is necessary to address these interlinkages. Important barriers are caused by (1) a mismatch of the means that are necessary for an adaptation, that are available, and that are actually employed; (2) externalities and high transaction costs due to the interlinked actors, receptors and units that are exposed to climate change.
Social power is frequently absent, merely acknowledged, or narrowly conceptualized in Global Environmental Change (GEC) research. Oftentimes, power is equated with “capacities” to implement policies aimed at weathering external threats. This fails to recognize that GEC is not a risk external to humanity, but rather an internally generated phenomenon. Consequently, strategies (i.e., policies) to protect us from ourselves (!) are ultimately paradoxical and counter-productive. Instead, we need critical and historical understandings of the social conditions, including power, under which global challenges were created in the first place. This paper explores the reasons for the under-theorization of power in GEC literature. In addition to contextual explanations, such as the strong influence of the Intergovernmental Panel on Climate Change, there are disciplinary barriers which hinder the meaningful involvement of social scientists as well as, the straightforward and sound use of power theories by GEC researchers. As a first step to surmount such barriers, the paper outlines a heuristic compass for the navigation of non-experts across the abundant and sometimes cryptic literature on power. The vertical axis of this compass maps idealist versus realist positionings, while the horizontal one plots more contemporary debates on “agency versus structure”. It is argued that GEC mainstream research tends to conform, perhaps inadvertently, to structural realism by uncritically clinging to liberal democratic assumptions. The compass seeks to re-orient theoretically grounded discussions about the multiple power dimensions of GEC, which put at the centre the interrogation of power itself; of its origins, essence, and rationalizing mechanisms. In addition, it seeks to foster integral frameworks of power that
contribute to release GEC research from its policy-oriented bridles.

**The mobilization of international expertise for global governance in IAASTD: a failure in consensus building or a successful advocacy strategy?**

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Initiated in 2002 by the World Bank and the Food and Agriculture Organization (FAO), the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD, www.agassessment.org) is an interesting experience of an international expertise process aiming at improving global governance for sustainable development. It aimed to understand how agricultural knowledge, technologies and sciences could contribute to reduce hunger and poverty, improve rural livelihoods and at the same time reach environmental objectives. It involved the large mobilization of international scientific expertise, but also the participation of a diversity of stakeholders, and a validation of reports by an intergovernmental plenary. The design of the process was inspired by other global assessments like the IPCC and the Millenium Ecosystem Assessment.

Among these international assessments, IAASTD is particularly important as its focus on agriculture necessarily puts the stress on trade-offs and synergies between social and environmental implications of development. Assessing if and how IAASTD managed to reach its objectives will prove useful for other assessment processes, particularly in order to understand how social and economical controversies at the heart of the debate on sustainable development might be structured and dealt with by international expertise processes.

Regarding the initial objectives of this assessment and its participatory approach, many analysts criticize IAASTD because it
did not reach a consensus among all stakeholders. In this paper, we propose to consider also the alternative perspective of analysis, where this assessment serves an advocacy strategy for a new approach of global agriculture. In this alternative perspective, IAASTD can be considered successful. We also propose to consider that the difference between the two analytical frameworks can be useful in order to re-analyze recommendations for global assessments, and to reopen the diversity of the roles that expertise might play in global debates about environment and development where controversies are central.

A8: Managing Global Flows
Time: Friday, 08/10/2010: 11:00am - 12:30pm
Chair: N.N.

The effects of ‘private’ environmental initiatives on state regulation: a comparison of firm responses to NGO pressure within the global gold supply chain

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Through an examination of CSR initiatives in the gold mining industry this paper seeks to uncover the scope conditions under which private voluntary initiatives may hamper social and environmental regulation through the state as well as those conditions under which private initiatives may lead to more robust state regulation. Cases from the retail node in the global gold supply chain will be scrutinized using a small-n, comparative case study approach. The study attempts to inform the debate by studying firm preferences: why does a firm lobby for increased
regulation while its competitors do not? Why does the same firm lobby for increased regulation in certain circumstance but not in others?

Corporate social responsibility (CSR) is often portrayed as a practical and efficient route to reconciling the goals of liberal economics with those of environmental and social protection. This benevolent view of CSR is based largely on these initiatives playing a supplementary role to more stringent, binding regulation by the state. However, much of the CSR literature posits that firms often implement CSR initiatives as a way of avoiding more rigid regulation of their industry by government as well as avoiding the unwanted attention of environmental NGOs (cf. Lipschutz 2005; Lyon and Maxwell 2008).

In other words, CSR is often perceived as supplanting regulation by the state and a corporate strategy employed to avoid further scrutiny of the social and environmental effects of industry. In this sense, CSR can be seen as a suboptimal outcome and so a number of questions must be asked – Under what conditions does CSR act as a barrier to effective environmental regulation? What are the effects of CSR on the regulatory capacity – willingness and ability – of the state? This study hopes to make a modest contribution to the debate by focusing on firm preferences and strategies.

E-Waste Governance beyond Borders – The External Effects of EU Electronics Regulation on the US

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This paper explores the external effects of European Union electronic waste policy on the United States of America arguing that in the absence of political momentum to negotiate and implement ambitious international agreements, policy diffusion can play an important role in addressing global problems arising
through the growing generation of waste electronics. It finds evidence for the diffusion across different levels of governance, from the supra-national EU level to the sub-national level of the US States and from there eventually to the US federal level. Rather than concrete factual learning, the mere existence of ambitious EU e-waste policy played an influential role. The EU policy concepts ‘inspired’ the debate and policy-making in the US. The paper identifies the connections between EU and US e-waste legislation, analysing the roles of interdependence and transatlantic learning. It outlines the domestic variables that shape the diffusion of EU e-waste policy.

**Governing transboundary environmental impacts of consumption – the case of ICT**

**Stefan Werland, Florian Raecke, Holger Bär**

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Information and communication technology (ICT) products are one telling example for increasingly globalized production and consumption patterns and resulting distributional effects on a global scale. Consumption, which still takes place primarily in ‘Northern’ countries, is connected to a flow of valuable resources from developing countries to the industrialized world and at the same time leads to increasing environmental and social pressures mostly in developing states, where environmental costs are not internalized. For example, the mining of rare materials that are crucial for the production of electronic devices often involves poor working conditions and high environmental impacts; or an increasing quantity of electronic waste is exported to developing states where disposal and recycling takes place under dire working and health conditions. Both phenomena imply shifts of environmental burdens into developing countries. Therefore, the paper touches issues of international justice and
equity. It deals with the questions how ‘Northern’ countries can cope with the issue of transboundary environmental problems, which are caused by their domestic consumption, but which appear outside their own territory and outside their authoritative reach.

It will be argued that achieving a more resource efficient society and economy would be one way to deal with this problem. Drawing on an analysis of the main obstacles on the way towards higher resource efficiency, and using the example of ICT-products, the paper offers concrete policy proposals. In order to gain better knowledge about global material flows and the material input (incl. 'ecological rucksacks') per product, the implementation of information obligations following the 'No Data, No Market' principle could be a promising approach. On this information basis, dynamic standards and green public procurement could foster the production and consumption of resource efficient ICT-products. This policy mix of both supply- and demand-side instruments would have the potential to minimize translocated environmental burdens.

Lecture Room A

**B1: Legal Dimension of Environmental Policies**

*Time:* Friday, 08/10/2010: 4:30pm - 6:00pm

*Chair:* N.N.

**Can Right Based Approaches contribute to the integration of social and environmental concerns in the Millennium Development Goals?**

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The Millennium Development Goals (MDGs) is a normative framework for development policies with 2015 as its target year to which 189 countries agreed. Apart from social and economic objectives, the MDGs also aim to integrate environmental concerns. This is necessary because development and environment are intrinsically linked. However, one of the main criticisms to the MDG-agenda is that it restricts this link to a minimum. While taking a different starting then the conference theme, this paper addresses a basically similar question: how to effectively integrate environmental and social governance for sustainable poverty reduction in the context of the MDG-agenda?

We explore how a rights-based approach (RBA) can contribute to the achievement of the MDGs, including both social and environmental dimensions, as this is called for in the emerging academic and political debate about the post-2015 MDG agenda. The core idea of a RBA for development is to support individuals or groups whose rights have been violated, neglected or ignored, and who has a responsibility to act. However, a distinction needs to be made between human rights and environmental rights. While the former have already found its way into hard law allowing individuals and groups to claim their rights, the latter is (still) perceived as a bundle of complex rights whereby its definitions remain unarticulated and vague (soft law). Practice reveals that the operationalization of human rights in combination with environmental rights continues to be a struggle in the development world.

This paper will first discuss the link between these rights. Next it will evaluate the MDG-agenda from a right based perspective. Lastly, it will explore possible ways of how the MDG agenda and the RBA can be brought together with a view of effectively integrating social and environmental governance.
Change and Legal Cultures. Implementing the European Union's Emission Trading System

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This proposal aims at analyzing the evolution of the European Union's Emission Trading System (EU-ETS) from the perspective of different regulative cultures in the EU Member States having an impact on the effective implementation of European regulation. In this regard, the proposal departs from the assumption that more awareness on the European institutional level of different regulative cultures and of varied social ecological behaviours in the Member States induces stronger political commitments to climate change mitigation policy with measurable outcomes. Even if the European institutional setting itself reflects the socio-cultural diversity with regard to effective legal transition – the importance of considering different regulative cultures, ecological regulations and climate change specificities has been widely neglected so far by European and socio-legal scholarship. Therefore, and in the way I will analyse its influence on the effective regulation of climate change mitigation instruments, the notion of legal culture refers to diverging domestic perspectives on legal systematics and environmental governance approaches, as well as on the different use of concepts such as soft or hard law, public or private, top-down or bottom-up regulation. Furthermore, by defining regulative culture in the field of environmental protection, one has also to take into account the extent to which emerging policy fields are regulated or deregulated on the domestic level, incentives are implemented or judicial review is engaged in different historical settings. In order to improve my theoretical assumptions, I will present the results of three empirical case studies of policy implementation – namely United Kingdom, Poland and Spain – emphasising the
impact of varied domestic legal cultures and ecological orientations on the implementation of the EU-ETS during its first two decentralized phases (2005-2007 / 2008-2012).

**Sense of community, change evaluation and support for conservation regulations – Psychosocial processes in receiving legal innovation for sustainability**

*Carla Mouro, Paula Castro*
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Worldwide treaties and their transformation into national legislations and policies is one of the most evident features of global environmental governance. The generalisation of sustainability norms is nowadays a priority, and individuals and communities are called regularly to change their everyday practices towards pro-ecological goals.

One example of this is how policies and regulations for promoting biodiversity conservation at the European level have been strongly proposing new forms of relationship between rural communities and landscape. Rural areas are now valued for their environmental quality and several agricultural and hunting practices have been suppressed or supported depending on their capacity to maintain these levels of quality.

The present study was developed to examine the positions of rural communities towards the Natura 2000 sites were they live and to understand how contextual and community factors shape the acceptance or refusal of biodiversity conservation laws.

A survey to 229 residents in counties included in Natura 2000 network measured sense of community, support to conservation practices and intention to protest against the protected area. As local involvement as been related to both high and low levels of place- relation variables, in this study the moderating role of two relevant contextual variables was addressed: evaluation of future
changes and vested interest in natural resources management. Results show that both the evaluated dimensions of sense of community independently predict support to conservation practices and protest intention. The proposed moderators qualify these results.

Discussion will be centred on the contribution of this line of research for the comprehension of processes of appropriation and opposition to social change through legal innovation by local communities. The premise that understanding the heterogeneity of relations and expectations occurring in the communities will increase our capacity to identifying contextual predictors of resistance and involvement in the generalisation of pro-ecological change will be debated.

Lecture Room B

**B2: Stakeholder Legitimacy**

*Time*: Friday, 08/10/2010: 4:30pm - 6:00pm  
*Chair*: Sunayana Ganguly, Germen Development Institute (DIE)

**Deconstructing the stakeholder concept and its implications**

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Many regions in the world are becoming predominantly vulnerable to the impacts of a changing climate and may need from adaptation strategies to deal with it. In our sense, when dealing with adaptation strategies special attention needs to be drawn towards processes through which the capacity of authorities, experts, interest groups and the general public to manage uncertainty effectively and its reactions towards adversity are
increased (Webler et al., 1995). Such processes occur not only within the “well-defined” stakeholder groups but more within behavioural systems. Dealing with uncertainty to climate change, then, is a change of belief that influences behaviour at a systemic level. In this approach we consider decision making as a process embedded in a social environment, shaped by particular cultural perceptions and shared beliefs about the cause and nature of resource management and planning decisions. Socially constructed context for actions to react to climate change are given by behavioural system acting under a collective scheme. Thus, collective schemes outline the accepted definitions of what is usual or unusual, i.e. what is out of place or congruent. So far, collective schemes are outputs and inputs to the socially embedded knowledge that succeed upon group practices and can be the same across different stakeholder groups. Thus, the transitions and the acceptance of new policies are determined rather by behavioural systems than by the so-called stakeholder groups. Under this paradigm, behavioural systems and its processes become an inseparable part of planning uncertainty under climate change and developing adaptation policies for e.g. maritime urban regions. In this paper we present the concept of behavioural system as an indispensable milestone in the process of developing adaptation policies to deal with the uncertainties attached to climate change.

Rethinking Institutions and Sustainability: A Case Study of the BRT Wildlife Sanctuary, India

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This paper argues that empowering people by transforming institutions to make them more accountable, responsive and inclusive could help respond to the social challenges of environmental change. In particular the paper will explore the
sustainability of an institutional architecture that is undergirded on the principle of viewing people not as subjects or beneficiaries but as citizens with rights and responsibilities. Using the conceptual-analytical framework of Judith Tendler’s and Peter Evans’ State-Society Synergy approach and Francis Fukuyama’s State building model, I show that knotting the two in the form of the Strong State Society Synergy model at the local level could provide a very fascinating dimension to understanding governance.

I examine the vulnerability of the indigenous people – the Soliga tribes in the BRT Wildlife Sanctuary in Karnataka, India whose heavy dependence on the forest ecosystem as a source of livelihood tends to be disproportionately affected by climate change. Besides, they have been involuntarily displaced from their natural habitat as a consequence of new forest laws that changed the status of the natural evergreen forests, original habitat of this tribe, to ‘reserved forest area.’ As such the Soligas were forcibly displaced and denied their traditional rights to forest produce, thereby eroding the age-old concept of sustainability which was integral to their worldview.

Adopting a bottom-up approach, the purpose of this paper, then, is to examine how governance intervention in the form of synergistic tiespredicated on norms of trust and networks of civic engagement between the forest department and the Soligas has helped salvage the situation. What began as a health service delivery programme extended, on the one hand, to participation of the Soligas in mapping forest resource uses and habitats considered critical for environmental sustainability. On the other, an Organic village simulated on community living style of the Soligas was established.
Local networks in natural resource management: does integration foster policy acceptance?

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In today’s natural resource management, governance approaches try to better include a broader range of state and non-state actors representing different societal sectors into policymaking and policy implementation. This inclusive strategy is chosen to address the often proclaimed lack between the design of political institutions and the scales of environmental problems. This paper explores to what extent horizontal and vertical actor integration improves the political acceptance of new local policies as an important precondition for an effective implementation. Our paper applies a formal social network analysis to investigate the structural aspects of local governance and actors’ integration. Empirically, we compare selected resource management projects in Swiss mountain regions. These projects are all characterized by a participatory principle introduced at higher authority levels with the objective to adapt regional systems better to new challenges such as environmental degradation, climate change and loss of biodiversity. We will investigate if the more integrated projects have actually resulted in improved cooperation between the relevant state and non-state actors and, as a consequence, in a higher acceptance of the respective policy projects. Our preliminary results indicate that the better-integrated actors tend to be more cooperative but do not necessarily show a higher acceptance of the policy project as theoretical assumptions would suggest.
Ethnicity in environmental planning

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In most of the European countries immigration is occurring since decades, which leads to an increasing intercultural mixture of the national population. In Germany the scientific and public discourse on sustainable development has hardly noticed possible effects of “ethnicity”. Research on the actual situation of intercultural participation in environmental planning is missing as well as on the needed preconditions for an appropriate “intercultural empowerment” of public engagement. Up to now the percentage of immigrants engaged in organisations of the ecological movement or institutions dealing with environmental or sustainability affairs is very low (Katz/ Kontzi 2009). There is a lack of profound knowledge about the attitudes or everyday acting of (im-)migrants towards nature and its management, about their interests in environmental protection, about risk awareness and demands regarding environmental and sustainability issues. But, ethnicity is nothing fixed which can be easily analysed or “allocated” to people or a societal group. It is a construction which evolves if certain similarities are supposed. The contribution is stressing this point: According to the approach of critical whiteness the exclusion and the construction of “the other”, of “being involved” in procedures of “doing nature relations” is scrutinized. Qualitative Data of an explorative study on environmental organisations in Germany and their efforts in “acting intercultural” are introduced. The existing mental images and ideas about migrants’ interests and public engagement in nature and sustainability issues by environmental actors are presented and reflected.
From Vulnerability to Resilience: Helping People and Communities Cope with Crises in the Social-Ecological Systems of the Mesoamerican Reef.

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The Mesoamerican Reef (MARS), the longest reef system in the Western Hemisphere, stretches more than 1,000 km from the tip of the Yucatan Peninsula, Mexico to the North Coast of Honduras. It comprises a Mesoamerican “hotspot” of biological diversity and was declared a UNESCO World Heritage Site in 1996. Tourism is the dominant economic sector in the region and the diverse peoples of the MARS are critically dependent on tourism for their national, community, and household economies. In turn, the tourism sector is critically dependent on the health of the reef and coastal ecosystems. However, the people and the ecosystems of the MARS currently are facing multiple crises and are at risk from a number of interacting, short term surprises (e.g., the 2007-08 world food price crisis and H1N1) and long-term forces (e.g., unsustainable fisheries and coastal development). Current exogenous and endogenous threats include the recent global economic crisis, the associated downturn in international tourism, the accelerating impacts of climate change, and significant economic inequality. There are several indications that the current tourism development model is unsustainable, is a threat to the long-term health of the biophysical
environment, and has reduced the resilience of the human and natural systems of the MARS. This paper summarizes the major findings of a three year (2007-2010) project funded by the U.S. National Oceanic and Atmospheric Administration (NOAA) Climate Program. Aimed at reducing existing vulnerabilities and enhancing social and ecological resilience in the MARS, the goals of our project included: 1. Conceptualizing and modeling the MARS as a dynamic social-ecological system; 2. Developing a theoretical framework and methodological approach that integrated resilience theory and political ecology to understand the dynamics of the system; and 3. Developing possible future scenarios that strengthen or adopt more comprehensive, participatory, and resilient approaches to development, management, and governance.

**Conceptualizing Community Resilience to Global Environmental Change in the Context of Food Insecure Drylands**

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While increased emphasis is placed on interactions between natural and human systems, understanding of social components of global environmental change (GEC) remains weak. How processes of GEC affect development potential is not well understood. Concepts of resilience, vulnerability and adaptive capacity become important in addressing these dimensions and need to be integrated to enhance our knowledge of causes, consequences and responses to GEC in the context of development. Approaches to GEC often focused on managing vulnerability. Poor people were categorized as victims of
environmental variability, economic exploitation and political marginalization. But people have capabilities to deal with change and look for risk reduction strategies. A vulnerability focus distracts from resilience and adaptive capacity. This paper aims to broaden this view to highlight resilience, recognizing people as active agents.

Resilience is at the heart of development debates and is a crucial element of how societies adapt to change. Theoretical frameworks are applied in various contexts, although different definitions are in use. This paper aims to provide an overview of intellectual foundations of resilience and of development; to contextualize resilience as a societal response option to GEC within development; and, focusing on drylands, to discuss its usefulness, considering controversies over its definition, strengths and weaknesses.

The discussion shows that resilience in development remains a largely elusive concept with weak practical application. There is a need to better integrate resilience within a multidimensional paradigm that addresses local needs. This is important in drylands, where the role of risk needs to be better understood to realize potential for development, while relying on human capacity for adaptation. A resilience approach to development is suggested to better appreciate the interactions of societal responses to GEC within the context of development. It offers an adaptive and interdisciplinary view, while strengthening community participation and empowerment towards sustainable pathways out of poverty.

**Role of institutions in shaping climate risks adaptation processes and practices among semi arid rural households of Mwingi region, Kenya.**

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Low, erratic, unreliable rainfall and frequent droughts are not new to the predominantly subsistence farming households of Mwingi
region of Kenya. But the recent increase in drought episodes and unpredictability of onset of rains is perceived as new to this region. Consequently, livelihoods are being lost through crop failures, inaccessibility of water and death of livestock due to lack of pasture. A rainbow of institutions, governmental, non-governmental and private, are, using different strategies, making effort to build capacity of these rural households to live with these climatic risks and their predicted continued increase in future. These strategies include relief food, grants, loans, training on production and value addition, market networking among others, with key delivery mode being through community self-help groups. Based on the results of an on-going Phd research on climate risks adaptation processes and practices at local level, this paper will explore the extent to which these strategies embrace concepts of good governance in the process of interaction between local households and institutions. The target-user evaluation of the strategies and their mode of delivery will also be discussed. Critical to the debate will be the extent to which these strategies address short- and long-term livelihood needs as well as their feasibility as pathways for sustainable adaptation. In conclusion, the paper will explore amicable strategies and processes for delivering adaptation options.

STUDIES ON THE IMPACTS OF NATURAL HAZARD DrIVEN ENVIRONMENTAL CHANGES ON THE SELECTED COASTAL COMMUNITIES OF ORISSA, INDIA

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Natural hazards are becoming one of the major environmental change drivers around the globe. There is a close correlation between the trends of increased demographic pressure especially in developing countries that escalates environmental degradation,
increases human vulnerability and intensification of the impacts of disasters.

Major objectives of the study is to document the coastline changes along the villages and identify the major drivers for such changes; to analyze the consequence of the environmental change on the community, livelihood, lifestyles and mobility and to suggest sustainable management plans for more disaster resilient communities.

The study was conducted in the coastal communities of Satabhaya gram Panchayat in the state of Orissa, on the East coast of India. The communities were selected based on the immediate threat to the communities from flood; cyclone and saline surges.

The research paper is based on the field work conducted in the communities in 3 successive stages between December 2007 and June, 2009. The data was collected by participatory rural appraisal, focus group discussions and semi structured questionnaires, using random sampling. Remote sensing and GIS tools were used to detect the coastline changes.

The observed coastline changes were higher along all the villages than the global average. The natural disasters in the past natural disasters along with development policy of the government were found to be the major drivers. Adaptation by the community included both technical and non-technical strategies. This study will help assess the vulnerability of the community as well as help policy makers develop a disaster risk reduction strategy with sustainable development goals. Adaptive, sustainable and integrated pro-poor management of natural resources like reforestation schemes, proper land use and good management of rivers and coastal areas will enhance the resilience of the communities to disasters by reversing current trends of environmental degradation/socio economic problems.
Eco-Innovation and Corporate Performance: The African Experience

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Addressing a paucity of research about industrial adoption of environmentally benign technologies in Africa and, more generally, in tropical developing countries, we examined the Nigerian pulp and paper industry as a case study. Qualitative interviews with twenty upper echelon executives representing five Nigerian firms challenge conventional expectations that energy intensive industries in developing markets operate amid highly pollution-intensive conditions, within weak or non-existent formal environmental regulatory frameworks, and with limited institutional capacity. Our findings suggest a strong positive relationship between cleaner technology use and corporate financial performance of African industrial firms. Our study also suggests the adoption of classical ‘win-win’ integrated preventive environmental strategy, eco-efficiency and green productivity which improves industrial efficiency and profitability. Nigerian pulp and paper firms are shown to have moved beyond end-of-pipe technologies and cleaner technologies and adopted industrial ecology and “zero emission” principles with appropriate reuse of the remaining waste streams turning the production system into a sustainable industrial ecosystem.
Corporate Responsibility for Global Environmental Change? The discursive shaping of sustainable development

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Recently, business representatives have begun to create networks that contribute to shaping the sustainable development agenda by influencing the establishment of new norms, novel institutions and discourses. At the same time political science has for a long time tended to neglect the role of transnationally organized actors as well as transnational processes of legitimisation. In the past few years, new theoretical frames on the power of private actors have been developed which identify different dimensions of business power in global governance. These authors adopt diverse theoretical perspectives but they commonly observe the growing importance of the discursive power of business and the lack of theoretically based empirical studies in this field. Moreover, there is an apparent need to analyse and assess the discursive use of development concepts by businesses, as both the definitions and the operationalisations of these concepts have important implications for the identification of policy needs and outcomes and are of crucial importance in terms of global and national problem solving, connected as well with highly political implications.

The article aims to show how and why business representatives influence the discourse on sustainable development in order to better understand the way discursive power of business is being exercised. On this note, it is argued that the specific social constructions of the concept of ‘sustainable development’ are a result of discourse-inherent rules and ambivalences that the corporations have to deal with. The discourses of pan-sectoral organised business actors within the business network econsense
provide evidence and examples for studying how and why private actors exert influence within the system of global governance. This study introduces an alternative theoretical and methodological approach which draws on constructivist ideas and implements the qualitative content analysis and a discourse analytical approach.

Climate Policy and Business Climate Strategies: Explaining Reasons for Sluggishness

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Business and government are generally known to enjoy a special relationship but how this close rapport specifically feeds into and reflects on policy development as well as on business strategy is not well analyzed. This paper draws on series of in-depth interviews with managers in some of the most carbon-intensive UK-listed industries and officials from key government departments to provide an analysis of the links between corporate and government climate strategies. The paper explores the effects of the current set of UK climate policies on business strategy as well as the impact of business on policy development. It also highlights key success factors and barriers against progress and considers the implications of these on the development of an effective, efficient and equitable post-2012 climate regime. We argue that the relationship between the UK government and industry is characterised by consultative governance based on negotiation and partisan mutual adjustment. But whilst this governance model promotes interaction and congenial relationship between powerful actors, it tends to hinder the sort of visionary and bold political leadership needed to induce radical climate action.
Why are Utilities Reluctant to Adapt to Climate Change? - A Survey in the German Energy and Transportation Sectors

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Although the infrastructure in the transport and energy sector is highly relevant for society and economy, and although top-down estimates show very high costs for adapting to climate change, the question of how utilities should adapt to climate change has not been deeply investigated so far. Adapting energy and transport related infrastructure definitely requires anticipatory action, as large parts of infrastructure are designed for comparatively long periods. To understand how utilities can act, it is necessary to know what is already done in this respect, and if not, whether there are good or problematic reasons to do so.

The study presents the results of a survey of utilities in the German transport and energy sectors complemented by a series of stakeholder workshops. For the purpose of theory development, a qualitative-explorative approach is chosen and combined with quantitative analysis. The first objective is to identify how far utilities already start to realize the need to adapt. Comparing the results of the survey with existing vulnerability analyses enables to better understand barriers that may explain missing action or stakeholder frames for adaptation. The second objective is to understand the organizational, decisional and regulatory structures that shape corporate divisions on adaptation.

We come to the conclusion that there is a basic awareness on adaptation rising in the investigated utilities, that nevertheless seems to fall short in light of the current requirements for action. The results indicate some explanations for this: (i) the cross section
nature of adaptation measures resulting in high transaction costs, (ii) missing incentives from regulation, owing to the problem that infrastructure often has the character of a public good and (iii) the physical properties of climate impacts. Getting an insight into the catalysts and barriers of adapting utilities to climate change will help to transfer the result to other sectors.

Food Security under Climate Change: Comparing Food Retailers' Adaptation Strategies in Brazil and South Africa

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Over the past decade, the number of undernourished people has increased worldwide and projections show that global environmental change (GEC) and in particular climate change, will exacerbate the stresses experienced by an already fragile global food system. Governance of this food system has therefore become a key topic of discussion especially in light of the 2007-08 food price crisis that sent shockwaves through the world. Of special import has been the dominant shift in food system governance from the public to the private sector, bringing with it questions of the role that non-state actors are likely to play in achieving food security goals (like the first Millennium Development Goal) under GEC.

In this paper, we compare private sector food system governance trends in two emerging economies, Brazil and South Africa, giving more attention to practices around adaptation as this area has largely been neglected in the climate change discussion and yet is a critical factor in coping with the societal consequences of GEC. The study focuses on the retail sector of the food system, as this is
where major governance shifts around climate change and food security have been identified in various studies. Through an analysis of company reports, websites, news articles and academic papers as well as in-depth key informant interviews, we document these trends for two major retailers in each country and then classify them according to the decision analysis frameworks for adaptation proposed by the IPCC in their Third Assessment Report. By comparing and contrasting our findings for Brazil and South Africa, we aim to identify trends in food security governance for emerging economies.

**B5: Multi-level Governance: Local responses (I)**

*Time:* Friday, 08/10/2010: 4:30pm - 6:00pm
*Chair:* N.N.

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**Climate Change Adaptation and the LDC. Global Climate Policies, Local Institutions and Food Security in Ethiopia**

_Eero Palmujoki¹, Pekka Virtanen², Dereje Terefe Gemechu²_

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This paper explores how global climate policies are articulated within national policy priorities in least developed countries (LDCs). It is broadly recognised that climate change undermines human security by reducing access to and the quality of natural resources necessary for livelihood. Recent research shows, however, that in most cases of livelihood failure, climate is an exogenous trigger, while the deeper causes lie in social problems. For LDCs, the question of adaptation is subordinate to poverty alleviation. Studies have suggested that most effective ways of
adapting to changing climate conditions in a poor country is to rely on local institutions that have established and sustainable mechanisms to deal with extreme climate conditions. In order to allocate assistance at the local level to local institutions, the traditional donor – recipient government model seems to be inappropriate. Therefore, the donor community is suggesting a stakeholder model based on broad participation, instead of the traditional donor-recipient based shareholder model for governance in the assistance of climate change adaptation. This paper analyses how donors, the Ethiopian government and non-state actors have prepared to carry out climate adaptation activities. This calls for an understanding of the viewpoints of the local stakeholders. The study therefore includes field research to study how local institutions are used to strengthen the resilience of communities to adapt changing climate conditions. The field study was carried out in the Borana Zone and in the lowland areas of the Guji Zone in the Oromia Regional State. The study is based on semi-structured interviews with key stakeholders and secondary material, consisting of policy, project documents, and research literature. More than 60 representatives of the government of Ethiopia at the federal, regional and local levels, as well as representatives of both national and international NGOs, bilateral and multilateral donors and local project beneficiaries were interviewed.

The cultural acceptance of ecological policies and consciousness of environmental change in Asian developing countries: the case of Nepal

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The contemporary global ecological crisis has led developed and developing countries to put emphasis upon the need for relevant policies, for ecological purposes, at the national and international
levels. However, little attention has been payed to the local acceptance, in the cultural and social frameworks of developing countries in particular, to the worldwide spread of these new ideological and political standards. Neither to the role of traditional lifestyles in preventing or increasing the climate changes. The issue of governance and especially the chance for new social attitudes towards nature and climate can be reframed by taking into account the tension between social structures and local cultures, on the one side, international economic and ecological issues, on the other side. The case of Nepal highlights the ways collective consciousness about climate change and the corresponding “sustainable” programs are depending upon the social and cultural acceptance, especially in poor Asian countries, of these worldwide exported standards.

Based upon the study of national policies in the broader context of internationalization of ecological ideas and practices, this research explores a collection of ethnographic case studies, in remote villages of Nepal – and in Asia. The methodology aims at comparing the international macroscopic level, where ecological consciousness and policies are framed and diffused, and the local microscopic level, where they are subjected to cultural absorption and social / economic adaption.

Nepal, an Asian “underdeveloped” country, has adopted and attempted to apply several international standards, National planning for development and ecological issues is failing to be fully and efficiently adopted, The structure and dynamics of national administrations are the first cause for this failure, but the perception of the effects of climate change are depending also upon cultural conceptions of nature and climate, These local conditions can both facilitate or hinder the acceptance of international ecological standards
Resilience and Risk in the Informal Economy: A study in the regulation of risk

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Environmental hazards (and change) pose a challenge to development - particularly for the world’s poor. A key issue shaping development within poor communities is the ability of entrepreneurs in these communities to effectively manage risks as they provide a significant number of the goods in poor communities to sustain themselves and provide work for others (Meagher 2006,2005; Devenish and Skinner 2004). Climate change and variability are key environmental hazards threatening the economies of the poor. In response to risk, the poor have developed innovative and sophisticated coping strategies. Examples of these include savings, burial and building societies. Often these strategies are unnoticed, uncoordinated, and unaided by national governments, development agencies, or international agencies. (Christoplos et al. 2009).

This paper explores one particular area of community resilience; the ability of entrepreneurs in poor communities to anticipate and manage environmental hazards. Although international climate change negotiations, multilateral and bilateral agencies, donors, and international governance and financial institutions such as the World Bank are paying increasing attention to risk management mechanisms (mitigation and adaptation) most research has focused on national planning and top-down approaches (Mukheibir 2008). However, remarkably little attention has been paid to the ways in which poor communities cope with environmental hazards, such as climate variability and extremes (Reid et al. 2009: 13) and how they govern themselves for improved resilience. Furthermore, the governance and risk management literatures have largely focused on individual actions to cope with environmental hazards. This paper looks at the role of the
collective action and cohesive governance in poor communities for managing environmental hazards. The paper draws on the social capital literature to explore the ways in which poor people help one another in the event of a hazard and sees these relationships as a form of ‘informal insurance’.

The case study method is used to explore these issues in the Langa township, Cape Town (South Africa) where significant climatic and socio-economic changes that have recently occurred and continue to happen, including growing in-migration, increasing service delivery protest and land use contestation. The city of Cape Town is also seen as being very progressive in its climate change adaptation and mitigation policies (Holgate 2007). However, little investigation has gone into understanding the effectiveness and use of such policies at the community scale. Whether the city’s climate change policies can either support or hamper community level responses to change is therefore of great interest for this analysis. To understand this, the paper will outline the ways in which entrepreneurs in the research sites perceive risks to their business and respond both within and outside the frameworks of the municipal and city government laws and regulations.

The relational factors of adaptive capacity – Understanding the role of actor relations in responding to change in socio-ecological

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The growing awareness that under conditions of uncertainty and complexity socio-ecological systems (SESs) cannot be governed in a sustainable manner through hierarchical, top-down approaches and technological solutions but must be managed in a flexible and collective manner has led to the promotion of new forms of environmental governance (based on decentralization and participatory decision making). Informal social networks, which
comprise a wide range of actors, have been identified as crucial elements within those new modes of governance. However, most studies concerned with environmental governance have treated social networks as being either present or absent without explicitly analyzing or measuring their structural characteristics. As a consequence, many studies are unable to explain why some networks facilitate learning and collaboration and therefore contribute to the transition toward more adaptive and collaborative forms of governance, whereas other networks reinforce existing power structures.

Taking a more critical view on the potential of networks for strengthening adaptive capacity in SESs, this paper, which is based on ongoing research, uses a case study approach through which modes of governance at the catchment level are investigated. In particular, the structural characteristics of a social network composed of a heterogeneous set of actors that has emerged in response to water quality issues in the Berg River catchment is analyzed. Using social network analysis (SNA) methods, evidence is provided of the patterns of interactions within the network that relate to responses to degrading water quality and on the network's ability to facilitate or impede changes in the catchment area. At the same time, revealing the network structure through SNA, insight is generated into how the network is connected to the larger water governance system of the catchment and how this relationship may impact the network’s ability for facilitating resilient development in the SES.

South African coastal cities’ response to climate change adaptation: moving from projects to process

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Rising rates of urbanization accompanied by increasing consumption puts the spotlight on how cities can mitigate and
adapt to climate change (Wilbank et al. 2007; Sattherthwaite et al. 2007). Globally, cities are starting to develop policies and plans to adapt to the impacts of climate change (Birkmann et al. 2010; Corburn, 2009; Horton et al. 2010). This is in part driven by the international scientific community that is encouraging adaptation as an important and urgent way to complement on-going mitigation efforts, that have formerly tended to dominate policies and finance (Romero-Lankao 2008). However, in some cases these emerging responses reflect a bottom-up awareness of the need to better plan for climate variability in order to increase the resilience of cities and protect its inhabitants.

Many cities in the global South have been slower to develop adaptation responses than some cities in the global North. However, two cities in South Africa, eThekwini and the City of Cape Town, have been leaders in establishing adaptation policies and plans (Roberts 2008, Cartwright et al. 2008, Sattherthwaite 2007, Mukheibir and Ziervogel 2007). Exploring how these have been successful and what the challenges have been is important in developing lessons for other global South cities, where there are large numbers of people exposed to climate hazards. Because climate impacts are one of numerous other challenges, it is necessary to carefully position adaptation within a complex political and institutional landscape.

This paper focuses on the five major coastal cities in South Africa, namely the City of Cape Town, Nelson Mandela Bay, Buffalo City, eThekwini and Richards Bay. The analysis is based on interviews in each of these metros undertaken in early 2010 with 17 government actors all involved in adaptation in their different capacities.
Climate Change, Economic Growth, and Conflict

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The relationship between climate change and armed civil conflict (war) has been a prominent subject in policy debates as well as recent research. Yet, academic research has thus far not been able to identify a robust, systematic, causal relationship between climate change and armed conflict. This may reflect the absence of such a relationship in the real world. Alternatively, it may be the consequence of theoretical and methodological limitations of existing research. We contribute to this literature in two ways.

First, we specify the mechanism through which climate change may affect the incidence of conflict. In particular, while we focus on the causal chain linking climatic conditions, economic welfare, and conflict, we also emphasize how both parts of this causal chain depend critically on institutional features of the political system. Second, at the methodological level, we use climate change indicators (precipitation and temperature) that are exogenous to both economic conditions and conflict, and we use a two stage instrumental variables approach. With this approach we avoid the simultaneity problem that has plagued the literature so far. We test our theoretical argument with data for all countries of the world for the period 1950-2005. Preliminary results show that climate change has a significant effect on economic growth, but
does not increase the probability of armed civil conflict.

The Human Dimensions of Environmental Insecurity: Perspectives from South Asia

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Environmental change presents significant security challenges for South Asia. Although the effects of environmental change on social and environmental systems are likely to be highly uneven, impoverished regions and populations may bear the brunt of these changes. This paper explores environment and security links in the context of South Asia. It especially focuses on what the South Asian experience can contribute to the larger literature on environment and security and, more particularly, to the literature on human security and sustainable development. It argues that chronic and structural impoverishment—rather than resource scarcity alone—forges the connection between environmental degradation and conflict. It also suggests that poverty and weak institutions of governance are the more immediate triggers of environmental insecurity. As such, analyses of environment and security need to focus more at societal levels and on evidence of social disruption, even where that disruption might not entail violent conflict. Similarly, addressing climate change within the South Asian context will require new types of social institutions, cooperative responses and new forms of governance.

How to Reconcile between Competing Securities: the Case of Solar Power Plant in Israel

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The end of the Cold War has given rise to the broadening of the national security concept. Security, that once defined as a set of external military threats is now understood also as securing the environmental protection and the provision of environmental resources and services – such as energy, biodiversity and climate change. However, the broadening of the concept of security has allowed many sectors to attribute a security-related aspect to their resources and related needs in order to get on the agenda and radar of decision makers. This seeming overuse of security jargon may cause competition between various sectors, each seeking to protect its resources.

Against this backdrop, this study comes to: 1) predict the resources and conditions in which securitization will be asserted; 2) the potential benefits and risks of this process; 3) identify ways to reconcile between so-called competing security uses.

This research relies on the case study of the 'Committee for identifying Alternatives Location for Solar-Energy Power-Plant', which was established in 2002 and searched an area in the Negev desert, Israel. Most of the Negev desert's area is occupied by the Israeli army and/or nature reserves, and the rest primarily used for agriculture and urban purposes. The search for a solar power-plant site to secure clean energy may be in conflict with other securities concerns, food and biodiversity securities as well as army zones that are perceived as a prerequisite for national and military security.

The results of this study are presented graphically based on coding the numerous protocols of the Parliamentary and planning committees that deal with the conflict between these competing securities. These results are an initial attempt to identify strategies to mediate between the need for clean energy, often by thermo-solar energy, and other traditional national needs, all using a securitized discourse.
Transforming environmental conflict through discourse, illustrated by the Israeli-Palestinian water conflict.

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In Israel and Palestine, a natural water scarcity is exacerbated by the overall political conflict. On the one hand, the regional climate is arid to semi-arid, resulting in frequent droughts. Inefficient water utilisation, growing population numbers as well as continuing economic development and urbanisation further increase water needs and amplify existing scarcity. On the other hand, two of the river Jordan’s headwaters, Banias and Hasbani, rise outside of Israel’s internationally recognised borders. The Palestinians have no access whatsoever to the river Jordan, limited access to the ground water resources and are widely dependent on Israeli allocations. Since 1967, the bulk of the natural water resources are under Israeli control.

As a result of these specific conditions, water scarcity is perceived as a cause for (violent) conflict in both the Israeli and the Palestinian society. This manifests in conflictive discourse structures, like the discursive securitization of water scarcity for varying referential objects. Water is perceived and categorized differently by the two conflicting parties: While Palestinians regard the natural water resources as sufficient in principle and the existing scarcity as entirely politically induced, the Israelis perceive the natural water resources as absolutely scarce while receiving major desecuritization impulses from the possibility of desalination. On both sides, the dominant discourse structures underscore the conflictive issues regarding the distribution of water between Israelis and Palestinians, thus making communication, let alone negotiation, downright impossible. It is exclusively in the respective (minor) counter discourses that
possible starting points for dialogue and conflict resolution are visible. With communication – verbal and non-verbal, direct and indirect – at the bottom of every conflict, the reality of Israeli-Palestinian water discourse needs to be taken into account with regard to conflict resolution approaches in the region. This has not, however, been taken into account by conflict resolution practitioners as yet.

OUR ‘EARTH’ BLEEDS: OIL EXPLOITATION, DEPRIVATION AND ENVIRONMENTAL JUSTICE IN NIGERIA

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The phenomenon of oil exploitation and the pervasive deprivation in the Nigeria Niger Delta are eloquent demonstrations of the link between environmental problems and social injustices. Conflicts have erupted in a bid to protest the observed level of deprivation and poverty. This paper examines the relationship between oil exploitation in the Niger-Delta vis-à-vis the deprivation and poverty suffered by its people. The paper is structured to examine the political economy of resource exploitation and utilization in an oil rich country like Nigeria. It posits that more than anything else, the causes of conflicts and strifes in Nigeria revolve around what the land contains. The structure of the paper includes an introduction and the background of Nigeria as containing groups of autonomous people brought together during colonialism through a geographical marriage of inconvenience. The section also examines the rich ecological resources of the country. The second section is an overview of environmental resource exploitation and distribution as well as the principles underlying these. In the third section, the paper examines the phenomena of poverty and deprivation in the country particularly in the oil bearing Niger Delta. Using a welfarist perspective, the paper reveals a lopsided resource distribution that
suggests an inversion of benefits, the higher the level of environmental resource available to a region thus establishing the inevitability of conflict and violence among the deprived communities. As a way forward, the paper canvasses for a shift in the paradigm of resource distribution for the adoption of social and environmental justice. The benefits of this paradigm are overwhelming but the challenge for the country is the taming of the burgeoning capitalism and its class structure. To achieve justice-social and environmental- orientation of leaders and followers must change. This shift is urgently required as a reconciliatory paradigm in Nigeria.

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**B7: Capacities for Adaptation**

*Time:* Friday, 08/10/2010: 4:30pm - 6:00pm  
*Chair:* Marianne Beisheim, Stiftung Wissenschaft und Politik

**Climate change adaptation: transformation of governance structures? Assessing the adaptive capacity of spatial planning in Alpine countries**

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Whereas climate mitigation has to be conducted and coordinated on a global level, climate adaptation can primarily be dealt with on the regional and local level. Natural conditions as well as societal and economic vulnerabilities can be very different between regions. Moreover, the capacity of cities, municipalities, regions and countries to adapt to climate change depends on multiple factors (e.g. institutional, societal, economic, and cultural) (cf. Füssel 2007, Lebel et al. 2006). In this context local and regional
policy making has to transform governance practices in order to enhance adaptation options and to improve the adaptive governance of cities and regions. Adaptive governance refers to the coordination and interplay of administrative units in a multilevel governance environment involving different scales of action as well as state and non-state actors.

Presenting first results of a research project, the paper addresses two questions: first, how climate adaptation is governed in multi-level spatial planning systems and second, if and how governance patterns and mechanisms in spatial planning are currently being transformed in order to adapt to climate change impacts. The paper focuses on the transnational analysis and evaluation of the adaptive capacities of relevant spatial planning systems in Alpine Countries. Besides spatial planning policies on different administrative levels and spatial planning instruments for climate adaptation the analysis focuses on the national and regional political framework, on cooperation and participation activities, on knowledge requirements and institutional barriers within the Alpine countries. The results of this systematic transnational analysis of multi-level governance in the field of spatial planning are subsequently discussed against the background of current concepts of adaptive governance in multi-level environments (cf. Brunner 2005, Folke 2006).

**Determinants of adaptive capacity of urban areas across governance levels: A model-centered meta-analysis**

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*Background:* Current literature about climate change adaptation provides a broad range of factors influencing the adaptive capacity. Furthermore, a frequent tenor is that “scale matters”. However,
the effects of institutional interplay across governance levels on adaptive capacity and the effects of the interaction of institutions with other variables such as technology and information remain largely subject of debate. Therefore synthesizing the diverse findings of empirical studies in a methodologically coherent and integrative manner may provide theoretical foundations for answers on how to organize enhanced adaptive capacity within and across governance levels.

Method:
1. Against this background we develop a comprehensive multi-tier framework of variables that systematically influence adaptive capacity. This is done by adopting the conceptual groundwork of the Institutional Analysis and Development framework (Ostrom 1990; Ostrom/Gardner/Walker 1994; Ostrom 2005) and with special focus on cross-level variable interactions.
2. We apply this framework of variables to the case of urban areas and conduct a model-centered meta-analysis of empirical studies in order to identify patterns in which urban adaptive capacity is determined by institutional interplay and variable interactions within and across governance levels.

Results:
The main results are:
1. The study provides a comprehensive and coherent multi-tier framework of variables determining adaptive capacity.
2. The analysis of urban adaptive capacity indicates that the level of urban adaptive capacity is attributable to the congruence of multiple variables.
3. Specific patterns of conjoint causation are identified for financial, informational, and institutional multi-level-interactions of determinants of urban adaptive capacity.

Conclusions:
This multi-tier framework seems to be very promising for a better understanding of adaptive capacity and thereby for influencing vulnerability to climate change. It provides a meaningful background for future studies and may foster cumulative research.
The effects of environmental change on international river basins are twofold: Firstly, environmental change has significant impacts on the ecosystems in river basins, ranging from increased salinity intrusion in delta areas due to rising sea levels to increasing flow variabilities caused by weather extremes such as drought and floods which again have an impact on the biophysical and biological structure of a river basin and its ecosystem. Environmental change also affects the livelihoods of riparian communities through the loss of arable land, the reduction of fish harvests, changes in the navigability of rivers and can thereby cause socioeconomic problems which can lead to collective action problems among different user groups. In addition, the transboundary character of many river basins is likely to intensify such problems. In order to address river-related collective action problems, states have established various institutional cooperation mechanisms such as River Basin Organizations (RBO). It is however not the mere existence of such RBO’s that defines whether conflicts can be avoided and economic and environmental gains attained, but the ability of such institutions to adapt to external changes in the river basin such as environmental change. The purpose of this paper is therefore to investigate the ability of RBO’s to respond to unexpected hydrological events by identifying institutional
mechanisms and management tools that are established in order to react to environmental changes. These mechanisms comprise a range of instruments such as treaty provisions, drought mitigation, escape clauses, early warning systems or dispute-settlement mechanisms. The paper will secondly explore the identified adaptation mechanisms in the regions of Southeast Asia and Southern Africa, highly affected by environmental change, and compare adaptation capacities of RBO’s in both regions.

**Institutional resilience in water governance reforms:**
The case of Uzbekistan

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Changes in the ecological system, such as climate change, and changes in the social system, such as political and economic transformation processes, put water governance regimes under pressure. These regimes must either have at their disposal the needed resilience to cope with these changes and adapt or face the need to transform into another regime configuration which is better suited to cope with these changes. These options entail different levels of institutional continuity and change. Three types of balances between institutional continuity and change in social-ecological systems are elaborated: resistance, adaptive change and transformative change. This paper addresses the challenge of water sector institutions to provide for continuity on the one hand while meeting the need to change and adapt to new circumstances (such as climate change or political and economic transformation) on the other hand. Uzbekistan, which has accumulated intense pressure for change both in the social and the ecological system, serves as a case study. Highly unsustainable use of water resources and cotton monoculture put high pressure on the ecological system. One of the consequences, the desiccation of the Aral Sea,
has major negative repercussions in the social system (increasing unemployment and decreasing health status of the population). Since the breakdown of the Soviet Union political and economic reforms have taken place rather reluctantly and have not triggered comprehensive changes in the water governance regime. Minor changes have been introduced at the local level, but the system has not yet departed from its unsustainable path of development. The paper concludes that the Uzbek water sector is rather resistant to change and comprises only a low level of institutional resilience. It further provides some propositions on the balance of institutional continuity and change and institutional resilience.

**Conference Room II**

**B8: Social Drivers of Change: Public Awareness**

*Time:* Friday, 08/10/2010: 4:30pm - 6:00pm

Chair: Bernd Sommer, Institute for the Advanced Studies of the Humanities (KWI)

**Extreme events and social transformation - catalysts or inhibitors?**

**Giovanni Bettini, Lennart Olsson, Henrik Thoren**

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Extreme events, such as droughts, floods and hurricanes, are in many ways detrimental to societies in terms of human suffering, infrastructural destruction and lost livelihoods. In a longer term perspective extreme events may be forceful triggers of social transformation in both positive and negative directions. Resilience theory is often invoked when studying the impacts of extreme events. But the problem with resilience theory in this context is that it focuses primarily on the effect of the external push of extreme events while underplaying the dynamism of
society. We argue that the impacts of extreme events depend on their interaction with ongoing social transformations, and may trigger or inhibit social change. Climate change may increase both the frequency and intensity of extreme events, and thus accelerate or constrain processes such as urbanization, migration and structural change of economy. Here we assume that societies are in processes of continuous transformations where extreme events may be used as important phenomena that can expose key features of the society under scrutiny.

In this paper we investigate to what extent and under what conditions extreme events can be used as a lens on social transformations. Proceeding from the concept of path dependence we explore how extreme events can be seen as contingent events, i.e. ‘an occurrence that was not expected to take place, given certain theoretical understandings of how causal processes work’ (Mahoney 2000). Contingent events can be seen as historical bifurcations in a development process characterized by strong path dependence.

We use a number of historical examples of extreme events to illustrate how they can be used to elucidate our approach. The examples are drawn from historical events as described in the literature as well as events from our own previous fieldwork.

**Punctuations and displacements in policy discourse: The climate change issue in Germany 2007-2010**

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This paper assesses the impact of large events such as the financial crisis in 2008 and the Copenhagen meeting in 2009 on the public attention attributed to the climate change issue and to the related policy discourse in the German press. Based on a quantitative content analysis of the two largest German national quality
newspapers, a quasi-experimental approach will be adopted, testing the propositions of “punctuated equilibrium theory” (Baumgartner & Jones 1993) in policy analysis. The paper also will use concepts and approaches in the area of discourse analysis – from qualitative variants to more formal quantitative approaches to the analysis of discourse structures and network relations (Janning et al 2009).

Large scale and focusing events such as the economic crisis or the Copenhagen meeting can trigger shifts and changes in the discourse on climate change. Preliminary analysis has shown that the economic crisis has produced a kink in the issue-attention cycle, triggering a substantial decrease in public attention as public attention for the economic crisis soared. Moreover, the results indicate that actors have changed their discursive behavior in the light of the economic crisis, entailing changes in actors’ standing and the frames applied by them to the issue of climate change (Vogt 2009). As natural experiments run short of quantifying causal links between variables, the observed changes in public attention and discursive behavior can at least explained by qualitative explanatory sketches in which the changes and shifts are traced and interrelated by visual descriptions at various levels.

**Sustainability-related Media Coverage in 41 Countries: Regional-level Patterns or a North/South Divide?**

Ralf Barkemeyer¹, Frank Figge¹, Andreas Hoepner²

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This paper analyses levels of public awareness of environmental and socioeconomic issues in sustainability in developing and developed countries as measured by relative levels of perceived media salience. The study utilizes a worldwide sample across 41 different countries in the years 2007 to 2009 to analyze how country and region of origin as well as levels of socioeconomic
development impact the sustainability-related media agendas of 115 leading national broadsheet newspapers. Coverage levels of 20 key issues in sustainability such as poverty, climate change, HIV/AIDS and corruption are analysed to identify national and regional-level patterns in sustainability-related media agendas. Previous research by the authors has shown that distinct media agendas can be identified between different countries as well as between developed and developing countries, with the latter showing a marked bias towards environmental sustainability in developed countries. However, it can also be expected that regional-level patterns emerge: for example, the strong environmental movements and environmental institutionalization in Western Europe can be assumed to have triggered comparatively high levels of media coverage on environmental issues across Western European broadsheet newspapers. A cross-sectional regression model is used to identify whether a range of factors including country affiliation, regional affiliation, Human Development Index (HDI) scores, or individual characteristics of the newspapers and their editors-in-chief, can serve to explain the sustainability-related media agendas reflected by respective coverage levels. The findings of this study can serve to inform recent scholarly literature in the field of both global governance and international corporate social responsibility (CSR). In both domains, it has been argued that a global dissemination of initially Northern-based instruments and concepts can be observed. In particular, the results of this study can shed light on the bias towards addressing environmental sustainability – at the expense of socioeconomic sustainability – that characterizes the current generation of global governance and international CSR-related concepts and instruments.
Environmental change as driver for sustainable business behaviour?

Nicole Kranz
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Business is often viewed as a main culprit for environmental deterioration and thus as a major cause for environmental change, due to pollution impacts or the over-abstraction and exploitation of environmental resources in response to short-termed profit-maximizing interests. At the same time, business is increasingly affected by environmental change as well and thus faced with the need to develop strategies to cope and adapt. A much quoted example in this regard is the increasing scarcity of production-relevant resources, such as water in case of the food and beverage industries.

This not only highlights the dependence of economic viability and stability on sound and resilient ecosystems, but also gives rise to the question of how the potentially growing awareness of business’ vulnerability to environmental change can be used in order to change corporate motivational patterns, leading to more responsible and sustainable business practices.

This question is of particular interest in countries with weak regulatory capacities, as government might not be in a position to provide sufficient regulatory incentives. Evidence from South African business sectors indicates that firms’ self motivation to engage in sustainable practices can be leveraged and modulated by governmental as well as other actors through engaging governance modes to yield sustainable outcomes. The results however also convey necessary conditions in terms of government will and capacity, particularly with regards to skills required for engaging a broad range of societal actors. The degree to which business behaviour can be transformed crucially depends on these factors particularly at the local governance level.
A new theory-driven sociological approach to institutional interplay in global environmental governance: analyzing inter-linkages among the global regimes on biological diversity, climate change and trade

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In this paper, we seek to contribute theoretically to the literature on horizontal institutional inter-linkages in global environmental governance by framing such inter-linkages as regime conflicts that are embedded in and shaped by overarching governance norms. Our definition of regime conflicts stresses the legal and behavioural conflicts that are immanent to any regime inter-linkage. Furthermore, it allows for an analytical distinction between inter-linkages per se (i.e. a positional difference) and their consequences (i.e. subsequent processes such as the management of a conflict). This allows for theory-driven analyses and predictions of these consequences. We further argue that such conflicts among international regimes are embedded in a broader normative context. Regime conflicts are an articulation of ongoing contestations over broader norms, practices and objectives. Building on these concepts of regime conflicts and norm collusion,
our paper targets a particular consequence of regime inter-linkages. We ask to what extent overarching global governance norms (and conflicts among them) shape regime development in general, and specific rules on overlapping issues among regimes in particular. We pursue this research question for three cases of potential regime conflicts: between the UN climate regime and the World Trade Organization; between the UN climate regime and the Convention on Biological Diversity; and between the Convention on Biological Diversity’s Cartagena Protocol on Biosafety and the World Trade Organization. For all three cases we find a dominance of the norms of neoliberal environmentalism, which has fostered inclusion of market-based approaches into the environmental regimes involved in these conflicts. However, we also identify considerable variation across the three cases: the dominance of neoliberal environmentalism has also been contested by other overarching global norms. This contestation has led to the inclusion of alternative norms in the involved regimes. We conclude by assessing the consequences of this for theoretical study of regime inter-linkages.

The role and influence of non-state actors in global environmental politics: Comparing multilateral, European Union, and private policy-making

Lars H. Gulbrandsen, Steinar Andresen, Jon B. Skjærseth
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This paper examines the role and influence of non-state actors in global environmental politics. It draws on the theoretical framework of multilevel governance, emphasising the influence of non-state actors at various policy-making levels. Empirically, we assess and compare the following cases: multilateral environmental negotiations (the climate change negotiations and the International Whaling Commission – IWC), the EU Emissions Trading System (ETS), and non-state environmental and social
certification programs. The comparison of the climate change negotiations and the IWC reveals that variation in domestic source of influence is crucial for explaining the different influence environmental NGOs have at the international level. With EU emission trading, a comparison of the 2003 and 2008 Emissions Trading Directives reveals that whereas the 2003 outcome was mainly in line with industry interests, the 2008 outcome was more in line with the positions of environmental NGOs. We examine whether this change was a result of NGO influence or other factors, such as the (changing) role of the member states and the EU institutions (European Commission and Parliament).

The last empirical section of the paper examines the emergence of environmental and social certification programs created with little or no participation from states. We focus in particular on forest and fisheries certification, while also covering certification initiatives in other sectors and industries. These multi-stakeholder programs are interesting to examine because NGOs and business have agreed on rules and mechanisms to enforce them and collaborate permanently in multi-stakeholder governance bodies. The comparison across cases reveals that there is significant variation in both the role and influence of non-state actors in multilateral, EU-level and private governance programs. Careful attention to this variation is crucial for advancing our understanding of how and under what conditions non-state actors influence policy outcomes.
An explanation of the barriers for global environmental governance reform

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In the past forty years the architecture for global environmental governance (GEG) has been heavily debated. Numerous proposals to improve the GEG system have been developed, many of which call for the establishment of some kind of World Environment Organisation (WEO). Although there is consensus among governments and scholars that the system needs improvement, no substantial decisions on reform have been taken. This paper addresses the issue identified by the Berlin Conference concerning social barriers to effective environmental policies at the international level. Based on a literature study and more than twenty interviews, the paper identifies the main barriers for GEG reform, using three theories of new institutionalism: rational choice, discursive, and historical institutionalism.

Rational choice institutionalism suggests that the fundamental differences between national and institutional self-interests is one of the barriers to GEG reform. According to discursive institutionalism, the incentive to maintain the status quo is a key hurdle, mainly caused by the fear of states and international organisations to lose part of their authority. Historical institutionalism shows that power inequalities and trust gaps between nation-states further hamper the debates. While historical institutionalism focuses on the complex nature and the ad-hoc and diffused development of the GEG system, discursive institutionalism shows that the nature of the debates concerning GEG reform thwarts progress towards agreement: debates are fragmented, tend to ‘recycle’ issues, and lack involvement of civil society and academics.

The second issue identified by the Berlin Conference that the paper
focuses on is the (synergies and conflicts between) theoretical approaches to questions relating to the social dimensions of environmental governance. The paper provides a critical evaluation of the utility of the theories of new institutionalism, showing that despite some fundamental differences the three theories complement rather than contradict one another in their account of the barriers to GEG reform.

Gramsci in Brussels: “The Prison Notebooks” as a theoretical guide for venturing across Europe’s environmental policy landscape

Kim Bizzarri
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At European level, multi-level governance (MLG) theories have come to dominate the study of environmental policy governance. Although MLG proponents have been successful in transcending the stale debate between state-centric theorists, MLG theories still offer little insight into the social dimensions of environmental governance. In recent years, a more innovative and promising approach has been developed within the field of International Political Economy (IPE).

Drawing from the teachings of the Italian philosopher and political activist Antonio Gramsci, a growing number of IPE scholars have combined both rationalist (materialist) and constructivist (cultural-ideological) theoretical elements to develop a theoretical approach that enables researchers to engage critically in the study of governance. Till now, however, environmental policy has received little attention from scholars operating through such lenses. It is the aim of this paper to make a strong case for applying Gramsci’s key notions of “hegemony”, “class”, “organic intellectuals”, “civil society”, “historical blocks” and “political projects” to the study of European environmental policy governance.
By focussing on the political economy of environmental policy, this approach offers a powerful alternative to state-centric and governance approaches. It allows, for one thing, to explore in greater detail the dynamics between structure and agency affecting the social aspects of European environmental policy-making. In so doing, it brings to the fore the social dimension of its governance. As a result, and in contrast to rationalist (state-centric and governance) theorists, the analysis does not limit itself to the description of how systems operate, but addresses, first and foremost, the questions of who operates them and why? Accordingly, the underlying social relations of systems of governance become exposed, and the synergies and contrasts between social, economic and environmental objectives become clearer. The paper takes Europe’s regulation of biofuels as its case study.

**Intergenerational Reciprocity and Environmental Governance**

**Matthias Fritsch**  
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The concepts of sustainability that are most widely accepted in the international arena are crucially underwritten by duties to non-overlapping future generations. If such duties are derived directly from the legitimate claims or rights of future people, they suffer from some well-known ontological (e.g. Parfitian) problems. This paper will argue that the extant theoretical literature has focused on these ontological problems to the unfortunate neglect of the equally important (and indeed related) fact that duties so conceived (that is, as duties owed directly to people not yet existing) cannot easily capture and support widely accepted principles of international justice, namely those that combine responsibilities in the past (such as polluter-pays principles) as well
as present capacities with future-directed duties. To differentiate responsibilities according to which country did what in the past, direct futural duties must thus be complemented by principles based on the other temporal modalities (past and present), which, however, may be and often are in fact rejected by some negotiating parties, making global governance of environmental issues more intractable.

I argue that certain reciprocity-based approaches to intergenerational justice fare much better in that they conceive of duties to future people as the indirect result of what every present generation (even if largely involuntarily) received from its ancestors. Such indirect future-oriented duties take into account how much a society benefited from past usages of a limited resource (such as the carbon-absorptive properties of the atmosphere) to calculate both present capacities and futural duties and to address the problems resulting from such usages. Drawing on phenomenological-ontological accounts of historical time, I argue that intergenerational reciprocity is well supported by the very being of institutionalized societies: it intrinsically belongs to institutions to seek to survive, that is, draw on the past in favour of the future beyond the present.

C1: Indicators
Time: Friday, 08/10/2010: 6:00pm - 7:30pm
Chair: Tom Bauler, Université Libre de Bruxelles, Center for Studies on Sustainable Development

Developing social monitoring for the purposes of the Convention on Biological Diversity

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The Convention on Biological Diversity (CBD) stands for a comprehensive framing of international nature conservation policies (sustainable use, benefit sharing, integrated land use planning). After nearly 17 years now since its entry into force, the question of what has been achieved so far is getting ever more pressing. Yet we are still lacking clear criteria and indicators to come to credible assessments, in particular with regard to the social impacts of the Convention and its instruments. Based on a two years research project, our paper will address this neglected issue of social monitoring in the context of the CBD. As a general rule, instruments of measurement and observation in the ‘social realm’ have to reflect the specific characteristics and problems in developing indicators for social issues. These characteristics include the normative foundation and implications, the coexistence of objective and subjective dimensions, the spatiality and scale of social issues, as well as their second-order reflexivity. Moreover, frameworks of social monitoring must fulfill specific standards of legitimacy, expertise, coherence and comparability. Taking these requirements into account, we propose a two-layered framework of social monitoring for the purposes of the CBD and its ecosystem approach that goes beyond the current, article-centered debates. The first layer consists of generic core issues that should always be addressed. Taking the basic needs concept as our point of departure, we maintain that the objectives of the CBD cannot be achieved in cases where this would imply a deterioration in terms of basic needs satisfaction. The second layer consists of a set of procedural rules which allow for the downscaling of the core issues into locally applicable indicators which are adapted to regional and other specific requirements. We thus arrive at a two-tiered network architecture that can build on widely accepted elements in an innovative and coherent manner.
The aim of the study is to determine the influence of population pressure and agricultural land use on environmental sustainability in Nigeria. To achieve the aim, Environmental Sustainability Index (ESI) was first calculated for each state of the country and used as a dependent variable in the regression to determine the Standardized Coefficients and elasticity of agricultural land use and demographic variables. The Coefficients were then used as input data for STIPART model which was employed to ascertain their impacts on environmental sustainability. Next, cluster analysis was performed to group the states on the basis of similarity of environmental impacts and 3.20a GIS Software used to map the impacts. The results show that the southern states of the country have higher ESI scores than the northern states, implying higher levels of environmental sustainability in the south. The results also show that the regression model accounts for 94.4 % of the variation in environmental sustainability in the country while the STIPART model indicates that the southern states are experiencing greater environmental impacts as a result of agricultural land use and population pressure. However the pressure on the environment in the south brings about a number of responses including intensification of agriculture, diversification of economic activities and migration. These have all been beneficial to the sustainability of the environment in the south because of economic advantage of concentration of production and social benefit that come from a convergence of living standards which they bring. The findings underscore the need for policy commitment and support for population and settlement reorganization and changes in landholdings which will ensure spatial integration in the country.
Proposal for a Nonlinear System of National Accounts

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National Accounts are a child of the Great Depression and the planned economies of the War Years, 1939-1945. The accounts were designed for the economic management of the trade cycle, a floor on the deflationary cycle, and a ceiling on the inflationary cycle. Their secondary purpose was to monitor the state, and change of state, of the economy. While these accounts served well government economic decision-making and business analysis at the macroeconomic level, the structure of the accounts were unsuitable for analysis of complex systems associated with social, economic and environmental interactive processes. The attempts to broaden the categories of the national accounts to include social matrices, environment and natural resources failed at the level of an integrated system of accounts. This paper proposes a method for integration social, economic and environmental statistics at a higher order structure of social values. We shall examine the concept of 'entropy production' as the numeraire that cuts across social, economic and environmental accounts. The origin of the concept is found in Georgescu-Roegen monumental analysis of the economic process, with a compelling demonstration that "The Entropy Law itself emerges as the most economic of all natural laws. It is in the primary science of matter that the fundamental nonmechanistic nature of the economic process fully reveals itself," (Goergescu-Roegen, 1971: 3). The paper will present methods to map social and economic statistics on ecosystem functions. Entropy, in this context is a measure of 'disorder' in any well-defined complex system. Production is redefined as the neg-entropic process, consumption as the entropic- process, and capital accumulation is the net-value, or surplus realized as a ratio of the rate production over the rate of consumption. This is presented to
the conference as 21 Century System of National Accounts - designed to protect the Global Commons and humans from themselves.

**Responses to Environmental and Societal Challenges for our Unstable Earth (RESCUE) initiative**

**Bernard Avril**  
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Humankind is currently facing unprecedented changes in the Earth system, that have arisen at a rapidly growing rate because of human activities: among others, unsustainable exploitation and consumption of natural resources and accelerating perturbations of the environment. The systemic understanding of global environmental change has expanded markedly, but societal and policy-relevant drivers and consequences are still to be fully explored. In particular, the complex Earth system requires interdisciplinary studies at scales compatible to political and societal agendas, and some stronger common, integrated foundations between natural, social and human sciences to be established.

In this context, the “Responses to Environmental and Societal Challenges for our Unstable Earth” (RESCUE, www.esf.org) foresight initiative will help the European science community and the related science policy actors address the societal and scientific challenges related to global environmental change, including its human dimensions, and help stimulate an integrated response from natural, social and human sciences. This will be achieved through the following key objectives:

* To propose a strategic process for natural, social and human sciences to improve their interdisciplinary synergy, to respond efficiently to societal and policy-relevant needs;

* To articulate new scientific issues related to global change, especially those of transdisciplinary nature or of major society-
driven relevance;

* To explore new approaches towards interdisciplinary science, and to facilitate the ‘revolution’ in education and capacity building it requires.

Through its analyses and recommendations, RESCUE will help enable the scientific community, together with other actors and key stakeholders, to develop medium to long-term strategies for future research activities and applications. It is anticipated that RESCUE will impact society by favouring common strategic understanding and coordination, and transformative education delivery, to help ensure global sustainable governance.

The presentation will give insights about the latest progress of the RESCUE foresight initiative run under the auspices of ESF (www.esf.org) and COST (www.cost.esf.org).

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**C2: Multi-level Governance: Local Responses (II)**

*Time:* Friday, 08/10/2010: 6:00pm - 7:30pm

*Chair:* N.N.

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**From command and control to local democracy: the governance of community energy projects**

**Nicola Mary Ison**  
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In a climate changing world, two of the greatest challenges of environmental and social governance are those of transforming our energy systems and creating more adaptive and democratic institutions. The shortcomings of current energy governance policies and practices are particularly evident in the continued
support for the centralised burning of fossil fuels, with significant implications for emissions and environmental degradation.

To date, research into energy governance has primarily focused on deliberative decision- and policy –making [1;2]. Participation- in-action and self-governance as an alternative governance strategy has been largely ignored. The result is that citizens are left feeling like “amateurs” who can play no other role than client in the civic process dominated by experts and the state [3].

In positioning participation-in-action as a more democratic form of governance and an emerging socially sustainable energy praxes, this paper reports on current research investigating a series of community energy projects in the UK. Informed by earlier work on barriers and incentives for community energy projects [4] and research into social enterprises, green citizenship and democracy [5;6], the key contribution of this paper is exploration of a new conceptual and methodological approach to community based energy governance centred on the notion of a systemic inquiry, which facilitates the development of governance activity models [7]. Understood in terms of associative democracy [8], governance activity models can be used to explore the key activities of community energy governance. This enables participant reflection on how and why community energy governance processes differ from command and control hierarchical governance structures typically found in corporations and government agencies. The paper concludes with an analysis of the role of community energy actors in governance processes, the key opportunities and limitations for the suggested approach and the changes to government policies and institutions required to support community governance of energy systems.
Governing Climate Change at the City Level: Tales from Two Global Cities in Brazil

Rafael D'Almeida Martins, Leila da Costa Ferreira
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Climate change poses not only a local place-based problem, but also cross-scale challenge. Addressing this unprecedented challenge requires actions at different levels (multilevel) raging from conventions and treaties at the global level to climate protection measures at the city level. The relationship between cities and climate change is usually based on a complex balance between vulnerability and responsibility. By mitigation cities can substantially reduce their environmental impact and consequently transform their infrastructure and the behavior and consumption patterns of their dwellers improving the global environment. By adaptation cities can become resilient to the impacts of climate change and reduce risks from climate change and variability. It is also particularly important to focus on global cities that are engines of economic growth, centers of innovation for the global economy and important areas of population concentration and growth. Building on that, this paper analyses the factors shaping climate policies in two global cities in Brazil through a multilevel perspective: São Paulo and Rio de Janeiro. It explores how climate change is being framed and how local governments are responding to it in terms of policy strategies and instruments. We argue that the participation in transnational networks of subnational governments has been crucial for promoting and supporting climate change actions in both cities. However, the organization, steering and implementation of these measures rely heavily on a landscape formed by multiple actors with a variety of interests, capacities, and challenges often spanning several sectors. This fragmented landscape of actors, interests and sectors combined with structural governance problems pose significant challenges for the advancement of these efforts in the two cities. We discuss the
governing of climate change action and analyze the factors that can constrain or undermine these actions.

**Role of Tokyo in Japanese Climate Policy -From the Viewpoint of Multi-level Governance**

**Noriaki Yamashita**
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Climate Change is becoming an increasingly important environmental issue these days. While national governments play a very big role in this issue, cities have also increased their significance to tackle climate change. Some big cities have created innovative policies and been effective in influencing the national government.

Today, climate policy focusing on energy efficiency and renewable energy has increased in importance. In Japan, the former national government had not adopted such policy schemes as a national energy policy and most Japanese local governments have only conducted demonstrative projects such as green public buildings, “new energy” vision and “energy efficiency” visions. During the past 10 years, however, Tokyo has developed a climate policy including the first local cap & trade scheme and strategic renewable energy promotion with a mid-term substantial target. In addition, Tokyo’s policies have led to similar policies in other local governments, as well as the national government.

Since a national policy framework provides the behavior of local governments, most local governments follow the national government’s targets and policy. How does Tokyo move forward with their climate policy and how does Tokyo contribute to the promotion of national climate policy? Who promotes these policies and how? Multi-level governance and policy transfer are key concepts in helping to clarify these question. From the multi-level governance perspective, the relationship between local-national
authorities is treated in a comprehensive manner. On the other hand, policy transfer concepts will help to understand the kind of influence from the local to national level.

In this research, interviews of stakeholders as well as a survey of papers and public documents are planned. This research will contribute in clarifying the factors affecting in the policy-making process at local and national level by Tokyo and, in addition, shed further light on the roles of TMG in Japanese climate policy.

The role of transnational city networks in the diffusion of urban climate change strategies

Jesko Eisgruber¹, Nils Simon²
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Climate change is a highly complex phenomenon, and so the solutions to it need to address multiple issues on various spatial scales, including the local level. Urban climate politics have only recently been gaining more attention from political scientists, even though cities offer a unique range of options for mitigating climate change and can act as laboratories for new policies. However, municipalities have only limited capacities and control over domestic greenhouse gas emissions, since many decisions are made on other levels, especially the national government. Realising their limitations, city officials have founded several transnational city networks (TCN) over the past decades concerned with local environmental politics. These networks are supposed to work as junctions for distributing knowledge, assisting officials, and raising awareness. They hold the potential to overcome the limits imposed by the relatively small size of municipal bureaucracies, and to act as powerful agents for the diffusion of climate change policies.

In our paper we assess the role of transnational city networks in
the formulation and diffusion of urban climate change strategies. Conducting an online-based survey among cities in Southern Germany, Switzerland and Austria, we gather broad information about the diffusion dynamics on the local level, both within and across countries. We can show that urban climate change strategies diffused rapidly among cities over the last two decades and that TCNs are an important factor for and during the formulation and diffusion of urban climate change strategies. Two qualitative case studies on urban climate change strategies in Augsburg and Vienna corroborate the finding that TCNs play a vital role in the diffusion of local climate strategies, yet point towards additional factors, including the party composition of local councils as well as unique factors like the presence of local entrepreneurs.

C3: Creating Markets
Time: Friday, 08/10/2010: 6:00pm - 7:30pm
Chair: N.N.

Equality in environmental governance - Ecuador’s effort to reduce deforestation

Torsten Krause
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Extensive social inequalities and one of the highest deforestation rates in Latin America represent some of the main challenges ahead for the Republic of Ecuador. Along the lines of international development efforts that increasingly promote the significance of healthy ecosystems as the pre-requisite and foundation for human well-being, Ecuador has realized that deforestation and livelihoods are inherently connected. However, as a result of the re-emphasis
of deforestation and climate change in the international climate negotiations, the emerging policy mechanisms are mainly based on the idea of constructing financial incentives schemes focusing purely on carbon storage. The recent implementation of a national program for forest conservation and poverty reduction underlines that the Ecuadorian government begins to confront this reality and endeavors to be at the vanguard of safeguarding the country’s exceptional biodiversity in the course of reducing deforestation while fighting social inequalities simultaneously.

This paper examines the Ecuadorian Forest Partner program [Programa Socio Bosque] and investigates the impacts on social justice and equality in this particular incentive mechanism. The grand objective of the program is the inclusion of about 14 percent of the national territory and ultimately benefiting more than one million people in underdeveloped rural areas. However, this paper will draw attention to the social implications resulting from this ambitious plan. Based on preliminary evidence and empirical findings, it is argued that Forest Partner risks to lead not only to positive changes in current and traditional perceptions of stewardship and traditional land management, but also creates perverse incentives, increases income disparities and dependency on the governmental incentives and, consequently, potentially increases inequality instead of reducing it.

**Equity vs. Conservation: Specialized Regimes on Access and Benefit-sharing for Different uses of Genetic Resources and their Relationship with the International ABS Regime under the Convention on Biological Diversity**

**Stefan Jungcurt**
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Negotiations on an international regime on access to genetic
resources and the fair and equitable sharing of the benefits arising from their use (ABS) under the Convention on Biological Diversity (CBD) have been driven by the twin objectives to generate resources for the conservation of genetic resources (conservation objective) and to achieve a more equitable distribution of the benefits arising from the commercial use of genetic resources between suppliers and users (equity objective). While earlier discussions focused on designing a single international ABS regime, the debate is now shifting towards the consideration of specialized regimes that are adapted to the practices and types of resources used by different user communities, such as plant or animal breeding, pathogen research or marine bioprospecting. This raises a number of questions with regard to the design of such specialized regimes for genetic resource governance and interactions among them arising out of differences in scope, objectives and recognized practices of access, utilization and benefit-sharing. This paper develops a framework for describing and analyzing emerging models of international governance of access, utilization and sharing of genetic resources and distribution of benefits arising from their use. The framework allows taking into account different types of genetic resources, technologies of conservation and utilization and existing practices within different user communities, and shows how these influence the governance structures developed under specialized ABS regimes. Based on this framework, the paper analyzes how existing and emerging specialized regimes, such as the FAO International Treaty on Plant Genetic Resources for Food and Agriculture, the UN working group on marine biodiversity and the WHO discussions on virus sharing, address conservation and equity-related concerns, and how they would interact with an overarching international ABS regime under the CBD.
The use of markets for biodiversity in Germany: where are we and where should we go from here?

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Managed grasslands contribute in a number of ways to the biodiversity of European agricultural landscapes and provide a wide range of ecosystem services that are also of socio-economic value. Against the background of a rapid biodiversity loss in agricultural landscapes, increasing attention is being paid to farming practices that enhance ecosystem services. Therefore developing cost-effective conservation payment schemes is the main challenge facing present European agri-environmental policy. However, there is still a serve shortage of knowledge and practical experiences concerning the use of conservation procurement auctions in Europe.

The aim of the paper, therefore, is twofold. Firstly, the current state of using markets for biodiversity by means of payment-by-results biodiversity conservation procurement auctions will be discussed by reviewing the design, implementation and performance of three field experiment case-studies with farmers in Germany. Secondly, further need for research will highlighted. Keeping in mind the methodological difficulties of evaluating field experiments, the case-studies indicate a potential for budgetary cost advantages of auctioning compared to traditional fixed flat-rate payment schemes of up to 52 per cent. These findings along with the relatively high number of successful participants indicate that this specific approach will most probably be an improvement over current agri-environmental programmes in the EU. This is mainly because low-cost producers gain smaller information rents and conservation agencies will be able to close contracts with (some) high-cost farmers due to cost-effectiveness gains provided by low-cost landowners.

Even though the case-studies have yielded promising results, some
critical aspects as well as lessons to be learnt will be discussed to improve the design and performance of biodiversity conservation procurement auctions based on performance payments. Current need for research addressed in the paper especially takes into account the question of how to deal with information and ecological stock dynamics within repeated conservation procurement auctions under uncertainty.

**Challenges to Water Pricing in Developing Countries: The Case of Lima, Peru**

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Water pricing reforms in developing countries have to meet a complex set of criteria. Prices have to provide for efficient water use, and cover the costs of water suppliers. Both criteria usually call for significant price increases. At the same time, water has to be affordable to the poor, and reforms must be politically feasible. These criteria call for low water prices. Between these conflicting criteria, important challenges for water pricing emerge.

To understand these challenges properly, this article develops a broad perspective on water pricing. Three dimensions are decisive: (1) the design of water pricing, (2) its implementation and (3) the technical environment into which it is embedded. (1) The design of water pricing may vary between grid-based and decentralized water supply. In either case, three components - the average level of pricing, the assessment basis of pricing and the tariff – have to be considered. (2) The implementation dimension refers to the resources available to water suppliers for monitoring and enforcing prices as well as to the perceptions of water customers. (3) The technical environment includes issues of grid connection, individual versus joint connection and metering, all of which may have an impact on the actual incentives set out by water pricing.
Using this theoretical concept, the article highlights major challenges to water pricing in Lima (Peru), a geographical spot which is characterized by particularly high water scarcity. Six challenges are outstanding: a) the inadequate regulatory model to determine the average price level, b) the lacking price differentiation with respect to potable water, waste water and treatment, c) the unfair design of cross-subsidies, d) the absence of regulation for decentralized water supply, e) the inadequate monitoring and enforcement of tariffs, and f) the lacking perception of water as a scarce and valuable resource.

**C4: Participatory Governance of Natural Resources**

*Time:* Friday, 08/10/2010: 6:00pm - 7:30pm  
Chair: Christian von Haldenwang, German Development Institute (DIE)

**Rain does not fall on one roof alone. A case study in participatory environmental governance and capabilities**

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The present paper looks at the social and ecological benefits of a participatory water governance at the local level. Lack of access to safe drinking water and sanitation especially for the poor in developing nations have caught significant attention. With climate change beginning to aggravate the situation in many instances, a ‘global water crisis’ has been foreseen. Water governance invariably involves environmental governance if it is to be sustainable, and linking these can itself be a success factor by creating incentives for sustainable resource use at large (i.e., beyond water). The local level merits attention as (1) concrete
solutions to water supply and sanitation are essentially local; and (2) the administrative state often lacks the resources for effective policy implementation at this level.

The paper draws on deliberative democratic theory and the capabilities approach for a theoretical framing and analysis of a case study of NGO-led water governance in rural India.

The case study explores the hypotheses that: a) far-reaching political participation yields high potential in forging sustainable agreements, and increases their chances of implementation, b) political participation is as much an end as a means of development, and c) core human needs, such as those of access to water and sanitation, increase stakeholders’ willingness to engage themselves in the governance process in question, but subsequently also on related issues of environmental governance and management, e.g. regarding communal forests and groundwater recharge.

Pursuing these hypotheses, the paper investigates into the requirements for institutional designs for the sustainable governance of water and related natural resources. The case study illustrates how third sector organisations contribute to the implementation of policies targeting environmental degradation and change.

**Unsustainable Environments: The Case of River Privatization in Turkey**

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The highly contested and complex topic of sustainable development calls for a radical rethinking of governance and a critical examination of power relations in the area of natural resources. This paper inquires into Turkish river privatization as a means to energy production and its relationship to access to water problem and effects on society. The hypothesis put forward is that
Turkish water governance is framed through discourses of neoliberalism, that is, about privatization of water resources, decentralization of water governance and the commodification of water. The distinctive ideological and discursive infrastructure supporting prevailing Turkish visions of state-market-society relations are identified and assessed against the hypothesis of a dominant neoliberal discourse. How the discourse of neoliberalism has come to be so influential in Turkish water governance is explained by looking at the discourses of different influential actors such as private companies, multilateral institutions (IMF, World Bank, EU) and the state since 1980s and the power relations between them. Using cases of river privatization from different regions of Turkey as case models of neoliberal water discourses the paper questions the social and environmental sustainability of the hydroelectric power plants operated by private companies. River privatization, or in this case commodification of river water for energy production, has been a controversial issue since the Turkish government enacted a law allowing the private sector to secure rights to water usage from rivers for 49 years. While discussing the complex relations of power between private sector, civil society and the Turkish state, this paper aims to analyze the social, institutional and political implications of these developments for issues such as ownership, allocation and access.

**How Marginalised Communities Make Themselves Being Heard in Tropical Forest Governance: A Review of Five Case Studies in the Brazilian Amazon.**

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In the Brazilian Amazon, governance reforms that cater for both, the needs of poor smallholders and environmental concerns are
frequently exposed to a challenge: Those who pursue environmental destructive activities on a large scale often have close ties to decision makers at various administrative tiers. This makes it difficult for those who suffer from these land use activities to make their claims being heard in processes of institutional change.

The example of forest tenure reform that protects smallholders from land invasions is used to analyse institutional change under these circumstances. It builds on a comparative case study approach drawing on five tenure reform initiatives in the federal state of Pará. Data was collected from 2006 – 2008 and analysed using a hermeneutic approach that builds on existing theories and allows for the emergence of empirically informed codes. Results show that smallholders are marginalised in local politics. Ranchers or logging companies are closely related to municipal politicians making it difficult for poor resource users to achieve governance reforms that would reflect their needs. To overcome their marginalised position, poor smallholders need to rely on civil society movements and alliances capable of taking their struggle to the federal level. Environmental NGOs are essential to achieve this. This emphasises the role of power in bringing about environmental governance reforms. Efforts to change environmental governance need to address its political nature and employ measures to support local civil society movements during these processes.

The paper reports on the dynamics of tropical forest governance in a context characterised by inequality in access to political fora. It suggests a framework to analyse the ways power influences governance reform processes. This highlights the challenges smallholder communities need to confront when striving for inclusive environmental governance regimes.
Inter-Linkages between Poverty, Livelihoods and Climate Change in Cherangany Catchment, Marakwet District, Kenya.

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The research was carried out in two divisions of Marakwet district namely; Kapyego and Kapcherop. The research started in October 2008 and was completed in October 2009. The objectives of the study were; to assess land use changes, to determine the effects of land use changes on socio-economics of households, to investigate causes of resource use conflicts, and to assess community awareness in environmental conservation and indigenous strategies in resource conflict resolution. The key findings are; land use patterns have changed over time due to climate change thus affecting the livelihoods of the rural people. This led to changes in cultivation patterns and types of crops grown. The findings indicate the respondents have little [20%] knowledge on the impacts of climate change and environmental conservation. The findings confirmed the respondents have developed indigenous strategies to resolve conflicts arising from natural resource use and management. The study recommends training for communities on the indicators, impacts and coping strategies to climate change.
Key words; catchment conservation, training, disaster mitigation.

Interaction between the water system and society: a case study of the Netherlands and lessons for the future

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Water management faces major challenges to cope with potential global impacts, and the inherent future uncertainties in both the water system as well as the social system in a sustainable way. Uncertainties in our water system relate to (changes in) drivers and pressures and their effects on the water system, like the effects of climate change on discharges. Uncertainties in the social system relate to changing perceptions, objectives and demands concerning water (management), which often relate to the aforementioned changes in the physical environment. The interactions between the water - and social system, in particular the social responses to events and developments and their effects on support for measures, are poorly understood.

To support sustainable water management, this paper provides a systematic way of analyzing water system- society interactions. To this end, the 'Perspectives method' - derived from Cultural Theory – is adopted as an analytical framework, to analyze and classify social responses and perceptions to social and natural pressures. Based on a historical analysis of the Netherlands and the Dutch water management (as from the year 1900) we will show how society and the water system interact, and what lessons we can learn from that. These lessons will particularly focus on the identification of social responses to events and developments, and how changing perspectives influence public support for certain
water management strategies and their effects. This empirical research is part of an overarching research to develop a new method to identify sustainable water management strategies, in which non-linear developments of the human-environment system are represented on the basis of perspectives and perspective change. We will show how the analysis provides insight in the risks and opportunities of certain strategies under different futures, and how it contributes to the development of sustainable water management strategies into an uncertain future.

**Conditions for the successful combination of flood prevention and river restoration – extract from five examples in Switzerland**

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In the literature on community based natural resources management it has been discussed that biological conservation objectives should be linked with local development objectives to successfully realise community-based conservation. In this mainly theoretical literature it has been proposed that one condition for effective combinations of conservation and development objectives is to frame issues as multilevel common problems (Berkes, 2007). However, social scientific investigations of conservation projects in developed countries still focus on protected area management.

To deepen our comprehension about how projects with combined objectives work in the field, we investigate cases that were from the outset framed as having two objectives; these cases are combined projects of flood prevention and river restoration in Switzerland. Our objective was to identify the most important features of these projects for making them work from the perspective of the participants. Using personal interviews with
stakeholders that participated in collaborative planning and project leaders we investigated the multi-level governance setting and other features of these projects. The five planning processes we investigate vary mostly in the cantonal and regional institutions that were present. Personal interviews were conducted with at least five participants of each of the processes.

A first analysis of the results reveals that the size of the project seem to be directly linked to the presence of a regional institution (in its size located between the cantons and the municipalities). Their presence strongly support regional projects and thus solutions closer to the natural/ecological scale of rivers. Supporting factors for the realisation of combined projects were the availability of public land to compensate for land losses, additional financial resources for ecological measures, and conditions imposed by the canton and federation for the financial support of projects.

How are climate change adaptation strategies put into practice? A case study comparison of natural hazard prevention

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Climate change affects increasingly the management of natural resources and has diverse impacts of environmental, social and economic nature. To take this complexity into account, climate change adaptation policies consider the principle of sustainable development. Sustainability is an integrative concept which should insure a long-term and multi-sectoral response to climate change. But the question appears if sustainable development is only retained at the conceptual level or effectively implemented in practice.

This paper pursues this question by comparing three projects addressing natural hazard in Swiss mountains. The aim is to
investigate how sustainable development is perceived by involved stakeholders and implemented in practice. Two dimensions are thus taken into account: the type of actors participating in these projects and their preferences and interests. The first dimension thus analyzes if diverse actors representing the environmental, economic and social arenas are integrated; the second dimension investigates if different interests and preferences in the sense of sustainability were incorporated in the design and implementation of climate change adaptation. Data were gathered through a standardized survey among all actors involved in the three projects. Preliminary results show that sustainability receives diverse weight and interest in the different cases.

**C6: Modeling Resource Use**

*Time:* Friday, 08/10/2010: 6:00pm - 7:30pm  
Chair: N.N.

**Wind Energy: a sustainable development strategy for rural areas in Germany and Spain**

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Among the issues that affect rural areas in the EU, some of the main difficulties are to identify strategies for diversifying the economy and develop endogenous resources, employment generation, the settlement of its population and the need to achieve equity the quality of life compared to urban areas. In this context, an option to diversify the economy and contribute specially to sustainable development is the strengthening of
activities related to renewable energies. The aim of this paper is to show the role that wind power may have as a possible answer to the problems affecting rural areas, based on analysis of two cases, one in Germany and the other in Spain. The interaction between the introduction of wind farms and sustainable rural development is studied through the following cases: Nordfriesland in Schleswig - Holstein (Germany) and Sierra de Guerinda in Navarra (Spain). The cases analyzed show different situations but with one significant characteristic in common. In both cases, installing a wind farm is an effective strategy for economic diversification, creation of new jobs as well as keeping population figures. However, it does not seem to appear as a unique alternative to fostering a rural world in a clear regression, and it is often accompanied with a more diverse strategy, such as other renewable energy sources, tourism or decision making.

**Coca (Erythroxylon coca) crops and social-environmental conflicts: a spatial analysis**

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The cultivation of coca (Erythroxylon coca) in Colombia constitutes the first step of the largest illegal agribusiness that exists in the world: Cocaine, in which the small local cultivators initiate the production chain. The following steps in the chain, where most of the money profit is made, correspond to the elaboration of cocaine and its commercialization at a global scale which is in the hands of illegal armed groups and drug dealers. Most of the literature related to illicit crops consider the national and global factors that influence the expansion of these products. However only little is written in the scientific literature concerning the local conditions where the social-environmental impacts due to these activities are
concentrated. This study analyses for the first time the local factors (social, economic, environmental and institutional) associated to the expansion of cocaine during the last decade and how these activities have provided the favorable settings for the increase of deforestation in zones of high environmental importance. For the proposed analysis a social-ecological conceptual framework was made, based on literature reviews which were confirmed by statistical analysis of data at a municipal level and the use of bivariate Local Indicators of Spatial Association (LISA) during the two year period of this study. This has allowed an improved comprehension of the complexity between the coca cultivations and its relationship with the emergence of social-environmental conflicts. As a result an association is shown between deforestation of primary forest of low-laying areas and the increase of cultivated areas of coca with an intensification of land-use conflicts. This study demonstrates the environmental, institutional and social-economical resemblances that determine the establishment of coca cultivations at a local level and its relationship with increase of coca cultivations towards the north and southwest of Colombia and as such the expansion of the social-environmental conflicts.

**Regional effects of local responses to uncertainty of agricultural water supply in Múrcia, Spain**

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Agricultural development in the Murcia autonomous region, Spain has taken place at huge environmental costs. Overexploitation of groundwater resources is especially severe. At the same time, global environmental change will inevitably increase pressures on the sustainability of agriculture in this part of the Mediterranean’s dryland agro-ecosystem. Policy options to tackle the current unsustainable situation may include but are not limited to the development of inter-basin water transfer (IBWT) schemes from wetter regions in the north and the introduction of taxation to further control groundwater abstraction. Depending on their respective current land uses, farmers could face the following situations: a) introduction of water tax to those currently having access to groundwater abstraction; b) water price increase to current users of transfer water; and c) first time availability of water resources through IBWT in areas where water was previously not available. Through discrete choice based interviews (DCI), we asked farmers in a field study area (the Torrealvilla catchment) how these scenarios would influence their land use decision-making. The results from the interviews enabled us to construct an agent-based model (ABM) to produce maps of predicted land use change for the study area. By aggregating the results to five agricultural enterprises (irrigated vegetables and fruits, table grapes, olives and almonds, grains and livestock), land use changes were then scaled up to the whole Murcia region. At this aggregated level, using Input-Output analysis, we subsequently evaluated the effects of the water scenarios on: i) the regional economy; and ii) the regional water budget. This modelling framework allows us to link changes in water demand as informed by the DCI to evaluate the regional economic and environmental effects of abandonment, extensification and intensification processes triggered by different policy options. Finally, we discuss the implications of this novel evaluation framework and how it can enhance decision-making.
Institutional challenges to developing a Nigerian climate policy

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This paper discusses the structural basis and practice of creating a climate policy framework in Nigeria. The roles of existing and planned institutions and legal frameworks are discussed, as well as how they foster or hinder the design of policies and implementation of climate responses at the domestic and international levels. Data was collected between August 2009 and February 2010. The paper combines literature review with empirical data from interviews of various actors in the Nigerian climate policy process.

Various actors including the federal and state governments, civil society and private sector interest groups as well as the Nigerian oil sector are working conjointly on the elaboration of political frameworks and on the realisation of a multitude of individual projects focused on climate change. The paper examines the roles of these various actors and the implications for climate policy and action in Nigeria. The positions of Nigeria in the international climate change policy process are contrasted with its domestic responses to climate change.

Currently, there is a lack of cohesion between political initiatives
and institutions, and a weak implementation of environmental laws and directives. Although becoming a topic of increasing political interest, a policy framework on climate change is still nonexistent for Nigeria – caused not least by diverging lines of interest between participating institutions. The paper shows that once awareness about climate change has been created, there is a danger of the proliferation of institutions and actors addressing the various dimensions of climate change. This proliferation highlights the lack of coordination between various government entities and their struggle to gain/retain influence over the national climate policy, thereby slowing down the design and implementation of responses to mitigate and adapt to climate change. Suggestions are made on how the barriers to climate policy development and implementation in Nigeria can be overcome.

**Affluence and Consumption in Modern China: Foundations for Climate-Related Duties**

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China's official position on climate change as been the same as that of developed countries responsible for historical emissions of greenhouse pollution: 'you go first'. But as millions of Chinese people join the global consumer classes, this argument becomes weaker. While China's responsibility to act on climate change is probably far lower than that of the West, the same cannot be said for China's 'new consumers' who pollute as much as people in the West. The solution to the you-go-first mentality that has characterized climate change diplomacy may be found in an acknowledgment by Beijing that not all Chinese people are poor. Affluent Chinese have a responsibility to act now to fight climate change even if China as a state justifiably continues to reject such a responsibility. Put another way, all of China need not wait until
Americans and Australians go first. Affluent people in China can act alongside Americans and Australians. To be sure, most Chinese people are poor and can be expected to use more energy, as is their right. However, until clean-energy alternatives are much more widely in use, affluent Chinese should cut back alongside most Westerners. From this comes an important conclusion: China could be a leader in the battle against climate change without limiting its economic development. By formally agreeing to have its most well-off people reduce their greenhouse pollution, it could break the diplomatic deadlock and remove the last excuse that Western governments (and citizens) have used to avoid fulfilling their responsibilities. By doing so, Beijing would send a powerful message around the world. This could have great political impact in Western countries and in the international negotiations on climate change.

National strategies for sustainable development – translating international discourse to local realities

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The international discourse on sustainable development has matured over the past 20 years and taken on myopia of different forms and interpretations. A core requirement of the Rio Agenda is the development of national strategies for sustainable development. While industrialised countries have in many cases undertaken the effort of designing comprehensive strategies to guide sustainable development at the national level, middle-income countries and particularly developing nations struggle even with the process requirements of designing such strategies. This paper aims to shed light on several aspects of the uptake of the sustainable development discourse in middle-income and developing countries. Comparing the situation in South Africa and
Kenya, challenges, stumbling blocks as well as favouring conditions for the acceptance of international sustainability discourses into national policy frameworks are identified. Specifically, the analysis assesses the impact of international norms on national policies in the areas of environmental and social protection. Since not only governmental but also non-governmental actors are receptive to the international sustainability discourse, the analysis is augmented by taking into account the contribution and transformative power of other societal actors. The findings demonstrate that non-governmental in fact support transformative processes towards adopting sustainability policies. Similarly conducive are international capacity-building and facilitation efforts. The eventual adoption however depends on the willingness and capacity of national government actors.

**Climate Change Discourses in International Development Cooperation**

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The dominant international discourse on climate change portrays the issue as an apocalyptic threat that can only be addressed by concerted global effort and large-scale management. However, this discourse is under constant negotiation and is challenged by alternative discourses. I am interested in the material effects of climate discourses as they are translated into policies and then implemented.

My research field is international development cooperation. I am going to study Sida, the Swedish International Development Cooperation Agency. Sida’s priorities and activities are determined by the Swedish government, which has increasingly recognized climate change as a crucial factor to consider in development cooperation. Environment and climate is among Sida’s three thematic priorities. A new policy on environment and climate for
development cooperation is currently being formulated by the
government in dialogue with Sida. I want to follow this policy from
its formulation and through implementation. What discourses
influence policymaking? How is the policy interpreted by Sida staff
members? Are there alternative discourses among the staff that
affect implementation?
The Sida office in La Paz, Bolivia, will be a particularly interesting
research unit. In Bolivia, climate change is gaining increasing
attention as an urgent development issue and there is a strong
local climate discourse. Through interviews and observations, I
want to explore how Sida staff in Bolivia interpret and implement
policies on climate and whether these processes may be influenced
by alternative discourses.
A point of departure is the power dimension of discourses and
policies. I want to frame policymaking as a political issue and
regard policies as instruments of power through their normative
functions and their real and material effects. I intend to employ an
intersectional theoretical perspective to explore how complex
power dynamics based on gender, ethnicity, class, age and other
factors come into play in climate and development discourses.
**Comparing Nations’ Environmental and Climate Policy Performance – The Need for Better Concepts**

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Can we explain the differences in nation-states’ climate policy performance with the tools of comparative environmental policy research? In spite of a growing body of research on environmental policy outcomes there is a lack of comparative studies explicitly investigating nation-states’ climate policy performance. Although this is in part due to the problem of data disposability the main reason for this gap – to me – seems to be a conceptual one: most comparative studies on environmental policy performance do not differentiate between environmental and climate policy performance when, for example, Jahn (1998) and Jahn/Wälti (2007) include indicators for climate policy performance into an overall environmental performance index. Moreover, most studies base (part of) their hypotheses on well-established schools of comparative policy research, i.e. they employ assumptions about the ability of institutions (e.g. neo-corporatism, federalism, consensus and majoritarian democracies) to solve societal problems. Yet, by ignoring the fundamental difference between classical environmental problems such as clean air or water and new environmental problems such as climate change part of their hypotheses seem to be misspecified. Whereas climate change needs to be tackled by altering the ways of living and ways of
production most classical environmental problems can be dealt with end-of-pipe technologies and solutions. This far greater potential for conflict of climate change policies has to be taken into consideration when formulating hypotheses about the ability of institutions to solve these problems. Against this background there seems to be a need to further investigate the differences in climate policy performance.

This paper aims at reviewing existing comparative research on environmental policy performance according to the outlined line of argumentation and wants to propose conceptual guidelines for developing hypotheses explaining nation-states’ climate policy performance.

Comparing National Socio-Political Reactions to Climate Change

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Until now, the search for conditions conducive to global climate change agreements has focused on institutions, on finding the right sets of rules and policies (i.e. Cap and Trade, CDM, etc.) However, ideal institutions alone will not provide the solution. The effective adoption and operation of institutions depends on the level of urgency and activation of relevant actors. The paper reports on an international research project studying the causes of climate change belief, urgency, activation and effective mitigation in different societies. Research teams in 15 countries and at the international level collect comparable data on national climate change discourse, action and policy formation. Interim stage data include the content analysis of newspaper and legislative records, in-depth interviews and a survey of organizations involved in climate change issues. The survey will gather information on inter-organizational networks carrying information and forming
coalitions. In particular, we are interested in how different national organizational fields receive, frame, transmit and (dis)empower the scientific information coming from a common global source, the Intergovernmental Panel on Climate Change (IPCC). Our analyses will test hypotheses about the major factors that impede or enhance the capacities of societies to effectively mobilize to meet the challenge of climate change mitigation. Examples: Hypotheses 1) venues for stakeholder participation and negotiation will improve general acceptance and urgency of IPCC science and expand advocacy coalitions for effective mitigation; 2) legitimacy of domestic climatology will increase same; 3) strength of fossil-fuel dependent interest groups will decrease same. This interim report uses early available comparative data -- changing levels of media attention to climate change since 1997, media framing of climate change, the main issues in major public debates and issues about climate change and the groupings of organizational actors that support different frames -- to conduct tentative tests of the hypotheses.

**Governance of Systemic Risks**

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In general terms risk governance refers to the necessity of innovative processes of cooperation and coordination that transcend the limits of the traditional hierarchic forms of intervention and that promote new (institutional) procedures for the definition and regulation of risks. This necessity mainly originates from the fact that the risks modern societies produce can no longer be confined to processes or events in one risk producing social, technical or natural (sub-)system alone. Rather the increasing interconnectedness of functional systems in globalised societies makes it likely that risks spread throughout
these systems. For these systemic risks (SR) traditional risk analysis and management, however, are likely to fail, because they handle negative impacts for humans and the environment in the respective system boundaries.

But how do these innovative processes of cooperation and coordination for the governance of SR have to look like and how can they be put into place for a specific case and under specific societal and political conditions? These questions will be discussed on the empirical basis of two SR case studies (pharmaceutical residues in drinking water and endocrine disrupting plant protection products). Our research allows insights into procedural issues that consider e.g. the interplay and renewal of organisations and their specific institutions, the plurality and contestation of knowledge, transparency of knowledge organisation and assessment (fit between knowledge and problem) and also into legitimacy in multi-level collaborative networks and limits of self-organisation in participatory processes. We conclude by justifying the hypothesis that the governance of SR requires increased organisational and institutional flexibility and a recurring cycle of risk analysis and problem handling.

**Strategic change in organisations and governance systems in response to climate change as wicked problem: Framing a comparative research agenda**

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In this paper, I seek to provide a conceptual framework for a comparative research agenda to better understand the way in which the inter-relationships between private and public sector organisations and governance systems shape the manner in which effective context-specific responses to climate change are possible. I argue that our current understanding of mitigation and
adaptation efforts, specifically motivations thereof, is constrained by the predominant focus on particular aspects of the inter-relationship between organisations and their context, and that much is to be gained by developing and applying a holistic model of such interactions, which integrates a range of important theoretical perspectives from different disciplines.

This paper thus draws these various disciplinary and theoretical perspectives into an integrated conception of how organisations and governance systems change in an inter-related manner. It argues that such an integrated model offers greater currency in our quest to devise improved policy options at organisational and state levels in developed and developing country contexts.

**Exploration of the underlying factors affecting the use of CDM: A comparative analysis of CDM in South Africa and China**

*John Fay, Farai Kapfudzaruwa, Lin Na*

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Both South Africa and China are emergent economies heavily dependent on fossil-fuel based energy sources, and the potential to leverage the Clean Development Mechanism (CDM) is significant in both countries. However, experience to date with CDM indicates South Africa has significantly lagged behind China in the uptake of the CDM, accounting for only 0.9% of the worldwide registered annual Certified Emission Reductions (CERs) while China has dominated the market, generating over 54% of the annual worldwide CERs. Thus, an opportunity exists to redefine the role of CDM in South Africa to better incentivise a lower carbon development trajectory. This paper provides a comparative analysis of the CDM experience in China and South Africa in order to identify the underlying drivers and obstacles to CDM in both countries. It is the authors’ objective to analyse the lessons learnt from market-leading China and laggard South Africa to better
understand the structures and policies necessary within host CDM countries to unlock the potential of CDM in a post 2012 regime.
A constructivist analysis linking norm diffusion to policy networks

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Environment encompasses different constructions of ‘nature’, ‘economy’ and ‘livelihood’ that contain tensions between different sets of social or ethical concerns, economic or political preferences, scientific and technological systems, traditions and knowledge. Environment policy, therefore, becomes an important space where the competing dynamics of these processes are revealed. Using the constructivist approach, this literature review identifies and analyzes particular variables that influence policy formulation in the context on India’s two policies – National Biodiversity Strategy Action Plan and the Forest Rights Act. The dependent model of the overall analytical framework is to explain participatory policy formulation with regard to specific policies and the goal achievement of the actors involved. The purview of this paper is to identify the mechanisms of influence that explain a distinct process of policy formulation. These mechanisms of influence are identified, first as norm diffusion through regimes - specifically the role of policy entrepreneurs and framing exercises,
cultural and institutional structures-, second as domestic actors within the Advocacy Coalition Framework. The identified variables are validated both by expert interviews with key researchers and policy makers and analysis of documentation resulting from the process which include policy documents, discussion papers and newspaper articles. These are linked to capture the dynamic movement and interpretation of ideas between the international and domestic spheres. This paper provides the theoretical grounding backed by initial results from the field to elucidate how policy processes have to be constructed in certain ways and are influenced both by the international context and ideational components of domestic policy networks.

Regulatory co-production and legitimacy: carbon and sustainability reporting under UK biofuel certification regulations

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Biofuel policy has become highly contentious in Europe, driven by the Biofuels Directive (2003/30/EC), which requires that “biofuels or other renewable fuels” constitute 5.75% of the energy content of petrol and diesel sold for transport in member states by 2010. Here we examine the environmental and social sustainability components of the expression of this directive in UK law via the 2008 UK Renewable Transport Fuel Obligation (RTFO). We find that commercial and energy security priorities have dominated the design of carbon and sustainability performance management under the RTFO. As an environmental management tool, the RTFO is exceptionally weak, being a reporting standard rather than a performance or design standard. While it will in some ways be strengthened by the Renewable Energy Directive (RED), significant concerns remain in relation to the sourcing of biomass
for energy under the RED. RTFO certification is of a meta-type, being built upon existing certification and labelling schemes (e.g. the Roundtable on Responsible Soy, Forest Stewardship Council, Roundtable on Sustainable Palm Oil and others), all of which are more or less contested by NGOs. Yet despite claiming legitimacy from these non-state initiatives, the serious concerns of environment and development NGOs have been largely ignored in regulatory terms. We draw on documentary evidence, interviews and the science in policy literature, notably ideas on regulatory co-production and post-normal science, as well as concepts of regulatory and market legitimacy, to suggest that until critical voices are given a stronger expression in UK and EC biofuel policy, biofuel policy cannot be said to have achieved a social mandate or a durable legitimacy.

**The Extinction Crisis and Democratic Theory**

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I argue that the current extinction crisis offers profound and unprecedented challenges to democratic theory. Other environmental problems, such as climate change, are fundamentally collective action problems of a familiar type. By contrast, the case of extinction has several unique implications for democratic theory. First, for fragile species whose medium term preservation is technically possible, democratic policy flux over time effectively reduces the scope of policy choice to one—extinction. This is the case because the normal policy flux that follows from alternation in power will drive a ratchet effect in which each win for the development side is permanent, while each win for the preservation side is temporary. Second, uncertainty about the value of endangered species, even considered from the point of view of the narrowest market-driven utilitarianism, calls
into question the democratic legitimacy of policies allowing potentially essential species to go extinct. Such policies reduce the scope of future democratic decision-making irreversibly. This presents a paradox for democratic theory, since decisions that do not undermine democracy itself should always in principle be available for democratic decisionmaking. Third, beyond questions of democratic scope, the on-the-ground rulemaking processes in the case of species preservation policy exhibit possibly unique rhetorics of collective incapacity that undermine political agency at nearly every stage of decision. Fourth and finally, extinctions, even technically preventable extinctions, present a possible limit case to democratic politics: democratic polities find themselves constitutionally unable to achieve the policies that democratic theory suggests they should consider.

Methodological note: this is a work of political theory, but it is based on both philosophical and empirical research. As part of my current book project, I am conducting case studies and a general survey of habitat conservation plans (HCPs) in the United States, to determine how these democratic dynamics are exhibited in practice.
In the face of stress, vulnerable households employ migration as one of a variety of tools to reduce the impacts of risks on overall household stability. Yet we know little about how social factors affect the ability of a household to use migration as a risk management tool. Changes in human-ecological systems, and the greater frequency and intensity of climate-related covariate shocks stress entire communities. These changes may overwhelm the set of in situ coping mechanisms available in areas facing extreme environmental changes.

The proposed paper will clarify differences between current migration patterns and those that could emerge in the future, and the role of intervening social variables. Environmental changes are one of many factors which shape the context within which migration and other risk management decisions occur. The combination of environmental, social, and economic variables may create particular patterns in the future that complement but become distinct from current rural-urban trends in human mobility. In the near term, households or communities could identify tipping points beyond which the full range of current risk management approaches, including cyclical and seasonal migration, start breaking down.
Social factors play a role in household decisions about who migrates, and who stays behind. In Africa, a majority of smallholder farmers are women; failing agriculture thus has the potential to exacerbate social inequalities especially those pertaining to gender because most women are getting poorer vis-à-vis men. National [and regional] policies and institutional forms of adaptation, food security and social protection, which are effective, well targeted and resourced, will be essential, especially for the most vulnerable populations.

**Migration doesn’t have to be a failure of adaptation. An escape from environmental determinism.**

**Francois Gemenne**
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Massive population displacements are now regularly forecasted as one of the most dramatic possible consequences of climate change. Recent empirical studies, such as the EACH-FOR project (www.each-for.eu), have shown that environmental factors were increasingly important drivers of migration movements, both forced and voluntary.

The dominant perspective on the issue, however, is rooted in environmental determinism: migration is conceived as a threat to human security, the only choice left when all other adaptation strategies have failed. Environmental ‘refugees’ are depicted as the expiatory victims of climate change, subjects of a humanitarian catastrophe in the making.

Empirical studies, however, reveal a different picture, where migration becomes an adaptation strategy for those who are affected by the impacts of climate change. Yet mobility often remains a luxury, unavailable for those who cannot afford to migrate. Hence the most vulnerable are often stuck in places heavily impacted by climate change, unable to seek higher grounds and a better life.
Building on case-studies conducted in Central Asia and Asia-Pacific within the framework of the EACH-FOR project, this paper refutes the dominant deterministic perspective and adopts a constructivist approach. It shows how policy responses to climate change impacts affect people’s ability to migrate, and why these policy responses often matter more than the very impacts of climate change in their migration decision. Considering that migration can improve human security rather than hinder it, the paper makes the case for migration policies to be part of adaptation plans. In that regard, a key political challenge will be the restoration of the right to mobility for the most vulnerable, in order to enable their human security.

Protecting environmental migrants: recent findings from the UNU-EHS Summer Academy.

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In July 2010, the UNU-EHS (UN University – Institute for the Environment and Human Security) organized a one week Summer Academy on environmental migration, during which twenty PhD researchers and experts from academia and international organizations met in Munich and discussed the problem of environmentally forced migration from a protection perspective. The aim of the week was to develop policy recommendations based on intensive debates. These policy recommendations will be used by the UNU-EHS in its activities in the context of the ongoing climate negotiations. This paper gives an overview of the findings of the Summer Academy, in which the author participated.
Climate-related migration as a security risk? The different routes of framing and its implications for governance

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The issue of climate-related migration has gradually been portrayed as one of the key challenges of global warming potentially threatening international peace and security. Such an alarmist perspective can for instance be traced in a recent report released by the European Commission, or in the long-term defence planning of some industrialised countries, such as the United Kingdom. Yet, in political debates one can also find a more sceptical perspective towards climate-related migration. It adopts a more holistic viewpoint and directs its attention to the multicausality of the problem and to vulnerable communities in the South. Activities in this field are for instance predominantly undertaken by nongovernmental organisations (NGOs) and intergovernmental organisations (IGOs) in the field of migration and refugee governance. However, some of these actors increasingly adopt the alarmist perspective.

In this paper I discuss the different ways in which climate-related migration is being portrayed as a security issue. I assume that the developments described above reside within in two discourses: the ‘climate security’ discourse and the ‘environmental security’ discourse, each having versions representing an alarmist and a sceptical perspective. I examine how these framing processes may trigger different types of governance mechanisms and strategies executed both by state and non-state actors. It may for instance allow for the development of exceptional and confrontational measures, while it may also stimulate new types of security practices, like ones focusing on preventive action or risk management.

The focus lies on the manner in which political elites securitise
climate-related migration. The analysis is in particular directed to perspectives present within the United Kingdom, the European Union, the African Region, the United Nations High Commissioner for Refugees and prominent NGOs (e.g. Norwegian Refugee Council).

Side-lining Technologies for Adaptation to Climate Change: A Distributional Effect of Global Climate Governance

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The paper seeks to explain a major inconsistency of global climate governance: while directly linked to two major pillars of the Bali Action Plan – adaptation and technology – the development and transfer of adaptation technologies (e.g. information systems, irrigation equipments, crop varieties) only play a secondary role in negotiations under the climate convention. Likewise, adaptation technologies take a back seat in other international arenas such as the WTO and new technology partnerships (e.g. the Asia-Pacific Partnership or the Major Economies Forum). Based on institutionalist theories, the paper argues that one reason for this imbalance is the constellation of interests among powerful countries. Some common ground has emerged among industrialized countries and leading developing countries (such as Brazil, China or India) who share an interest in technology cooperation for low-carbon development. For mitigation
technologies, the growth rates, mitigation potentials and enabling environments of major developing countries promise considerable investment returns. Moreover, the bulk of funding for mitigation technologies comes from private sources. On the other hand, negotiators from industrialized countries are much more reluctant to address adaptation technologies. The necessary funding processes would hardly yield significant investment returns and hence require a much bigger role of public donors. The global financial crisis provides additional motivation for donors to concentrate on low-carbon development while further side-lining the issue of adaptation technologies and the associated interests of least developed countries. By scrutinizing this imbalance and the distributional effects of a particular strand of environmental governance, the paper seeks to contribute to the conference theme of ‘justice, equity and distribution’. In order to tackle this imbalance, mitigation and adaptation technologies should be addressed in a common framework under a future climate governance architecture. This framework would need to build on cross-institutional guidelines and a meaningful division of labour between UNFCCC bodies and external technology agreements.

Finding the social, economic and technological barriers and opportunities in the developing countries for designing the technology transfer and innovation regime in climate change

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This paper addresses the social, economic and technological barriers and opportunities in the developing countries for designing the technology transfer and innovation regime in climate change. The author identifies the barriers and opportunities through case studies in India, Thailand and China. The author also overviews previous research on the subject and suggests social, economic and
technological issues that needs to be incorporated in designing the technology transfer and innovation regime.
Technology transfer and innovation is a central issue in climate change negotiations. The parties agreed to establish the “Technology mechanism” in the Copenhagen Accord and the Expert Group on Technology Transfer (EGTT) is working to produce a recommendation on the institutional design. However, no concrete proposals have been put forward yet partly due to the lack of understanding of the issue and partly due to the lack of research demonstrating the unique barriers and opportunities in the developing countries.

The paper highlights several issues that the author came to recognize through case studies. One issue relates to the fact that there are different social expectations for technology transfer and innovation. Some countries are willing to invite “technology transfer” and successfully adopt technologies in operation, while some countries tend to focus on “technology innovation”. One needs to incorporate the different social expectations and needs to design multilateral projects and programs to diffuse or develop technologies to reduce greenhouse gas emissions. Another issue to discuss is the different concepts and levels of technology transfer. In some cases, technology transfers are not successful in the operational phase of the technologies due to the social, economic and technologies barriers. The author also emphasizes the opportunity side in the paper that there are also social, economic and technological conditions to bring leapfrogging technologies to reduce greenhouse gas emissions in the developing countries.
Technology Transfer within the future UNFCCC framework – a new look at institutional design

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Industrialized countries continue to play the major role in combating climate change, but for combating climate change effectively emerging economies will also have to step in with major cutbacks of their emissions. A certain degree of climate change is already unavoidable. Especially Earth’s poorest countries will need to adapt. Both mitigation and adaptation will need significant transfers of technologies (TT).

An agreement for TT under the UNFCCC could not be reached in Copenhagen. The current negotiating text could be improved significantly to make TT under the UNFCCC as efficient as possible.

In order to compare proposals for a future framework, a set of hypotheses is developed. Drawing from Mitchell’s deliberations on the structure of problems and the rational design framework of Koremenos, Lipson and Snidal, these hypotheses serve to make theoretical prescriptions for an institutional design with maximum problem-solving capacity.

These hypotheses are tested using the Montreal Protocol as a reference for an effective design both for a global atmospherical problem and successful TT.

They are then used to develop aspects of a theoretical institution for TT from the problem structure of the climate and TT problem.

Five options for the institutional design of a UNFCCC technology regime, from civil society, science and states, are analysed using the theoretical aspects as a reference. Strengths and shortfalls of the different designs are shown. With these in mind, the current negotiating text for TT under the UNFCCC is analysed. Improvements are suggested for the framework to have the potential for maximum problem-solving capacity.
The design of the institution cannot guarantee that it will work effectively in practice. But a strong design gives it more potential to do so. So far, theoretical work on prescriptive institutional design has been scarce in the international field. This research attempts to fill that gap.

**Technology Transfer through Water Partnerships: A Radical Framework of Assessment**

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Partnerships for sustainable development have become the official UN instruments to achieve the Millennium Development Goals. Among those working on water and sanitation, many focus on technology transfer projects. Transferred technologies are seen as tools not only to combat water scarcity or poor sanitary conditions, but also to alleviate poverty, ensure gender equality, improve health and environment. Yet, technological improvements cannot fulfill all these functions on their own. Thus, technologies that provide quick and easy access to water are not necessarily the most suitable ones for sustainable development of receiving communities. Indeed, a number of such projects fail at getting community support or ensuring their use of the water provided. In these cases, improvements in water access remain insubstantial, intentions of poverty alleviation are frustrated, and the technology ultimately faces rejection. To avoid such results, assessment of water partnerships and technologies should not be solely based on efficiency calculations but also take social implications into consideration.

To do this, we suggest a technology assessment framework based on the social critiques of Science and Technology Studies (STS) and Ivan Illich. While STS provides numerous conceptual tools to reconsider technology in general, Illich's concept of institutional spectrum is instrumental to examine the societal impact of
particular technologies. Building on these two sources, our framework examines various contrasting characteristics that influence a technology’s social acceptability and desirability, especially from the perspective of the receiving communities. Hence, this framework creates a scale to assess whether a technology preserves the autonomy, flexibility and self-reliance of a community or has predominantly manipulative and monopolistic tendencies that induce dependence. This framework is then applied to the technologies transferred by water partnerships registered with the UN Commission on Sustainable Development.

D4: International Justice/ Distribution

Time: Saturday, 09/10/2010: 9:00am - 10:30am
Chair: N.N.

Reconciling goal attainment and distributive justice in global environmental governance. Towards a more comprehensive model of effectiveness

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Most (global) environmental governance arrangements face a potential trade-off between attaining their goals in terms of environmental improvement and the just distribution of their social costs and benefits. Yet, just as mitigation of ecological problems is a core requirement for any environmental governance scheme, schemes that do not take distributional questions into account are fundamentally flawed from a normative perspective. So far, however, these two objectives have by and large been analysed separately: On the one hand, there is a vast amount of studies which apply different indicators of effectiveness to assess
the potential contribution of different governance arrangements to improving particular environmental problems. On the other hand, there is a growing, yet mostly theoretical, research interest in the just distribution of costs and benefits from environmental measures.

The contribution of this paper is to bring these two strands of research closer together by including the dimension of distributive justice in a more comprehensive model of effectiveness. In terms of environmental improvements the model employs goal attainment as the benchmark indicator. Thus it recognizes that goals are socially set and that they may be changed over time as most environmental problems are so enduring that they can only be mitigated in a continuous process. Regarding distributive justice, the paper draws on normative theorists such as Rawls and Sen to derive criteria for the just distribution of costs and benefits from environmental policy measures. The overall model of effectiveness may then lay out minimum requirements for goal attainment and distributive justice. Where both these thresholds are met one could speak of comprehensive effectiveness. Finally, the paper will provide hints how this notion of effectiveness may be operationalised for empirical research.

Global injustices in policies on climate, food and health: shifting or sharing burdens and benefits

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We propose that global policies on climate change, health and agriculture aiming at food security, poverty reduction, alleviation of high burdens of disease and adaptation to climate impacts, seem to be shifting away from prioritising global public goods in favour of private corporate goods. Based on this, we formulate two questions. Firstly, do global development policies emerge if, and only if, there are clearly defined corporate beneficiaries who can
reap the benefits from policy implementation? Secondly, what are the implications of such a policy shift for people who live in poverty and are in greatest need of supporting policies?

Three issues serve as a clarification of the proposition. In global health policies there has been a shift from comprehensive care for all people towards technological fixes for a few selected diseases. In global agricultural policies there is a strong focus on promoting modern technologies such as improved seeds and fertilizers instead of proven low technology practices such as mulch, manure and intercropping. In the Clean Development Mechanism (CDM) there is a strong asymmetry in how global and local benefits are appreciated and determined. The global benefits from CDM projects, in terms of emission reductions and the resulting financial rewards, are thoroughly monitored and verified by third parties whereas the formal requirements on local benefits for people who are poor are weak or nonexistent.

Drawing on the concepts of power in transition theory, we intend to explore the asymmetries between private and public actors in the mentioned policy fields. In so doing, one fundamental aspect is to investigate ‘who has the ability (skill/willingness) to mobilise resources for what purpose and for whose benefit’ in the context of food insecurity, disease burden and climate vulnerability.

**Climate change mitigation policies and social justice in Europe: developing a framework for assessment**

**Tom Bauler**

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A growing literature base is addressing issues related to the impacts of environmental policies beyond their immediate policy objectives, including social impacts developing from economic dynamics on competitiveness and employment. Specific attempts to account for the implications of climate change mitigation policies (CCMP) on a wider understanding of social impacts remain
however scarce. The present paper discusses the development of an integrative evaluation scheme which aims to set a workable framework for the assessment of CCMP in terms of their impact on vulnerable people by using an encompassing, theory-inspired conceptualisation of social justice. Taking a wider, theory-grounded perspective – informed by an understanding of human welfare in terms of capabilities (Sen 2009) - allows to shift attention from the prominent direct and indirect income effects of CCMP and re-focus onto people’s opportunities to pursue a life they value.

The framework was initially developed in the context of a discussion paper (Schiellerup et al. 2009), nourishing a European stakeholder process directed towards thinking collectively about the linkages between CCMP and social justice. It develops 4 families of criteria:

Distributional justice: social inequalities stemming from unequal distribution of goods, services, employment...

Fair access: inequalities linked to unequal access to conditions which improve peoples’ capacities to enhance their wellbeing.

Environmental justice: inequalities originating from differentiated costs, opportunities and environmental effects of CCMP.

Intra- and inter-generational justice: Inequalities linked to diminished opportunities for people outside EU and for future generations to live a valuable life.

The paper presents the empirical and conceptual grounds which let to the configuration of the framework, shows how it was applied to the assessment of a selection of European CCMP and closes with a critical discussion of its usability in the context of the governance of climate change.
International agreements and activities of international organizations have led to an increase of national policies for the mitigation of climate change. The selection and analysis of policy instruments are mainly oriented at their technical effectiveness and financial feasibility, while their social sustainability plays a minor role. As a consequence, the impact of climate policies on individuals’ life situation is largely unknown even though the design of these policies suggests effects on national and international patterns of income inequality. Focusing on the main areas of climate policies, this paper investigates how national climate policy strategies on housing and transport affect individual income inequality within nation states.

It is argued that the effect of climate policy on income inequality depends both on the specific design of these policies and on the national context, particularly the existing welfare state arrangement. Market-based solutions of energy efficient housing insulation, for example, focus more on effectiveness and less on social inequality. In contrast, financial benefits from regulatory climate policies like eco-taxes on fuel can be configured as an instrument for income redistribution. The welfare state as a contextual factor plays a dual role in this relationship. First, welfare states striving towards income equality are more likely to consider potential effects on inequality levels in their formulation of climate policies than welfare states oriented at means-testing. Second, national social policy arrangements moderate the effect of climate policies on income inequality.

This paper sets a link between environmental politics and welfare state research in a multi-level approach focusing on both national
and individual income inequality patterns. The analysis is based on data from the Luxemburg Income Study which is combined with welfare state characteristics and indicators on national and international climate policy instruments in the field of housing and transport.

D5: Financing Adaptation
Time: Saturday, 09/10/2010: 9:00am - 10:30am
Chair: Veronika Huber, Potsdam Institute for Climate Impact Research (PIK)

Constructing a fair approach to global climate finance: how should we take account of divergent perceptions of fairness in negotiations?

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The 2009 Copenhagen Climate Conference highlighted the continuing challenge of reconciling developed and developing countries’ divergent perceptions about what a fair global climate agreement could look like. A major task for the field of climate ethics is to present a vision of fairness in climate policy that not only has ethical integrity but is practically feasible. However, to date the field has largely not engaged substantively with perceptions of fairness held by participants and stakeholders in climate negotiations. Some theorists have voiced legitimate concerns that relying unduly on stakeholder perceptions may result in theories of fairness whose horizons are limited by political compromise. I will argue that if we are concerned about theory-building as a means of advancing fairness in climate policy, we
must take seriously (if not uncritically accept) existing perceptions of fairness. Empirical analysis of those perceptions may play an important role in clarifying the values at stake for different parties and identifying politically feasible steps towards a more thoroughly fair climate regime.

I will illustrate the value of this approach with reference to two principles for determining countries’ liability to contribute to international climate finance. First, I argue that divergent views about the role of historical responsibility (ranging between liability for all historical emissions and only prospective liability) could be reconciled in a principled way by limiting liability to emissions that foreseeably and avoidably contribute to climate change. Second, while the current listing of ‘developed’ (Annex I) and ‘developing’ (non-Annex 1) countries does not distinguish categories of liability in a way that is sufficiently meaningful in ethical terms, theorists need to take seriously the concerns of developing countries about abandoning such a distinction altogether. A fair and politically feasible division could be reached through incremental steps towards more nuanced and objectively based differentiation of capability and responsibility.

**Inventing a capital-flow-based emission control mechanism**

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‘Capital-flow-based emission control mechanism’ is my on-going individual research. In the research, I manage to introduce a new approach to emission control, or CO2 offsetting, by looking into flows in and out of capital accounts of different populations on the principle that there are populations emitting more than others. My view is similar to that of Thomas L. Friedman about “bad lenders” and “bad borrowers” in The Lexus and The Oliver Tree (2000) in
that “the two biggest threats of today’s global financial system — [financial crises] trigged by “bad lenders” and [political crises] trigged by “bad borrowers.” Likewise, among biggest threats to today’s global environmental system are crises trigged by “bad spenders,” who make the most emission out of their money, and “bad producers.” While most carbon reduction regulations are trying to deal with the “bad producers,” my idea is to tackle the “bad spenders.” By identifying the businesses that make happen the capital flow to and from the bad spenders’ accounts, customer focus (business’s factor) and investment focus (market’s factor) can be shifted accordingly to make the system less susceptible to bad spending. In this paper, I am going to reproduce the research idea, then foresee how its results can serve as a basis for decision-making in businesses to comply with emission control. If this concept is recognized worldwide, and a new mechanism is ratified where certain businesses are promoted to maximize the outflow and minimize the inflow of bad spenders, a whole new range of projects and businesses can be labeled as indirectly contributing to emission control, especially in developing countries where the people need to buy the patience needed for technology transfer processes.

Equity in the financing of adaptation: a perspective from distributive justice

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Most observers agree that equity is an essential condition for a new international agreement on climate change. However, equity is an equivocal concept, and different interpretations of equity clash with each other. Though equity concerns have been placed at the core of negotiations on mitigation efforts, they have been little addressed in the discussions on adaptation. As a result of this, the criteria that will be used to allocate the adaptation funding remain unclear and vague, which is detrimental for the negotiation process
as a whole. This paper aims to offer a new perspective on this issue, departing from the traditional perspective inspired by retributive justice.

With regard to adaptation, who owns what to whom? Two different possible answers can be provided to this question. The first answer derives from retributive justice, which is the perspective on justice most commonly referred to in Western countries. The concept of ‘climate debt’, put forward by campaigners for climate justice, derives from this perspective. A strict application of retributive justice to adaptation would imply that the countries with the greatest responsibility in global warming would transfer funds to compensate for the damages they have caused in countries that bear the least responsibility for these damages, and are the first and most affected.

Yet this paper aims to show the practical problems that would arise from an application of retributive justice to adaptation, and makes the case for a perspective inspired by distributive justice. Unlike retributive justice, distributive justice is not concerned with the identification of responsibilities, but rather with the equalisation of resources and benefits, according to the needs and capacities of each party. The paper also seeks to identify the political and practical obstacles in the implementation of distributive justice, and suggests some options to overcome these obstacles.

**Operationalising the Adaptation Fund: challenges in allocating funds to the vulnerable**

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The Adaptation Fund of the Kyoto Protocol marks a change in the international climate change financing architecture due to its independence from official development assistance, direct access and the majority of developing countries in governance. A major
goal of the Adaptation Fund is to finance concrete adaptation projects and programmes in developing countries that are particularly vulnerable to the effects of climate change. The analysis looks at the results of operationalisation of the fund that took place throughout 2008, 2009 and 2010, and the way it considers vulnerability in the allocation of funds. The definition of ‘vulnerability’ remains broad and does currently not allow for a prioritization in the allocation of funds. Criteria like ‘level of vulnerability’ or ‘adaptive capacity’ still need to be specified. The Adaptation Fund Board’s possibilities to implement a vulnerability oriented funding approach are limited by the legal basis of the UNFCCC and the principle of a country-driven approach. The effective support of vulnerable communities foremost depends on the institutional capacities and the institutional arrangement at the national level and the quality of analysis adaptation projects and programmes are based on.

**Effective Financing Systems for Climate Change Adaptation**

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This research explores financing systems that are effective at promoting climate change adaptation activities in developing countries, through case studies of Samoa, Tuvalu, and Vietnam, three developing countries that are vulnerable to climate change. A new analytical framework and indicators are applied to evaluate the effectiveness and performance of existing financing systems for adaptation, classified into two major financing sources (the Global Environmental Facility and the bilateral Official Development Assistance) and three different financing targets (regional, national, and local actors). The analytical framework and indicators are created based on studies of environmental institutional
effectiveness and performance in the field of international politics and aid effectiveness and performance in the field of development financing, and they consist of evaluating the following: (1) institutional effectiveness; and (2) their flexibility, adequacy, cost-effectiveness, chain of accountability and sustainability.

The results of analysis shows that effective combinations of donors and recipients to promote adaptation are different among developing countries, and that it is important to fully take into account the domestic situation of each developing country in financing adaptation. This research highlights the fact that future financing systems for adaptation, which finances adaptation activities in developing countries in an effective and optimally-performing way, needs to be developed based on the best match between (1) the needs and national situations of developing countries (e.g., capability of accessing funds and implementing adaptation), and (2) the characteristics of financing systems with different financing sources and targets.

In addition, this research shows not only the applicability of the theories of the fields of international politics and development financing in evaluating environmental financing systems (financing systems for adaptation), but also the limitations. The two research fields could make up for each limitation, the developmental and environmental elements, and develop the research fields and the study of environmental financing systems.
Democratic Deliberation and the Normative Dimensions of Environmental Change: Mapping and Developing Consensus for Governance

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The linkages among society and the environment generate normative challenges across at least three distinct dimensions. First, environmental change imposes costs (both individual and collective) that fall disproportionately on various social groups, often those who have historically suffered from disadvantage and disenfranchisement. Second, the necessity to create institutional arrangements for managing environmental change and integrating those decisions with collective choices in other areas poses value-laden questions of policy design. Third, the human causes and consequences of environmental change and the collective choices they involve pit citizens and their understandings of the world against one another at the level of social action.

The task confronting environmental governance analysts in responding to these challenges is to describe accurately and progressively develop the normative, political, and social consensus necessary for managing society-environment linkages in ways that are both ecologically sustainable and democratically legitimate. The work of deliberative theory offers a coherent approach to this task when
Deliberative techniques are mapped onto these human dimensions of environmental change. Deliberative democrats analyze the issues of distributional justice and social equity by using hypothetical case scenarios in juristic modeling exercises to describe existing elements of normative consensus regarding general legal principles. They employ techniques of deliberative polling to measure support for alternative policy paradigms that institutionalize policy goals and objectives related to the society-environment linkage. And deliberative democrats promote stakeholder partnerships that allow contending local discourses regarding the implementation of environmental policies to be reconciled through the coproduction of regulatory programs and procedures. Mapping and specifying these approaches to developing normative consensus for governance (as represented in a 4 X 3 table which, unfortunately, we cannot attach or present here) is the objective of this paper.

The Dismantling of Environmental Policies in the USA: The Case of the New Source Review

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While processes of policy change have received great scholarly attention, policy dismantling as a specific type of change has not yet been thoroughly studied. This might be due to low empirical visibility. Although policy dismantling has been rare in environmental policy, it is getting more relevant as environmental legislation tightens and places increasing burdens on polluting industries. This got obvious in the United States during the Bush Presidency where several attempts to dismantle environmental programs occurred. In order to improve our understanding about the circumstances under which environmental policies get dismantled, we analyze the case of the New Source Review (NSR).
The NSR requires industries to install modern pollution control technologies in stationary sources of air pollution like coal fired power plants and refineries. NSR regulatory provisions require these sources to install pollution control when they expand capacities and increase emission levels. Between 2001 and 2007 several attempts to weaken the regulatory stringency of this program occurred. The Bush Administration proposed both legislative and as rule changes which dismantled the regulatory stringency of the Clean Air Act.

The analysis of actors’ motivations to dismantle environmental regulations as well as institutional constraints limiting and/or impeding dismantling will improve our theoretical and empirical understanding of dismantling processes. By looking at NSR dismantling pressures and processes we examine under which conditions political actors engage in the dismantling of environmental policies and what factors influence the success of dismantling attempts.

The Legitimation of Radical Change

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In coping with climate change, governments – both at national and local levels – increasingly have to deal with radical change. This term refers to situations characterized by (i) a multidimensional concurrence of different types of changes (political, socio-economic, cultural, organizational, environmental), (ii) drastic (non-path dependent) alterations of public planning and spending priorities and (iii) a generalized perception of crisis and insecurity among stakeholders and civil societies.

The climate-related determinants of radical change are in principle well known by now, even though their concrete scope and impacts are still quite difficult to predict. They include issues of adaptation,
mitigation and integrated ecosystem management. However, research on the political capability of states to actually manage those changes has been rather limited so far. In particular, a basic coin of adaptability, sustainability and resilience, the legitimacy of political orders, has been largely neglected by the scientific debate. Legitimacy rests on the acknowledgment that a political order exists “rightfully” and that its exponents (the “government”) act in the common interest. It gives states the authority to formulate and implement binding decisions and helps them to mobilize societal resources to meet common challenges. Every political order designed to last in time engages in the strategic procurement of legitimacy, but there are different modalities of legitimation and individual political orders are characterized by a specific (but by no means inalterable) mix of modalities.

The proposed paper uses an analytical approach which identifies six modalities of legitimation. The concept will be applied to the political management of climate-related radical change. The main objective is to assess the capability of existing political orders to manage change from a common interest perspective, and the options to strengthen democratic legitimacy in the context of climate change.

**Responding to the social challenges of climate change: a deliberative democratic proposal**

**John Dryzek, Hayley Stevenson**
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Global climate change and governance will widely but unevenly impact people’s lives around the world. There is thus an urgent need to ensure that the people who will be affected by climate change itself, as well as by mitigation and adaptation measures, are appropriately represented in decision making processes. In short, there is an urgent need to democratise global climate governance.
But the absence of traditional liberal democratic mechanisms in the international system poses an obvious challenge to democratising global governance. A plausible alternative to the cosmopolitan ambition of importing the domestic democratic architecture to the international system is to enhance the deliberative capacity of existing governance arrangements. Deliberative governance arrangements offer perhaps the most promising opportunity for responding to the social challenges of global climate change and governance. The effective functioning of these arrangements depends crucially on vibrant public space being integrated into the deliberative system. Ideally, this space should be represented by a wide range of discourses and provide the conditions for a free exchange of ideas. Our purpose here is to assess how well the public space is fulfilling this function within the global deliberative system for governing climate change. In the first part of the paper we introduce the concept of a deliberative system and clarify the role of the public space within this system. In the second part of the paper we draw on interviews with civil society representatives, forum observations, and a comprehensive discourse analysis to assess the strengths and weaknesses of existing deliberation within the global public space and reflect on the opportunities for enhancing its capacity to respond to the social challenges of global climate change and governance.

Green and social? Social and green? Exploring the links of the welfare state/ green state debate in the non-OECD world

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James Meadowcraft has most prominently argued that many parallels exist between the historical development of the welfare state and current attempts to green states. His conceptual focus
has so far been the OECD world where the welfare state is to a large extent already well established and the green state can be understood as an “add-on”.

The paper will show that regarding the non-OECD world the green state will not be a follower of the welfare state but both have to develop at the same time and are thus mutually dependent on each other.

This proposition rests on three pillars, which will be explored in some detail within the paper: First, functional dependency. The literature on resilience against the worst impacts of environmental destruction shows that a minimum of secure livelihood is a necessary element. Second, internal push factors. In non-OECD countries the major political actors, in particular within civil society, who push for either a green or a social agenda also include elements of the other in their political efforts. Different from the OECD context, green and social are thus perceived as one political project from the very beginning. Third, external push factors. Major social development efforts from the outside like the Millennium Development Goals or environmental programs of the GEF or the World Bank all include social and green issues and thus treat them as mutually dependent without explicitly conceptualizing so. The paper will discuss all three factors and illustrate them with two preliminary case studies: Costa Rica as an example of a middle-income country and Liberia as an example of a low-income country.

D7:
Time: Saturday, 09/10/2010: 9:00am - 10:30am

- Canceled -
Future rice production in Ghana: Implications for food security in a changing climatic environment

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Rice is consumed in many households in Africa and is viewed as the crop that would reduce food insecurity. Production is however constrained by poor agronomic practices and uncertainty in weather conditions and climate change with significant implications on food security and social stability in the continent. This study was carried out to understand the influences of climate change and soil fertility management options on future rice yield to support Ghana’s food production. A simulation (using APSIM model) was done to view the potential impact of climate change on future rice in the volta region of Ghana. Climate scenarios from six regional climate models were used to drive the crop simulation model based on Intergovernmental Panel on Climate Change (IPCC) A2 emissions to explore future rice production in the near (2046-2065) and far (2081-2100) futures. The results provide a comprehensive insight to the potential impacts of climate change characterized by increasing temperatures and annual rainfall, and
decreasing solar radiation on rice yield under low and adequate nitrogen fertilizations. Adaptation strategies, food security and policy implications of climate change are discussed.

**Exploring human-environment interaction for water: What can be learned at the interface of scenario analysis, integrated modelling, and policy gaming?**

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To support strategic water management, a new scenario method is being developed to explore possible non-linear long-term developments of the coupled water-society system. This method entails a policy-game in which players compete over future water management policy. The game involves the formation and dynamical change of advocacy coalitions in which players holding similar perspectives on water management cooperate. Shifts in the positions and / or relative power of the various coalition perspectives - under various scenario drivers and shock events - are assumed representative for possible real-life future shifts of world view and management style at the societal level.

The game involves various modelling tools. Players interact with an integrated computer model of the water system, to explore the long-term impacts of various drivers, and the consequences of adopted management strategies. Furthermore, an analytical perspective mapping tool is used to visualise and quantify the development of the various coalition perspectives over time. This approach - combining scenario analysis, modelling, and policy gaming - aims to generate new insights in the dynamics of societal change. This may include a better understanding of its main drivers, and the assessment of thresholds (e.g. with respect to the level climate change) at which fundamental shifts (societal transitions) may occur.
In this paper, a short overview is presented of the state-of-the-art in exploring human-environment interaction in scenario analysis, integrated modelling, and policy gaming. It focuses on the weaknesses of, and possible synergies between, the various approaches. It presents the new scenario method, and results from an application to Dutch river management. Despite various challenges in combining the methodological approaches, we argue that the combination of scenario analysis, integrated modelling, and policy gaming leads to relevant new insights to support sustainable water management.

**Water Scenarios for the Zambezi River Basin, 2000 – 2050**

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Consumptive water use in the Zambezi river basin (ZRB), one of the largest freshwater catchments in Africa and worldwide, is currently around 15-20% of total runoff. This suggests many development possibilities, particularly for irrigated agriculture and hydropower production. Development plans of the riparian countries indicate that consumptive water use might increase up to 40% of total runoff already by 2025. We have constructed a rainfall–runoff model for the ZRB that is calibrated on the best available runoff data for the basin. We then feed a wide range of water demand drivers as well as climate change predictions into the model and assess their implications for runoff at key points in the water catchment. The results show that, in the absence of effective international cooperation on water allocation issues, population and economic growth, expansion of irrigated agriculture, and water transfers, combined with climatic changes are likely to have very important transboundary impacts. In particular, such impacts involve drastically reduced runoff in the dry season and changing shares of ZRB countries in runoff and
water demand. These results imply that allocation rules should be set up within the next few years before serious international conflicts over sharing the Zambezi’s waters arise.

**Climate Change and the Public Sphere: Mapping individual responses to Australia climate change scenarios and the limits of social adaptation**

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How individuals and collectives will respond to climate change is a pivotal yet undeniably uncertain field of analysis. However, questions about the impacts of environmental change on individuals’ intentions, values and actions remain key to future adaptive trajectories across several scales. In response, this paper reports on findings from recent research that aimed to explore cultural, social, and possible behavioural responses to future climate change in Australia.

The research project—called ‘Climate Change and the Public Sphere’—developed regionally modeled climate scenarios that were then used in Q-sort opinion charting; qualitative interviewing; and a deliberative event with members of the Australian public to map responses to, and chart changes under, the different climate scenarios. This paper outlines how members of the Australia public currently perceive and will potentially react to climate change, as well as how they think they and others can and will respond to its future effects. In particular, this paper outlines how different climate scenarios affect participants’ norms and principles; and suggests that limits to social adaptation do exist, creating particular barriers to implementing adaptation policies.
Historical Evaluations of Regime Performance on the Output Dimension: Towards a Disaggregate Approach to Regime Impacts on Post-Treaty Negotiations

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In demonstrating that and how international regimes facilitate the convergence of foreign policy positions, analysts typically depart from irregularities at the macro-level and focus on beneficial effects for cooperation. This paper shows, with reference to the post-Treaty negotiations on an “Access and Benefit-Sharing” regime under the Convention on Biological Diversity, that standard approaches to substantiating regime effects on the output dimension fail to capture “perverse” regime impacts on perpetuating disagreement and “positive” effects that are overshadowed by malign conditions for cooperation. While this shortcoming may be acceptable in making a case for institutional causation across cases, it severely limits the analytical purview when the goal is the evaluation of a specific regime’s performance under historical circumstances. This paper outlines the contours of an alternative, more inclusive approach to the “output effectiveness” of international regimes. It firmly locates the analytical focus on the state level to investigate regime impacts on changes in foreign-policy making irrespectively of their implications
for and impacts on collective action. By drawing on bargaining theory and foreign policy analysis, causal pathways for regime influence can eventually be formalised that would not only provide a standardised framework for tracing specific regime effects of varying quality, but also allow for their comparative assessment within the same research design.

International water negotiations under asymmetry, Lessons from the Rhine chlorides dispute settlement (1931-2004)

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Improving the quality of international rivers is complicated, as an incongruence in preferences between upstream and downstream riparian states tend to exist. Downstream states have to be proactive and have to operate strategically in an attempt to change the BATNAs of upstream states. This paper aims to specify under which conditions such strategic interactions can be successful. This is done by an in depth analysis of the Rhine chlorides negotiations. Between 1931 and 2004 five long-lasting rounds of negotiations are discerned. First we analyze the framing of the issue, the strategies used by the riparian states and the complexities that occurred in each round. This analysis is based on reports and written material found in the archives of the Dutch Public Works Department in The Hague and of the International Rhine Commission in Koblenz, 12 in-depth interviews with key informants (former secretaries or delegates) from the Rhine Commission, and an additional review of secondary sources. Secondly, the effectiveness of the strategies chosen by the downstream Dutch to influence the BATNAs of the upstream parties will be discussed. We will conclude the paper with a specification of the conditions under which moral appeals, institution building, offering side-payments,
issue linking and arbitration can contribute to settle disputes in international river basins.

**Governance Mechanisms to address Conflict in Environmental Agreements: the case of transboundary water treaties**

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Transboundary river basins are of immense economic and environmental importance but their management constitutes a vexing international problem. While supply is constant, human activity and changing environmental conditions lead to the decline of global water availability. Scarcity and changes in resource availability are likely to spur conflict between partners to a shared system. Therefore, international institutions and agreements, able to adapt to changing circumstances will prove to be essential. Regarding the flexibility of international water agreements, mechanisms to address conflict (CRM) have already been defined as particularly important. But despite the fact that a better understanding of CRM-use could provide key insights about costs and benefits, their appearance in international agreements or the conditions that provoke their choice have not been systematically examined.

This study analyzes the content of a large number of water agreements and examines which mechanisms are adopted under what conditions. First, we distinguished 4 types of conflict resolution (“negotiation”, “mediation”, “arbitration” and “adjudication”) and identify potential barriers to their adoption. Next, we selected explanatory variables that potentially affect the choice of CRM and carried out a multivariate regression to determine which of them were significant. Our results indicate
that, although conflict resolution is considered important, still 45 per cent of the sampled treaties lack such provision. Multilateral agreements, however, are more likely to contain CRM. Most agreements do not specify the activation procedure of the mechanism or how to bear the cost of its use. Through this research we aim to gain insight in the diversity of conflict resolution mechanisms available, while acquiring more knowledge of the circumstances in which they are adopted. Ultimately, this study can offer policy makers a guide for negotiating environmental agreements.

Integration of Legacy Effects into Evaluation of Ecosystem Governance

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With environmental regimes, rapidly emerging and developing, scholars working on the evaluation of ecosystem governance and its capacity to adapt to global environmental change, face a challenge of accounting for the past changes of institutional set-ups and “legacy effects” (Liu et al. 2007) they created. These effects may include previously taken management actions (including infrastructure development) and formal and informal institutions developed or modified. This is important that even if completely new governance regimes are being emerged/introduced, the inertia of the previous set-up can be persistent, in particular where informal institutions are strong.

This problem has been raised in the course of a larger study looking at the adaptive capacity of forest ecosystems in Belarus. Belarus makes for an interesting case because the country is in socio-economic transition since early 1990s, and it still preserves the national governance, which is very much top-down and not
participatory. At the same time, the national government and NG sector closely cooperate with international organisations and EU on a number of initiatives, Belarus has ratified most of environmental MEAs, and the national environmental legislation has often been developed after EU models, i.e. multiple levels of environmental governance emerge and influence the national policy and the implementation mechanisms. Another effect of transition is that the conservation status of many protected areas and mandates of the management agencies are often revised and re-formulated.

To account for the legacy effect on the adaptation capacity of institutions of ecosystem governance, we have developed a methodological framework based on the analytical problems of the Earth System Governance as formulated by Biermann et al (2009) (Architecture, Agents, Allocation, Accountability, Adaptiveness) translated in a set of operational criteria. The criteria were applied to typical institutional set-ups associated with certain conservations categories of forest ecosystems, and mapped nationwide.

Lecture Room B

E2: Discourses on the Environment

*Time:* Saturday, 09/10/2010: 2:30pm - 4:00pm
*Chair:* N.N.

The Political Ecology of the Global Financial Crisis and its Impacts on Environmental Discourses: The case of Climate Change

*Celine Germond-Duret, Joe Howe*

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Our paper explores the impacts of the recent global financial crisis
on environmental discourses. It shows how economic challenges have been used either to push for a global rethinking and a move towards a more sustainable world, or to focus on the economic recovery and to cut green expenditures.

Framed within the general approach of political ecology, it examines how the financial crisis has been utilized to push conflicting agendas. Taking the specific case of climate change, our paper highlights the motivations driving governments and NGOs to act (or not) against climate change, as well as their interpretation of the phenomena, in light of the financial crisis.

Three broad discourses have emerged and have integrated the financial crisis in their arguments and rhetoric:

- **Climate change as an obstacle to economic development (financial crisis as an opportunity to rethink strategies and to invest in green economy);**
- **The fight against climate change as an obstacle to economic development (financial crisis as an additional burden, economic problems to be tackled first);**
- **Climate change as part of a broader failure of the economic paradigm (financial crisis as the symbol of the shortcomings of the system).**

We show through a discourse analysis how the occurrence of the financial crisis was used to reinforce existing ideas on climate change, and to maintain or gain hegemony. We highlight how it has indirectly influenced the negotiations on the post-Kyoto era (incl. COP15), and which role it played in discourse institutionalization.

Our research concludes on economic challenges as obstacles or opportunities for global environmental politics. At a more theoretical level, it gives insight on how new elements can be interpreted and used to reinforce conflicting discourses and gain power, and further contributes to place political ecology as a valuable approach to understand environmental decision making.
The making of sustainable development discourse: A hegemonic struggle between environmentalism and developmentalism

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Since its initial conceptualisation in the 1980s, sustainable development has been a dominant discourse in global environmental governance. For industrialised countries it suggested a discursive merger of continued economic growth and environmental conservation. For the so-called ‘developing’ countries, it meant environmentally less detrimental economic activities coupled with increased development aid. At all levels, sustainable development discourse turned into institutions: not only in the UN system but also as NGOs, business councils, and ministries.

This paper analyses sustainable development discourse from a global and historical perspective, by coupling text and narration analysis with discourse theory. UN texts, historical narrations (political, literary and scientific), political movements and institutions are examined. The hegemonic struggles to fix the meanings of 'development', 'progress', and 'sustainability' are revealed such that new strategies can be produced for global environmental governance. Among the themes of this Conference, it addresses 'how the sustainable development discourse effects environmental governance'.

The paper examines the main ideological roots of sustainable development, developmentalism and environmentalism, placing them to their historical contexts. Firstly, the historical continuity between colonialism and developmentalism reveals how the semantic constellation around development changed, while the ideas about the concept remained intact. Secondly, the origins of sustainability generated increasingly more radical versions of environmentalism throughout 1970s. In the light of these findings,
the hybrid concept of sustainable development is studied, linking these historical narrations with the Brundtland Report. This text analysis shows how the report successfully ended the hegemonic struggle by merging sustainability with development. The final section focuses on the influence of sustainable development discourse in environmental policies and institutions today: A comparison of the texts resulting from three environmental summits (Stockholm 1972, Rio 1992, and Johannesburg 2002) and the more recent changes in governance (carbonification, securitisation and the Green New Deal) are juxtaposed to this background.

**Exclusive Mini-lateralism: An Emerging Discourse within International Climate Change Governance?**

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Since the formation of the US and Australian sponsored Asia-Pacific Partnership on Clean Development and Climate (APP) in 2005, there has been a series of international climate change agreements involving elite state actors only. The APEC Sydney Leaders Declaration of 2007, G8 Hokkaido Leaders Declaration of 2008 and US Bush Administration Major Economies Meetings (MEM) of 2007-08 all display a shift towards a model of international climate governance based on small groups of economically powerful states, to the exclusion of less powerful states and civil society. The role of some developing countries at the recent Copenhagen COP 15 meeting, together with logistical difficulties in civil society participation at that meeting, have strengthened calls for international climate governance to be pared down to a smaller decision making forum involving only ‘key’ countries in terms of emissions and economic output. This paper seeks to explain the above developments by an
interpretivist research design based on international legal analysis and critical constructivist discourse analysis. It is argued that the above developments embody a discourse of ‘exclusive minilateralism’ that represents an important discursive challenge to the ‘inclusive multilateral’ design that has dominated international climate change governance since the formation of the UNFCCC in 1992. The exclusive minilateralist discourse seeks to shift inter-subjective meaning underlying the processes of international climate governance away from openness, transparency and accountability towards an acceptance of secrecy and power-based outcomes that will allegedly provide greater global effectiveness in reducing greenhouse gas emissions. Any continued strengthening of the exclusive minilateralist discourse will provide a significant challenge to the deliberative potential of international climate change governance over coming years.

‘Food is the first thing, but the morals must follow on’: An attempt to holistically frame the discourse for action in the conditions of climate change

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The article aims to set up a general conceptual framework for explaining the combined natural and social conditions associated with global climate change. Starting from addressing the issues through the metaphor of ‘the tragedy of the commons’ it suggests that a pessimistic reading can be avoided in situations where different participants of the commons understand the universal rules constraining preferable management strategies, and can choose to form mutual agreements to act cooperatively in furthering some of their individual interests. Principle-style explanations are introduced and suggested as a useful explanatory model in this case, based on the considerations from the history of
science. Further ontological commitments of explanations of this type are investigated (holons and ‘clumsy’ interaction), followed by a discussion of framing as the most important segment of context setting for the formulation of experienced regularities as behaviour constraining principles. It is suggested that a concept of (human) security provides a suitable foundation for the generalization of experienced phenomena, at local and global scales of the commons-management, into said principles. Based on the behaviours’ effects on the (human) security broadly applicable constraining principles are tentatively proposed, opening up space for further tests of case-study applicability, both in terms of universal validity and conceptual accessibility to different commons-management participants.

Lecture Room C

E3: Social Drivers of Environmental Change: Policies
Time: Saturday, 09/10/2010: 2:30pm - 4:00pm
Chair: Per-Olof Busch, Potsdam University

Political leadership in environmental change

Peter Scholten\textsuperscript{1,2}, Jurian Edelenbos\textsuperscript{1}, Wouter de Groot\textsuperscript{1}, Sander Meijerink\textsuperscript{1}, Geert Teisman\textsuperscript{1}
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Processes of transformation, aimed at adaptation of environmental change, are often initiated in informal arenas where forerunners meet and breed. In order to connect such transformations to the existing socio-political context an adequate form of environmental governance is needed. This implies a key role for public decision-makers as gate keepers that can link an innovative policy proposal to the existing complexities of the government context in which
social barriers, democratic obligations and the representation of existing routines that might be challenged by this innovation. This paper will focus on a radical change in the water management strategies of the South western delta area and specifically the resalinization of the Volkerak-Zoommeer. In the light of ecological rehabilitation and safety from possible flooding the need to restore this artificially maintained fresh water basin to its former state and allow influence of marine dynamics has been articulated. These adaptations provide several challenges for finding alternatives for the supply and use of fresh water to existing agriculture and industry.

The role of local political leadership in the process of combining and synchronizing existing routines with innovations that require a change of these routines is regarded as essential. These connective capacities of leadership are subject to various influencing factors such as personal characteristics, the local and supra-local environment and institutional arrangements.

Theoretically we distinguish leadership behavior in transactional, daring and transformational typologies. It would be hypothesized that daring leadership, which we conceptualize as a combination between transactional and transformational repertoires is most suitable for the successful coupling of innovative proposals with existing routines.

Through empirical case study, the paper will explore key motivational elements resulting in specific leadership behavior as well as the ensuing possibilities for successful integration of the innovative proposals into existing policy.
Local responses to global standards – the reshaping of environmental governance

Jessica de Koning
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Since the 1990s, countries in the Amazon region have increasingly adopted their environmental legislation in response to environmental change. In many occasions, these adoptions have also resulted in new governance regimes combining global standards and local needs. Although they has been designed to create economical, social, and political opportunities for local communities, the effect at the local level of environmental governance remains arbitrary and frequently lacks in effectiveness. This paper attempts to open the black box of policy influence at the local level by departing from local ‘bricolage practices’ of local actors in response to new legislation. Bricolage practices imply that local actors reshape external policy influences by drawing on the different institutional elements at hand, for example legislation, conventions, norms or traditions. These can result in rejection, adaptation or incorporation of environmental policy into their already existing social structure and traditions. This paper draws on post institutional theories to provide insight in how the local community level responds to environmental policies. By means of case studies in the Amazon region of both Bolivia and Ecuador, it demonstrates the dynamics surrounding the implementation of environmental policies. These dynamics show environmental policy as only is one of the many institutional influences on local communities, often being in conflict with local needs. The paper concludes by discussing that communities seem much more receptive towards locally initiated “softer” guidelines than towards restrictive and “hard” government legislation.
Driving forces of unsustainable consumption: the visible hand of misguided policies

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The argument advanced in this paper aims to show that complex and inconsistent incentives schemes have to be gradually revised when implementing sustainable consumption policies. Referring to recent institutional and evolutionary theories, the paper seeks to explain the merits of the in-depth study of the multifaceted driving forces at macro and meso level contributing to continuing high consumption levels in the most resource-intensive demand areas. A first section illustrates how the institutional framework and infrastructures interact with policies. Relevant regulatory policies such as the European competition policy (e.g., shop opening hours) in conjunction with national and local planning policies (e.g., building and mobility) become manifest in settlement, retail and supply infrastructures inducing further consumption and environmental impacts. Environmental instruments (e.g., taxes/charges) and certain national consumer and information policies (e.g., food) aim to overcome lock-in effects but undifferentiated VAT rates, consumption-friendly subsidies, low asset and real estate prices and the expanding consumer credit system counteract those efforts. A second section asks for the innovation capacities of societies within the inconsistencies of resource-saving innovations and accelerating innovation cycles. While time saving innovations not only extend leisure but also consumption time, the life span of goods continuously decreases both pushing on rebound effects. Modern business models like franchising systems and the rapid diffusion of discounters also contribute to accelerated production and consumption processes accompanied by a growing variety of products, increasing advertisement, marketing and branding.
Against this background, paradigms such as consumer sovereignty have to be questioned with regard to their adequacy for an economy in need of a transition management differing between useful and environmentally detrimental innovations. The concluding section presents a model on the interaction of the different driving forces and calls for further analysis. It proposes to systematically harmonise the existing (regulative) framework with new sustainable consumption policies.

**From Fear to Action: The Presence of Wolf in SW Finland**

Juha Hiedanpää
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Wolf (Canis lupus) is strictly protected by the European Union’s Habitats Directive. Since Finland joined into the EU, the Finnish population of wolf has increased and spread from the east to the west of Finland.

In August 2008 wolves attacked four sheep pastures in Köyliö SW Finland and killed 65 sheep. After a century the community felt the fear of wolf again. People quickly adjusted their habits in the face of presence of wolf. There are four characteristics concerning these adjustments: (i) people felt surprise and fear; (ii) the presence of wolf was bodily experienced, it affected everyday activities; (iii) the effects of the presence of wolf were felt collectively, fear and surprise and consequent adjustments were shared and communicated by the community members; (iv) primary emotions constituted social emotions, such as anger and frustration, that functioned against wolf. By June 2009 wolves were gone. There were no biological reasons to their disappearance; the roe deer and moose populations were sufficiently dense. Reasons were human reasons; apparently, wolves were poached.

In this paper, I analyse how collective bodily emotions led to
declining wolf population. Based on the interviews conducted in summer 2009, I explain the role and significance of emotional regimes, emotives, and collective imaginings in how collectives tackled these kinds of problems. The results of this study contribute to the European biodiversity policy studies. They also contribute to the environmental policy and management in more general. The study helps to understand the significance of positive emotives, plural and soft institutional settings and moral imagining in policy planning and implementation. Understanding this helps certainly to improve European wolf policy, but the analogies derived from the wolf case may help to find ways to organise action in the face of local manifestations of climate change and other environmental disasters.

**Governance and Non-State Actors in Municipal solid Waste Management.**

**Christine Majale, Gert Spaargaren, Peter Oosterveer**
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A study of governance and urban waste must examine not only the formal structures of government but also the informal structures created by the society, such as community-based institutions, associations, and organizations; their relationships; and the relationship between the formal and informal structures for collection, transportation, and disposal of waste.

It is evident that municipalities in developing countries and particularly so in East Africa, typically lack the financial resources and skills needed to cope with the crisis of solid waste management. This raises the important issue of how to deliver quality service in the face of the financial and skill constraints of the public sector. Comparing governance arrangements amongst non-state actors in three urban authorities Kisumu (Kenya); Jinja (Uganda) and Mwanza (Tanzania) in East Africa, allowed this study to describe and appraise performance of these non-state actors in
solid waste management at the municipal level with an aim of recommending policy options. Issues addressed are legitimacy and influence on decision-making; relations and alliances and the payment systems. Theoretical arguments of neo-developmental states verses network states in governance, guided the discussion. Stakeholder workshops, household surveys; interviews and document analysis were the method used to gather data, while coding and use of excel aided in analysis. The study concluded that a mixed modern approach in governance is needed to achieve sustainability. This would bring together the best features of central system of governance and the decentralized system to obtain an optimum mix.

The Interplay between the United Nations Climate Regime and the World Trade Organization: Consequences, Causes and Policy Options

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Seeking to contribute to the governance stream of this year’s Berlin Conference, the paper addresses an emerging phenomenon of global environmental governance: the increasing overlap and interplay among institutions that touch upon related subject matters. Presenting one of the first outcomes of the Earth System Governance project, the paper focuses on one specific case of
institutional interplay, namely the overlap between the United Nations climate regime and the World Trade Organization (WTO). While parties of the UN climate regime discuss trade-related measures for a post-2012 agreement, WTO parties debate climate-related trade measures. This duplication of debates entails a lack of legal clarity, which may have detrimental implications for the further negotiation and implementation of both regimes. Drawing on neoliberal institutionalism and cognitivism, we identify two reasons for these interplay effects: the constellation of preferences and the lack of consensual knowledge on overlapping issues. Based on a workshop organized jointly with the UN Environment Programme, we developed suggestions to tackle these reasons. Policies could accommodate the lack of knowledge by means of flexible approaches, e.g. default values for border cost adjustments and ‘living lists’ of sustainability criteria for lifting trade barriers. With regard to the constellation of country preferences, a careful linkage of debates across arenas can produce additional trade-offs and break some of the deadlocks in which these discussions have ended up. On the other hand, the paper attends to the caveats and limits of such linkages.

The October 12, 1998 Decision of the Appellate Body of the WTO in the United States Ban on Shrimp and Shrimp Products: A Great Leap Forward in the Protection of the Global Environment?

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This paper will discuss the World Trade Organization (WTO) as an institution of global governance and regulation, and analyses the role that globalisation and non-governmental organizations (NGOs) played in the WTO Appellate Body decision upholding an
arbitration panel ruling against the United States, in the Shrimp-Turtles trade dispute. While most environmentalists were upset by this decision, this WTO Appellate Body ruling actually charted a new course for future WTO arbitration panels in making determinations regarding the legality of trade related restrictions imposed on trading partners by nations attempting to enforce environmental regulations. Among other things, the decision opened the door for unsolicited Environmental NGO legal filings and actually upheld the United States’ right to ban shrimp and shrimp products from producers who did not use acceptable fishing methods to safeguard endangered sea turtles. This paper identifies and analyses the modifications to certain principles of public international law (that were almost entirely based on previous WTO arbitral rulings), that came about as a result of this landmark WTO ruling. Virtually all of these modifications may be seen as advantageous for nations and Environmental NGOs that are seeking to protect certain areas of the global environment and or endangered species. The economic and trade disadvantages of this decision from the perspective of many less developed countries will also be identified and discussed in this paper. Then the conclusions section will summarize the results and offer suggestions for how nations can use legally use trade related restrictions to foster improved compliance with environmental regulations.

**Climate and Trade Governance from a Normative Perspective - The Case of Carbon Border Adjustments**

**Clara Brandi**
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The aim of this paper is to contribute to the assessment of the distributional effects of environmental governance. The paper examines the nexus between climate change and trade governance
from a normative perspective. Only little research attention has been paid to assessing the interactions between empirical and normative approaches to climate change in the context of potential trade measures. To this end, the paper focuses on currently discussed carbon border adjustment measures (CBAs). This paper assesses these trade measures from a normative perspective: it explores whether they are compatible or in conflict with development ethics on the one hand and with climate ethics on the other.

The paper finds that CBAs are both a threat to development as well as to a workable climate agreement. It argues that they are therefore both in conflict with development as well as climate ethics concerns. From a development ethics perspective, CBAs are objectionable for two reasons. First, they hurt developing countries and above all the ones that are vulnerable in terms of relying only on few export goods. Second, CBAs restrict market access for developing countries and thereby undermine the potential of trade to foster development. From a climate ethics perspective, CBAs are objectionable for the following reasons. First, CBAs amount to unilaterally changing whatever global burden-sharing deal has been agreed to – thereby undermining procedural justice. Second, CBAs disregard the consumption-dimension: it is hardly fair to focus on making the producers pay for emissions rather than also holding those responsible that import and consume the goods that incorporate these emissions. Third, even if LDCs and countries with low emissions are exempted from CBAs, they still burden countries that bear no historic responsibility for current high levels of greenhouse gases in the atmosphere, thereby undermining distributive justice by being in conflict with the polluter pays principle.
The EU approach to genetic resources: managing the CBD-TRIPS relationship

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The two primary regimes regulating genetic resources on the international level are the Convention on Biological Diversity (CBD) and the Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS). While the CBD provides a soft legal mechanism for sharing the benefits derived from the utilization of genetic resources, patent systems based on TRIPS are tendentially non-compensatory in character. Being a net user of genetic resources, the CBD is structurally biased against the EU’s economic interests. Still, the EU is a major player within the CBD and also within the ongoing negotiations for an international regime on Access and Benefit-Sharing (ABS).

The question has to be asked, whether the approaches for regulating genetic resources that exist in EU external action are consistent, or whether negotiations in different forums are each subject to different forms of regulatory capture, with different groups / institutions dominating in each forum. It will be shown, that the former is the case. Starting from theories of regime-shifting and forum-shopping, the central question to be posed is, how and to what end the EU manages the interactions between CBD and TRIPS through its external action. A current working hypothesis of the on-going research project is that, from a moderately constructivist perspective, EU involvement in regimes such as the CBD (or the FAO-treaty), is not only due to a pursuit of objectively given, primarily geo-economic interests. Rather, EU external action in the regulation of genetic resources is also partially driven by normative conceptions that are, in the last instance, based on an understanding of Europe as a “civilian power” within geo-politics. The explanandum is how the conflict between economic interests and normative commitments plays
out, and what consequences it has for the management of CBD-TRIPS relations by the EU.

E5: Impacts of Certification and Effectiveness

**Time:** Saturday, 09/10/2010: 2:30pm - 4:00pm
Chair: Philipp Pattberg, Vrije Universiteit Amsterdam

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**Biofuel certification as a tool for environmental and social sustainability: the case of the Brazilian Northeast**

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While the environmental and economic dimensions of sustainability have received plenty of attention in biofuel policies and assessment, only recently has the social ‘pillar’ gained increasing weight, as demonstrated e.g. by debates over the food vs. fuel dilemma and large vs. small-scale biofuel production. The Brazilian bioethanol programme, Proálcool, launched in 1975, provides a unique historical illustration of the challenges of reconciling social, environmental and economic objectives in the presence of striking asymmetries of power. Inequality characterises the relations both between regions – the poor Northeast and the prosperous Southeast – and between social classes in the Northeast sugarcane zone. The on-going renaissance of Brazil’s ethanol sector provides new opportunities for economic and technological development, but has also raised concerns about the potentially harmful environmental and social impacts from the expansion of sugarcane cultivation. The entry of international players into the Brazilian biofuel scene has increased competition,
but has also opened up opportunities for more pro-poor policies and breaking down the entrenched power structures, notably through the pressure from international sustainability certification schemes.

This paper will examine the prospects and challenges facing biofuel sustainability certification in promoting social and environmental sustainability in Brazil, with particular attention to the country’s Northeast region. By examining the recent Brazilian debate concerning certification – including official positions by authorities, statements by various stakeholders, and the broader media debate – the paper identifies the key challenges of sustainability certification in the light of its often mutually contradictory objectives. The focus will be on interactions and tensions between four such objectives: ensuring biofuel sustainability at the global level; promoting innovation towards the supposedly more sustainable ‘next generation’ biofuels; supporting Brazil’s economic and commercial ambitions as part of its ‘ethanol diplomacy’; and promoting social justice. The paper will conclude by recommendations concerning ways to overcome the challenges.

The role of product labelling schemes in shaping more sustainable production and consumption systems

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To facilitate more sustainable consumption different actors have introduced various labelling schemes providing information about a product’s environmental, social or other attributes. Based on case studies of existing labelling schemes this paper analyses how sustainability related product labels try to shape the production and consumption system by enabling political consumerism and facilitating a more sustainable modification of the supply chain. Labelling schemes are thereby understood as representing a new
form of governance, which to be effective, needs the legitimisation from all actors that are essential for these processes. On the one hand this offers opportunities from empowering non-governmental actors and being dissolved from national boundaries; on the other hand it sets clear limitations for the instrument.

**Voluntary Bioenergy Certification: A Legitimate Approach to Account for Social Aspects in Environmental Governance?**

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“While initially hailed to be the silver bullet for tackling climate change, reducing oil dependency and providing an opportunity for rural development especially in poorer regions, severe criticism concerning the environmental and social performance of bioenergy has been raised recently. One potential solution for this problem that is increasingly discussed now is the certification of bioenergy. In the wake of this discussion, a broad range of certification initiatives emerged during the last years. However, this issue is predominantly debated in terms of the environmental implications. Accordingly, governmental approaches to this issue often neglect the need for including social aspects into sustainability principles and criteria, most prominently here the EU Renewable Energies Directive (RED). Non-state voluntary certification initiatives, by accounting for the social implications of increased bioenergy production, could therefore be seen as complementary governance instruments that are able to fill the void left by state regulations in this respect.

After briefly addressing the reasons why state regulations tend to neglect social aspects concerning this matter, this paper seeks to explore whether voluntary bioenergy certification schemes could really be able to fulfil these hopes and provide the solution for the
missing consideration of social criteria for sustainable bioenergy. And how could these private non-state initiatives do so in a politically and democratically legitimate way? So as to deal with these issues from a scientific perspective, a distinct analytical framework to evaluate the legitimacy of private governance is presented. Based on this framework, five voluntary bioenergy certification schemes are selected and their consideration given to its social dimension is examined. In order to address the characteristics of our conception of non-state legitimacy, the actor constellations behind these certification initiatives are analyzed with a view to determine the structural representation of social interests. Furthermore, we also give attention to the control and accountability mechanisms incorporated into the certification schemes that are supposed to safeguard the common welfare-orientation of the initiatives. The results of this analysis shed some light on the particular challenges and bottlenecks of ensuring social sustainability via non-state voluntary certification systems in the bioenergy sector. In the concluding chapter, these results are put into perspective and a more general discussion on the potential of non-state voluntary governance approaches regarding the social dimension of environmental governance are presented.”

**Does forest certification really make a difference? A state of the art of effectiveness studies and a future research agenda**

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Certification is becoming an institutionalized governance approach to sustainable development. Certification schemes have been developed for a myriad of products, aiming to improve their social or environmental performance. Certification enables, and is perhaps even one of the drivers of, market-based governance. Forest certification can be regarded as a pioneer, since forest
certification started as early as the beginning of the 1990s. One of
the major standards, the Forest Stewardship Council (FSC)
addresses both social and environmental concerns, while others,
like the Programme for the Endorsement of Certification (PEFC)
and its associated national schemes, have less stringent demands,
especially on social aspects.

Despite the relatively long experience with forest certification, no
systematic global assessments of these certification schemes have
been performed until today. There is, however, a scattered body of
knowledge available, including evaluations of certifications in
specific forest management areas, comparisons of the standards
on paper, and studies on certain aspects of certification schemes.

This state of the art paper aims to present and review the current
state of knowledge on the effectiveness of forest certification.
Existing evaluations are analyzed in terms of the knowledge
provided on the effectiveness of the schemes, the research
approaches and methodologies applied, and the scope of the
evaluation in terms of, among others, geography and inclusion of
environmental and social issues.

Based on this current state of knowledge, the paper develops a
research agenda which aims to overcome the current knowledge
gaps. The agenda proposes an assessment of the effectiveness, in
terms of environmental, social and economic issues, of the major
forest certification schemes, which includes contributions from
both the natural and social sciences. The research agenda also
proposes contributions to the governance debates on the risks,
opportunities, and consequences of the current institutionalization
of the governance mechanism of certification.
The local payoffs of coffee certification. Evidences from smallholder cooperative farmers in Jinotega, Nicaragua.

Till Stellmacher¹, Pradyot Jena², Bibhu Nayak³, Ulrike Grote²

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Coffee is a strategic product in tropical regions worldwide. Millions of subsistence farmers in remote and underdeveloped areas of tropical countries depend on coffee grown as a non-timber forest product as their main cash crop. The world’s coffee forests conserve biodiversity, mitigate climate change and provide local smallholders with forest products.

In the context of growing markets for certified coffees, certification of forest coffee is currently promoted by NGOs, donors, and state agencies as a tool to provide poor coffee farmers with better income and simultaneously to conserve and regenerate the coffee forest ecosystems.

Empirical field research was conducted in 2009/10 in forest coffee areas of Nicaragua (Jinotega), India (Araku Valley) and Ethiopia (Jimma). In all three case studies, forest coffee is produced in farmers’ cooperatives and certified according to Fairtrade and Organic standards. A total of 750 interviews were carried out with smallholder forest coffee producers in both certified and non-certified coffee cooperatives. Additional open interviews were conducted with experts concerned.

Based on empirical findings, this presentation aims to comparatively illustrate the local performance of forest coffee certification in practice. It is argued that certification faces very similar problems in all case study areas. Certification is pushed from external donors and practically implemented top-down. Coffee farmers generally do not understand the underlying aims
and procedures of certification. Furthermore, certification standards mainly target agricultural production systems while ignoring specific man-nature coherences of tropical forest products such as forest coffee. Consequently, faced with better coffee prices due to certification, farmers are stimulated to intensify their production by cutting the forests undergrowth and its larger trees – thereby harming biodiversity. To better combine both, socio-economic and ecological goals, a certification approach is needed that does not merely certify the product, coffee, but the sustainability of the use and management of coffee forests as a tropical ecosystem.

**E6: Appraising Adaptation Government**
*Time: Saturday, 09/10/2010: 2:30pm - 4:00pm*
Chair: N.N.

**REDD – potential environmental justice challenges and the way forward**

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The use of market-based mechanisms is transforming the way nature and ecosystems are managed with profound implications on environmental governance. The rapid growth of the carbon market appears to have significant environmental justice implications because of the way costs and benefits are distributed among different actors. In particular, potentially conflicting uses of forest, one as carbon sink for generating credit and the other for subsistence of local and indigenous populations, suggests enormous environmental justice implications of REDD (Reducing
Emissions from Deforestation and forest Degradation). Despite being in a pilot stage, REDD is already transforming the way forest is managed with significant impacts on many forest-dependent communities in developing countries.

The paper uses the Six Moments Framework proposed by David Harvey to assess the process whereby different stakeholders respond to changes triggered by the introduction of REDD. Each moment, namely: discourse; power; values and beliefs; social relations; material practices; and institutions and rituals, influences each other and its interaction shapes the scope and direction of social changes. As Harvey recognises, interactions often favour those in power through, for example, political elite advocating market-based mechanisms to address environmental problems and building a REDD framework based on their interests. However, the paper argues that careful analysis of forces at work within and across moment could help identify potential entry points from where a challenge to such processes can be launched. Such analysis would help open up greater space for weaker groups and pave the way forward for a more equitable and sustainable forest management. The paper assesses the process of designing and refining the REDD framework in South East Asia through the Six Moments Framework with a discussion on the potential entry points in empirical settings.

**Alternative political responses to climate change: construct dikes or erect windmills? Or: How to amalgamate the Cultural Theory and the Varieties of Capitalism Approach?**

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Climate change affects the entire globe. However, its effects are influenced by differing geographic expositions and unevenly spread
social adaptation capacities. Empirically, different levels of social vulnerability can be observed which are explained by distinct levels of wealth – so the general explanation goes. Such correlations cannot be neglected and are quite trivial: assuming similar expositions, The Netherlands are better prepared to construct dikes against flooding than Bangladesh.

But what is about different vulnerabilities occurring despite of comparable levels of wealth? Why is it that the Mississippi delta was devastated by hurricane Katrina whereas the Rhine-Meuse delta remained almost unaffected up to now? What accounts for the fact that Texas, not really know for caring much for environmental niceties, has set up more windmills than California and is close to outpace Denmark and Germany with respect to the production of wind power? How can it be that Texas nevertheless rejects any environmental political guidelines from Washington? These questions are discussed by amalgamating the Cultural Theory (Douglas/Wildavsky 1982, Schwarz/Thompson 1990) and the Varieties of Capitalism approach (Hall/Soskice 2001). The rationality behind this idea is that societies which are rather coined by collective and egalitarian principles are better prepared to cope with cooperative tasks like building dikes whereas individualistic institutions and convictions result in a situation in which the rich seek shelter whereas the poor are left alone. Contrary, it is easier to realize (environmental-)innovations like windmills within a liberal context. That is because it is easier to raise venture capital and to overcome opposition within the neighbourhood (among other things).

Our theoretical argument picks up the vaguely claimed correlation of cultural frames of interpretation and socio-economic institutions (Dryzek 2008, Mamadouh 1999) and explores it in greater depth.
Pro-Poor Adaptation: The Socio-Cultural Imperatives of Climate Governance in Marginalized Livelihoods Systems

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This paper foregrounds the socio-cultural imperatives of climate change governance mechanisms in vulnerable communities using a North-South comparative discussion. Focusing on adaptation, the paper highlights how emerging discourses of climate change adaptation is informing or impeding adaptation governance from a developing and developed country perspective. Using, Ghana, my native, and Africa generally, my desire is to explore how climate change adaptation thinking and practice in a developing country context compares with current adaptation thinking in vulnerable aboriginal (poor) communities in Western Canada.

‘Pro-poor Adaptation’ as I imply in this paper is essentially the exploration of what climate change adaptation means to poor and marginalized communities, and to understand how culture, values and livelihood dynamics in these communities could guide adaptation governance in diverse places and cultures. By putting poor developing country communities in Africa alongside Aboriginal communities in Canada, and for that matter North America, the paper explores notions of poverty, deprivation and vulnerability from different structural backgrounds.

A North-South perspective on adaptation governance approaches provides an avenue to critically analyze the cultural imperatives of climate change governance and to establish differences and similarities in perceptions and understandings of adaptation decision making in marginalized livelihoods. In so doing, notions of vulnerability, sensibility, resiliency, agency, human cognition and adaptive capacity will be contextualized and discussed to facilitate a deconstruction of underlying generalized assumptions and how these play out in different concepts or perceptions of poverty and
deprivation.
The guiding question then becomes: how are levels of vulnerability determined in structural inequalities and how should such measures inform global environmental change governance mechanisms in marginalized livelihood systems?

**E7: Social Consequences of Environmental Change (I)**

*Time:* Saturday, 09/10/2010: 2:30pm - 4:00pm  
*Chair:* Chinwe Ifejika Speranza, German Development Institute (DIE)

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**Overcoming social barriers in managing vulnerability of alpine tourism to environmental change**

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Tourism as the world’s biggest service industry is threatened by global environmental change. Alpine tourism with its economic backbone of alpine skiing has been responding to direct ecological threats of climate change. Adaptation focused on maintaining a status quo of alpine (ski) tourism, resulting in technical adaptation such as snow making and expansion of lifts and slopes to higher elevations. Such business-as-usual strategies feed back negatively to environmental change and proofed to be not sustainable, neither ecologically nor economically. More sustainable kinds of vulnerability management include behavioral ways of adaptation, such as diversification strategies, and mitigation efforts. Both have been neglected by the supply side of tourism stakeholders because
of the fear of high investments into alternative products and services that would not meet customer demand.

A vulnerability analysis in thirty tourism destinations in the four main alpine countries after an analogue winter for future (climate) change proofed that vulnerability is more complex than currently understood. Climate change is one major threat, but socio-economic developments have been neglected and underestimated in their potential consequences.

Vulnerability factors are not mainly climate change, the geographical situation of the destination or snow making capacity, but socio-economic changes and the inadequacy of policies addressing these. Further social causes such as a lack of participation on supply side, personal social barriers, weaknesses in destination governance models and a lack of interaction and partnering with the demand side increase vulnerability of alpine tourism to environmental change.

Given these findings, an alternative, qualitative growth model is proposed and outlined which would not only decrease negative feedbacks on social-ecological systems, but given a matching demand it could create a business opportunity and act as a push-and-pull factor, thus addressing social supply side barriers to change business-as-usual strategies.
Preparing a new blueprint for environmental governance

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Sustainable economic development needs to effectively integrate environmental considerations into the design of the industrial processes so that implications of such development are positive. Industrialized state of Gujarat has evolved and modified systems to effectively address the question of sustainable development by integrating infrastructure, livelihood and environmental aspects in this current development discourse. However, its industrial development pattern nowhere addresses the question of responsibility of industries to preserve and protect their surrounding environment, nor the government clearly illustrates any environmental governance mechanism or regulatory policies that protect the interest of the nature and communities living in the periphery. A study of the development pattern in the villages surrounding Dahej industrial region since 1991 shows inequitable distribution of community resources and services. This contradicts the industrial policies aimed at integrated development. This debate also flags the larger issue of protection of environment in this rather ecologically sensitive region (surrounded from two sides by Narmada delta and Arabian sea). The industries have no safeguard mechanisms to protect the ecology, which has become highly vulnerable given the existence of aquatic species in the surrounding delta. Gujarat government’s aim to make it the biggest petro-chemical hub has overlooked the environmental concerns, which may very well turn out to be a anthropogenic disaster for the living entities.

In light of the above, the paper would analyze the socio-environmental costs of uninhibited economic growth in the region. The other objective is to study effects of large-scale industrialization, which may lead to environmental hazards in the
future. The study paves the path for preparing a new blueprint for environmental governance, which benefits the industries and the living entities that surrounds the industrial region.

Double Exposure in the Northern Coast of the São Paulo State, Brazil

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This paper examines how double exposure to both socioeconomic and environmental stressors and the interaction between the two affect the population of the Northern coast of the São Paulo State, Brazil based on the conceptual and analytical framework developed by R. Leichenko and K.L. O’Brien. It provides a useful way to examine the multiple and overlapping processes of global change and, in particular, the places and the ways in which the economic and the non-economic interact. It is rather that the processes interact and, in doing so, influence the exposure and capacity of people and places to respond to a wide array of stressors and shocks in a way that then creates new contexts for experiencing and responding to change. Interactions between economic and environmental change shape local landscapes of vulnerability and a major challenge for understanding vulnerability involves identifying how economic and environmental processes interact in particular places and how these interactions shape the effects of some global change processes and drive others. Pathways to increased vulnerability are multidimensional, so that socioeconomic conditions may mediate the impacts of environmental change, but changing environmental conditions may also alter socioeconomic capacities to maintain particular livelihood strategies. By analyzing case studies of four municipalities that compound the region we found that people’s resilience, in general, are largely determined by the socioeconomic context and the social vulnerability. Our finding indicate that
socioeconomic change brought about in the last three decades due to intense urbanization, tourism exploitation and increasingly economic activities have altered people’s livelihood and deepened social problems. We argue that the cross-scale nature of the problem and the cross-level interactions of these processes pose significant challenges for governance structures and institutions in place in the region that fail to address the roots of vulnerability and consequences of a changing environment.

**E8: Integrating Adaptation**

*Time:* Saturday, 09/10/2010: 2:30pm - 4:00pm

*Chair:* Sabine Weiland, FU Berlin (FFU)

**Adaptation in Europe: governance problems and decision-making needs**

**Susanne Hanger**

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Unlike mitigation, adaptation addresses a diverse range of problems and impacts related to a wide variety of uncertainties. In addition, adaptation policy is not done by “simply” creating EU and national law. Adaptation issues vary on the regional, the local and even on the individual levels. Different adaptation problems occur in different sectors. This broad scope encompassed by the term adaptation already indicates challenges in implementation. Implementation of policies in the multi-level governance system of the EU becomes more complex because of the diversity in governance systems and cultures in its member states. What are the problems and needs as perceived by policy makers? With the publication of the White Paper the EU suggested a yet vague framework for adaptation, especially dedicating current efforts to more research in the field and mainstreaming. In most
European countries current efforts have not exceeded the national level and researching climate change impacts and adaptation measures is still the key issue on the agendas. However, the upcoming EU programming period must be used to introduce concrete adaptation measures effectively into EU policies. Work Package 1 of the FP7 project MEDIATION scrutinizes institutional and decision making contexts of adaptation on various government levels. The paper makes use of the empirical research done for MEDIATION. It identifies core institutional problems and needs that challenge the development and the implementation of adaptation policies in the EU and its member states (i.e. in different governance regimes) during the next years. Possible solutions will be highlighted based on experiences from other complex EU policies (e.g. Structural Policy).

**Coping with Climate Change: Integrating Adaptation into Sectoral Policies in Switzerland**

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Governments throughout the world recently addressed adaptation as a second key strategy to tackle climate change. Integrating climate change adaptation according to the idea of Environmental Policy Integration (EPI) recently started to attract attention of practitioners and academics. It is argued that the integration of climate change adaptation policies faces similar challenges as the horizontal and vertical integration of environmental policy in the past. Basically, adaptation is also a cross-cutting issue. Accordingly this task is challenged by different and sometimes conflicting sectoral policies as well as the relationships between and the roles of various actors at multiple levels. The procedural approach in EPI addresses the institutional rules of decision-making. The degree of policy integration depends on the actor’s ability to determine formal agendas, develop policy
proposals, and the timing of participation in policy-making. Hence, it is hypothesized that the integration of adaptation issues depends on a central position of the agency accountable for adaptation especially during the formulation stage. However, as in the stage of implementing adaptation policies local and regional actors are decisive, the interactions among actors through consultative, participative processes or working relations are central to achieve broad acceptance of the policy output.

Methodologically, the network approach developed by Serdült and Hirschi (2004) is applied. This actor-process-event approach (APES) links the participating actors with the different stages of the policy process. In a second step these data are analyzed with Social Network Analysis tools to assess the role, power, and authority of each actor. Empirically, the paper analyzes forestry and water policy in Switzerland which have undergone fundamental change recently. Preliminary results suggest that during the formulation stage the role, power, and authority of the actors accountable for adaptation issues determine the degree of integration of climate change adaptation while in the implementation stage requires broad participation.

**Governance Approaches to Climate Change Adaptation**

**Anja Bauer, Judith Feichtinger, Reinhard Steurer**

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During the last years climate change adaptation has become an integral and important pillar of climate change policies in many countries. Research on climate change adaptation, so far, has focused mainly on climate scenarios, expected impacts and respective ecological, societal and economic vulnerabilities while only little systematic research has been done on the governance of climate change adaptation. How do governments induce and
facilitate climate change adaptation in the public and private sector, across sectors and territorial scales? What institutional and procedural challenges arise for related governance processes due to the peculiarities of adaptation issues? How are adaptation policies integrated in other policy areas and across different political and administrative levels?

By addressing these questions this paper explores the ways in which adaptation policies and instruments are developed and implemented by governments. Based on a stock taking survey in 10 OECD countries we describe and compare national and selected sub-national governance approaches that deal with four key challenges in the context of climate change adaptation, namely (i) improving the horizontal and (ii) vertical integration of policies, (iii) coping with various types of uncertainty and (iv) facilitating stakeholder involvement in line with the challenge of procedural justice. In order to comprehensively analyze different institutional and procedural frames dealing with these four challenges and respective fostering and hindering factors, we focus on countries that share advanced climate change adaptation policies but represent different political systems and cultures. The identified governance approaches are discussed against analytical categories derived from governance literature on policy integration, multi-level governance, risk governance, and participation.

Adaptation to Climate Change: a Challenge of Integration

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Climate change is a growing challenge facing the entire world. Today, most actions are aimed at mitigation. However, some climate change impacts will be unavoidable. This explains a
growing interest in adaptation to climate change. On a political level, adaptation is a challenging concept. At this level, there is a growing literature on “climate policy integration” theory (stemming from the environmental policy integration paradigm). It proposes to take climate change into account in each and every sectoral policy.

This contribution addresses the way to integrate climate change adaptation into policies. We will focus on regional and external adaptation strategies, from a theoretical and practical perspective. First, we will present the concept of adaptation, as a political challenge. The “climate policy integration” theory will be defined and its practical application, which has links with both vertical and horizontal integration of adaptation, will be explained.

A second part of our paper will address the practical implementation of climate change adaptation at two policy levels. We will first analyse regional adaptation strategies and plans of several European countries, with regards to integration of adaptation in different sectors. These policy instruments will be analysed, as well as the perception of adaptation by various concerned actors at the regional level.

Secondly, the focus will be on how adaptation to climate change can be integrated into external policies. This will be studied through development aid. Two different approaches will be described. Institutions such as the E.U. or the World Bank often highlight the need to take climate change into account while working on any development projects. This is the so-called mainstreaming approach. On the contrary, a sectoral approach of adaptation, such as proposed by NAPAs, will be aimed at reducing the vulnerability of a specific sector. Both approaches will be analysed, through scientific and official literature.
Evidence-based Policy Making and Public Participation – Where does Science End and Policy Start?

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The proposed paper intends to shed light on the role of Impact Assessment (IA) in evidence-based policy-making by contrasting the role of public participation in National Sustainable Development Strategies (NSDSs) and the European IA system. Both IA and NSDSs are important instruments for furthering sustainable development in the European Union (EU) and public participation is a key element of both. Although both share these two features, IA and NSDSs vary in their understanding of participation. The aim of comparing participation in the context of IA and NSDSs is to use knowledge gained to make recommendations for the role and design of participation processes in IA.

The paper will begin by introducing two core concepts: Impact Assessment and participation. Four categories of participation will be outlined, of which two will be expanded upon: (1) use of participative methods with the aim of generating input, (2) participation with the aim of stakeholder representation.

The paper will continue by analysing the role of participation in IA and NSDSs, distinguishing categories such as the role of stakeholders in participation (knowledge- or interest-holders), techniques used by participants to influence (bargaining or lobbying) and forms of participation (ad-hoc or institutionalised).
The final section of the paper addresses the consideration that IAs gives to environmental impacts. It will show that IAs examine environmental impacts less frequently than other impacts and will explore possible explanations for this imbalance. Based on the finding that due to the paradigm of rationalisation, IA fails to sufficiently deal with environmental impacts owing to their complexity, the paper will close by sketching a different role of participation in IA, proposing to substitute the paradigm of rationalisation with a more process-oriented view of IA.

Scientific Research in the Field of Impact Assessment – recent activities

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Impact assessment (IA) is a relevant analytic policy instrument that is applied to evaluate major EU strategies prior to their implementation. It provides relevant scientific information on these strategies and thus increases transparency on the actual results of these proposed policy activities. Impact assessment plays a key role in reaching sustainable development as it interlinks with the European Sustainable Development Strategy and thus combines social and environmental with economic elements. In addition to the superior EU level, the member states continuously integrate similar approaches on their national levels.

Appraisal in general and impact assessment in specific form the basis for relevant national as well as EU scientific activities, for example in the recent research projects funded by the EU Framework Programme. Its innovative character draws scientific attention in a variety of disciplines to the instrument whose results then support the development of the IA procedure as well as the political implementation of the instrument. Thus here, research can play a relevant role in reaching sustainable development.
The paper presents selected results of a mapping of scientific IA activities, thereby covering a variety of disciplines as land use, agriculture, energy or climate. The presentation aims at answering the following three questions:

How is IA integrated in recent EU and domestic research activities in a broader or narrower sense?

What kind of research approaches exist that could contribute to the improvement of the different elements of IA (models, quantitative and qualitative analysis, stakeholder participation etc.)?

What kind of research gaps could be identified based on these first mapping activities?

**Participatory processes for the development of a decision support system for climate change impact analysis in coastal areas**

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According to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC 2007), coastal systems and low-lying areas are projected to be increasingly at risk over coming decades. Therefore, there is a growing claim of preservation, protection, planning and management of coastal zones that requires a specific integrated approach. Furthermore, adaptation to climate change is unlikely to be a stand-alone process. It occurs within the existing sectoral and cross-sectoral policy frameworks. According to Olsen (2003) coastal governance includes the laws, institutions, policies and process that affect how coastal resources are utilised and allocated. It probes the fundamental goals and the institutional processes and structures that are the basis for planning and decision-making. However, due
to the environmental and strategic significance of the coast, the coastal governance system is characterised by complexity, and cross jurisdictional planning and management processes relating not only to coastal management and protection, but also to heritage conservation, natural resource management and utilisation, defence, and land use planning and development. Therefore, the understanding of the institutional framework, and the role of the key stakeholders is fundamental when developing tools for supporting decisions in the context of adaptation strategies to climate change in coastal areas. This paper describes the methodological framework of a decision support system (DSS) for risk and vulnerability assessment in the coastal area of the North Adriatic Sea, and presents the results of an end-users involvement process. After a stakeholder and institutional analysis, an on-line questionnaire has been addressed to public institutions whose management and/or administrative competences regard coastal areas, in order to investigate their knowledge on climate change issues, and to have a validation of the DSS methodological development. The survey allowed to gain information that both confirmed the validity of the methodology choices and supplied useful contribution to the framework.

An impact assessment methodology for small scale renewable energy projects in developing countries funded under Dutch policies defined to contribute to the Millennium Development Goals

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Vulnerable groups, such as poor people in developing countries, are often hit hard by the effects of climate change since they lack the resources needed to cope or adapt to the changing
environment. To conduct poverty reduction without compromising on the environment, the Dutch government defined a variety of policy measures. One is the so-called Daey Ouwens Fund, established to implement small scale renewable energy projects in the poorest countries of the world. This Fund aims to contribute to Millennium Developing Goal 1, eradication of extreme poverty, and MDG 7, ensuring environmental sustainability.

This paper describes the methodology developed to get a better understanding of the socio-economic and environmental impact of projects to be implemented under the Daey Ouwens Fund. This methodology uses the multi level “Strategic Niche Management (SNM)” framework to systematically assess drivers and barriers crucial in process of innovation. For three selected projects, indicators are defined within this SNM framework, based on the MGD 1 and MGD 7 and the local socio-economic situation as well as the existing energy system and the innovative renewable energy technology of the project. These indicators are translated into sets of questions to be quantified through a limited number of semi-structured interviews with key persons and questionnaire inquiries of a large number of potential end-users.

The data of the conducted baseline study will be presented in this paper to provide an overall picture of the current socio-economic situation and the energy consumption in the areas where the three selected project are going to be implemented. Based on these data and the SNM framework, an overview will be provided of drivers and barriers for the projects and the expected contribution to MDG 1 and 7. The methodology will be assessed and adapted for the impact monitoring assessment that will be held in 2013.
Earth Systems Governance and Sustainable Development: how to measure and analyze the social dimensions of environmental change, policies and governance structures not fixed on an economics view

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In the current debate over the continued modernization of the public sector, governance has become a key concept that everyone uses. The Governance, in a glance, can be defined as the ways in which government representatives manage in an administrative, legal, public or private sense. However, public governance is associated with a change in management policy. This is a tendency to rely increasingly on self-management in the social, economic and political development, and a new composition of the resulting forms of management. The new model adds to the negotiation, communication and cooperation among all actors, public
policymakers and citizens. In this context, environmental issues have been used to characterize recent phenomena worldwide mostly in terms of economics and technology, particularly through the lenses and dominance of financial interests that influence the processes of global production, consumption, lifestyles and distribution of labor. Yet, in view of the changes taking place also on a global scale, climate change being the primary example, it becomes evident that the economist view of global processes is clearly insufficient and, in more than one way, misleading. The new international order which is emerging seems to bring to the forefront of these processes global environmental change (GEC). Thus, an approach to Earth System Governance must revisit the traditional literature on Governance and assess the gaps in theory that became evident by recent challenges posed by GEC. Thus, an approach to ESG must be understood as being Human driven rather than Nature, yet, with greater interrelationships than in other areas of human activity which are also object of governance related concerns. Finally, this paper will attempt to offer some inroads on both fronts. In other words, policies and governance structures fixed and not fixed on an economics view.

In South Africa, development is strongly driven by neoliberal ideologies and these are in conflict with welfare objectives of water institutions created under the National Water Act. As a result of this conflict, goals for delivery of safe water and sanitation are not being met and many communities have only the barest standards of water and sanitation services. This can be investigated using the

Institutional Path Dependency in Water Governance: Insights from a Perspective on Power

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In South Africa, development is strongly driven by neoliberal ideologies and these are in conflict with welfare objectives of water institutions created under the National Water Act. As a result of this conflict, goals for delivery of safe water and sanitation are not being met and many communities have only the barest standards of water and sanitation services. This can be investigated using the
concept of path dependency wherein an ineffective choice is made which then reproduces itself over time. The paper first looks at the history of how these choices are made and then describes how ineffective institutions of water service delivery reproduce themselves over time. This includes a detailed examination of the power dynamics which reinforce a particular pattern of water management in South Africa.

After understanding these power dynamics, the paper then moves on to look at opportunities to break the current negative patterns in order to address water needs more effectively. Insights from transition theory are employed in envisioning sustainable pathways of water service delivery and the potential space to reach these visions. In dealing with the locked-in situation explained through path dependency, transition theory offers a valuable contribution to effecting positive change.

This paper strives to synergise different methodological approaches to critically explore the architecture of environmental governance and the dynamics of environmental institutions. While path dependency helps us to reframe the dynamics of institutions from a historical perspective, transition theory is helpful to envision the pathways to make change happen and to provide a framework to manage that process of change. Integrating these theories, the paper thus contributes to the development of methodological tools for understanding governance, institutions and policy integration as well as justice, equity and distributional aspects of environmental governance.

VOLUNTARY APPROACHES IN CLIMATE POLICY: COMPARING SWISS AND EUROPEAN TRANSPORT LEGISLATION

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This paper investigates the effectiveness of voluntary approaches in a comparative case study on European and Swiss climate legislation. Voluntary approaches are known to be less environmentally effective and economic efficient than other climate policy instruments but easier to implement and more acceptable for the business community. Voluntary approaches are the preferred instrument for approaching ‘new policy issues’ where more stringent policies and measures could hardly be implemented. However, they are known to dilute or postpone effective legislation. Moreover, voluntary agreements may impose a potential threat on competition due to the high level of collaboration of its signatories (Brau and Carraro, 2004). This case study compares the voluntary accords signed by the European Automobile Manufacturers Association (ACEA) and the Association of Swiss car importers (ASIA) signed in 1998 and 2002, respectively. Whereas ACEA committed to decrease average CO2 emissions from new passenger to 140g/km, ASIA committed to reduce average fuel consumption to 6.4l/100km by 2008. Both agreements failed. Average emissions of new cars in Europe was still greater than 150g CO2/km, and average fuel consumption of newly imported cars to Switzerland was 7.1l/100km in this year. Our case study discusses the reasons for failure and assesses the effectiveness of voluntary agreements as climate policy instrument. Based on 20 expert interviews with Swiss car importers and Swiss and German car experts, the achievements of the voluntary accords signed in Switzerland and the EU are compared. In Europe, stringent legislation had been postponed several times, particularly due to political pressure of German premium car brands (Hey, 2010). In Switzerland, the majority of the interviewed firm representatives shows only low awareness of the motivation and purpose of the agreement and different understanding of responsibility. Swiss car importers tend to behave rather collectively than individually rational.
The development of private governance initiatives in global commodity chains: an integrated approach of behavioural aspects and institutional factors

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Recent decades have seen important changes in the way sustainability challenges are dealt with and the way agricultural sectors are regulated: private actors have become increasingly important in governing and purely private governance initiatives emerged. The so-called roundtables serve as examples of the latter. A roundtable is a private arrangement with the aim to improve the sustainability of a specific global commodity chain. It is a multi-stakeholder platform where only private actors - businesses and non-governmental organizations - have decision-making power.

Different strands of literature emphasize different factors that appear to be significant for the development of these private governance initiatives. For example, collaboration literature focuses on behavioural aspects, such as trust or collaborative advantages, while global value chain literature looks at more institutional factors, including external chain dynamics and trade patterns. However, little is known about the relative importance of the factors that facilitate or hinder the development of such initiatives or their ability to change global commodity chains.
Therefore, this paper seeks to answer the following research question: What determines the ability of private governance initiatives to change commodity chains to operate in a more sustainable way? In order to answer this question this paper combines an institutional with a behavioural approach. To identify significant institutional and behavioural factors, we draw on theories from different disciplines, such as global value chain literature, collaboration literature and new institutional economics. The relative importance of these factors is established through a comparison of the development of two roundtables: the Roundtable on Sustainable Palm Oil and the Round Table on Responsible Soy. The outcome of the paper is a new model that is able to explain the development of private governance initiatives and their ability to change commodity chains.

**Correcting biofuel politics through environmental and social standards – How are environmental and social aspects governed by multi-stakeholder processes?**

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Biofuels have once been touted as a panacea for environmental problems like climate change, poverty alleviation and energy scarcity in rural areas. However, today there is a growing concern about negative impacts caused by massive demand, possibly outweighing most of the benefits. Several standardization committees like the Round Table on Sustainable Palmoil (RSPO), the Round Table on Sustainable Biofuels (RSB) or the International Sustainability & Carbon Certification (ISCC) are developing certification systems to ensure the compliance with socio-ecological criteria. In multi-stakeholder consultation processes, actors from governments, NGOs and the
private sector are working on common criteria. The tentative ex-ante solution to the above conundrum is that negative social-ecological effects should be governed and controlled by new coalitions of different actors of these stakeholder processes. This research will provide an overview of possible outcomes of certification as a marked-based instrument, anchored in voluntary criteria. A crucial point is the participation of unequally powerful actors in the negotiations of these criteria. The research is based on the following questions:

- How can the negotiated standards contribute to effective regulations of environmental problems, and which challenges have to be tackled?
- How are power relations reflected in these multi-stakeholder processes, focussing on the dimension between northern and southern representatives.

This policy study is focusing also on the distribution of negative social and environmental impacts of biofuel production between the global North and South. A crucial aspect is to focus on power asymmetries between stakeholders, which are likely to be hindering a problem oriented procedure.

The desk research will be rounded up by on-the-spot expert interviews carried out in Brazil and Argentina (March-June 2010) and Indonesia (2011), interviewing participants of these multi-stakeholder processes, social movements, producer organisations and certifiers.

**Transnational Business Actors - The Kingmakers of Environmental Regimes?**

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How do business actors influence the output of environmental
regime negotiations? The rise of business power in the wake of globalization has by and large been neglected by mainstream International Relations (IR) theory, which continues to apply a state-centric government perspective to developments in the realm of international regimes. This paper highlights gaps in our understanding of business influence over regime effectiveness and suggests mending it by applying a multi-dimensional concept of business power to a cyclical perspective of regime formation.

The focus of the paper is to explore the extent to which business actors manage to influence the effectiveness of international environmental regimes. The first section identifies a void in existing IR theory regarding transnational business actors as sources of power. The second section will demonstrate how this void can be filled and pair Doris Fuchs’ concept of business power with Oran Young’s cyclical perspective on regime formation in order to construct an analytical framework for business power in global governance. The third section applies this framework to empirical data about the Swedish government’s role in the formation and implementation of the Kyoto Protocol. Finally, its findings are used to reflect upon a future research agenda for environmental governance scholarship.

Legitimacy and Effectiveness of NGO/CBO involvement in sanitation and solid waste provisioning in the modern epoch of governance

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Sanitation and solid waste management are among the most crucial issues on the international and national agenda that need urgent redress in order to achieve the millennium development goals. The urgency has been brought about by the urban population explosion that is currently witnessed in most cities in the developing countries. The main proposed way to alleviate this
problem was to embrace a shift from government reliance to a modern governance system involving new architects in the sanitation and solid waste provisioning. Among the important architects are the non-governmental organizations and community-based organizations which have been widely acknowledged as opportunities for alleviating the sanitation and solid waste management situation especially for the urban poor. Nonetheless whether these organizations are perceived as important architects has to be measured by their legitimacy and effectiveness in sanitation and solid waste provisioning. It is against this background that this papers sought to answer the question how legitimate and effective are NGOs and CBOs involved in sanitation and solid waste provisioning? The question of effectiveness and legitimacy of NGOs and CBOs is of extreme importance to their acceptance as important architects and to solutions of sanitation and solid waste management problems. A critical analysis of how effective and legitimate these organizations are, was made through a comparison of three urban centres in East Africa. In view of their potential to improve urban sanitation and solid waste management, the structures, functions, and operations of the organizations are critically examined in section 2. Section 3 provides an in-depth analysis of the NGO/CBO effectiveness and legitimacy as well as potential short comings in this respect. In conclusion section 4, summaries the findings and attempts to give a way forward for effectiveness and legitimacy of NGO/CBO under the modern governance systems in sanitation and solid waste provisioning.
From Common Pool to Common Property: Collective Action, Institutional Arrangements and Property Rights in Community Forestry

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The increasing depletion of India’s forest resources over the last few decades have now affirmed that forest conservation priorities cannot be determined by isolating local communities, which depend so much on it for their day-to-day livelihood. Thus, recent years have witnessed greater rights, responsibilities and powers being extended to the local communities to manage their immediate forest resources sustainably. The shift of management responsibilities to the local communities also involves a shift in property rights over the forestland. Forests, which were state property under the state-controlled system of management, are now managed as ‘common property’ under the community control. Thus, a detail understanding of the concepts and processes such as collective action, property rights, community institution and resource management regimes are required to better assess the process of community’s involvement in forest management.

Scope of the paper
In the background of above discussion, the present paper aims to examine the process of collective action and the role of the local institution in the whole process in a forest fringed village
community.

Objectives:
To be specific, the objectives of the paper are the follows:
• To examine the process of collective action, and the factors responsible for its success at the community level for management of local forest resources
• To explain the process of institutional arrangement, and highlight the formation and compliance of various rules, i.e. formal and non-formal; and working and non-working

Methodology:
Empirical work for the present paper was being carried out in one village named Nagiapasi in Dhenkanal District of state of Orissa in INDIA. Participant observation method combined with focused group discussion and case study was adopted to elicit relevant data about the process of collective action and role of local institution in community forestry.

Sustainable land management: new ways towards regional environmental governance?

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Searching for potential improvements of governance strategies and concepts to solve complex land use problems is an ongoing activity in science and practice. Currently problems in land management are seen in an up to now missing integrative approach, limited reflections of complexity, fragmented problem analysis, incomprehensive strategy development, and development of solutions focussed only on specific institutional arrangements. As one part of a new research programme ‘Sustainable Land Management’ in Germany funded by the Federal Ministry of Education and Research (BMBF) innovative theoretical,
methodological and conceptual approaches including appropriate institutional settings will be developed, used and valuated. The Authors are responsible for one of the two scientific coordination projects of the new research programme with a specific focus on successful tools for sustainable land management in Europe in combination with inter- and transdisciplinary approaches. The full paper and presentation will answer the question what are potential key elements, processes and institutional settings in governance of land use towards sustainability. First different definitions and meanings of “sustainable land management” in an European context are explained. Second the variety of contents, processes, strategies, instruments and concepts will be analysed. Third, based on a first valuation, a set of key elements will be presented and discussed. The discussion has to include new strategic principles (adaptation), connection and integration of different topics (land use management, climate adaptation and sectoral planning) as well as process based innovations (integrated land use and supply chain management). In consequence new lines for discussing environmental governance will be presented.

Social development and freshwater fisheries conservation: lessons learned from monitoring conservation agreements in the Colombian Amazon

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Many environmental issues can be attributed to misaligned distribution of the costs of conservation and the benefits of conservation. For instance, biodiversity represents value for the global community, but biodiversity protection imposes various costs on local communities in forested areas of developing countries. Correcting this misalignment requires presenting these local communities with appropriate incentives. Conservation
agreements – negotiated transactions in which conservation investors finance direct social benefits in return for conservation actions by communities – are one tool for doing so. The results of this approach depend crucially on effective monitoring of both ecological and socio-economic impacts to verify that environmental and development objectives are met in a socially equitable, economically efficient, and financially sustainable way. Monitoring also is needed to verify that parties to the agreements are in compliance with their commitments. This paper will present the conservation agreement model and demonstrate the central role of robust monitoring frameworks, using the example of agreements between Conservation International and communities in the Colombian Amazon. These agreements are designed to protect forest areas and two endangered species of fish that are important to local livelihoods and have a high commercial value in neighboring countries. A key feature of this project is that the agreements both depend on and strengthen social and resource governance within the partner communities, thereby promoting self-determination while enhancing the overall context for socio-economic development. At the same time, lessons generated by this project inform emerging frameworks for scaling up the approach to advance conservation and development at the national level, requiring integration with national policies. The paper will conclude by identifying the strengths and limitations of the conservation agreement approach, emphasizing that effective monitoring is essential for success and exploring the implications of scaling-up for design of monitoring frameworks.
The reciprocity of lifestyles and governance in sustainable development

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Drawing on the results of three empirical studies on the (partial) correlation of lifestyle affiliation and behaviour relevant to sustainability (food, energy use, fair trade), the paper presents a conceptual framework that relates the characteristics of different lifestyle groups with their (potential) reaction and contribution to different governance approaches in the field of sustainable development.

Different lifestyles or milieu affiliations are semi-aware decisions about preferences and modes of comportment that assure social cohesion and personal identity in dynamic and fragmented societies. Due to their impact on action different lifestyles have considerable effects on consumption patterns and resource use. The concepts of lifestyles and milieus, if not restricted to inequity and classes, are not only suitable for marketing purposes but provide insights into state and future trends of societal differentiation and their possible effects on action. This renders them highly relevant for political decisions that tend to induce societal changes. Overall policy goals like the reduction of greenhouse gas emissions or the vertical and horizontal integration of sustainability targets into public policy on all levels require different changes in the behaviour of different lifestyle groups.
when it comes to tangible policies and programmes. At the same time these policies have an impact on the economic, social or environmental performance of different groups and shape their options for action. This reciprocity of policy outcomes and lifestyle-group characteristics, so far, lacks a systematic scientific exploration that goes beyond the design of awareness rising campaigns and also incorporates other governance styles like procedural or hierarchical steering and financial incentives. The presented conceptual framework will be discussed with regard to its potential for designing target group specific policies, highlighting those lifestyle characteristics that have an effect on the capability of different societal groups to cope with or take profit of different policies and political styles.

“West is Best” Housing Trends in the Philippines: the impact of lifestyle choices on household energy consumption patterns.

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This paper explores the link between consumer lifestyle choices, housing construction trends and household electricity consumption in the Philippines. We know that infrastructure can lock in certain consumption patterns for years to come, resulting in the need for energy-intensive heating in the northern hemisphere or cooling in the south. This paper considers the lifestyle preferences of a growing middle class as well as Filipino return-migrants who pour remittances mostly into housing construction and electrical appliances. For this socio-economic group, “west is best”: there is a preference for homes that emulate single-unit styles from the US and Europe, using materials and designs that are inappropriate for the local climate. With no natural ventilation, the service of air-conditioning becomes necessary. More significantly, the air-
conditioning unit has become a symbol of success. This paper combines a biophysical and social understanding of consumption, drawing form economic anthropology, to approach the question of how environmental change can be addressed through a deeper understanding of consumer lifestyles, consumption trends and mobility patterns. This paper concludes that changes could be made at the institutional level in the Philippines to enforce building codes that would govern natural ventilation, but that a deeper understanding of global influences on local consumption is also necessary. Consumption patterns tend to be treated at the level of a nation or a region, whereas certain consumption patterns stem from globalization or the increased flow of people, ideas and remittances. Trends in the “north” can influence lifestyle choices in the “south”, which leads to challenges but also presents opportunities for transitions towards more sustainable forms of energy consumption. The conclusion can be extended to similar contexts in other developing and emerging-economy countries.

Contemplating household consumption behaviour and environmental change: a novel reflexive diary approach

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The relationship between expressed attitudes and actual behaviour in the context of sustainable development is complex and difficult to apply in a policy-relevant manner. The household, however, represents a key ‘lens’ for understanding the environmental impact of consumption patterns and for instigating policy designed to change consumer behaviour. This paper reports on the novel use of a reflexive household diary and discusses the benefits to be gained by doing so, in particular, the time allowed for contemplation of behaviour by diarists, and subsequent identification of major
'behavioural turning points’ in order to mitigate against environmental change.

The research assessed the use of a household diary approach as a means of framing and collecting household environmental impact data, and, critically, as a mechanism to provide in-depth data on a range of behavioural antecedents. Given that the reflexive diary forms part of a sequential mixed method approach this paper will reflect upon the methodology in addition to discussing the findings of this research, with specific regard to the way in which the societal and cultural motivators of, and barriers to, household behaviours and their environmental consequences can be captured. In particular, the paper will highlight the ways in which such behaviours are germinated, mediated and propagated by social systems, and prevailing governance arrangements.

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Socio-environmental change in the Argentine Chaco

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The Argentine Chaco eco-region is a forest biome of unique importance due to its continuity in terms of area, and biodiversity treasures. In the last decades of the twentieth century, agricultural expansion has represented a growing threat to the ecosystem and for the people who inhabit it. Due to this process, significant
ecological changes, and social and demographic transformations, are taking place, parallel.
The aims of this paper are to analyze the socio-environmental change occurred after the expansion of soybean cultivation in the Argentine Chaco in the 1990s, and examine the consequences of such expansion in environmental and socio-demographic processes.
To perform this analysis, we examined the relative impact of changes in agrarian production in general and the introduction of soybeans in particular, on demographics, socioeconomics and environmental dynamics, through path analysis. This analysis carried out at departmental level, considering a total of 69 departments of the Argentine Chaco.
As socio-environmental change models development, as their interpretation, are based on the detailed analysis of the literature, where the main theories of the issue were collected. The analysis consisted in contrast these hypotheses with empirical data to finding a general pattern explaining the process of socio-environmental change for the Argentine Chaco in the 1990s.
The model developed explained a high percentage of variation between departments in the growth of soybean and in its social and environmental effects. We develop a path analysis that explains a high percentage of variance of migration (62%), and in lesser extent, the rural population (39%) and poverty (13%), and in which soybean is associated with the increasing rate of deforestation (effect coefficient of 0.46).
The results show that soy has had different effects on the socio-demographic conditions according to the state of maturity of the agricultural frontier.
NIGERIA’S CHANGING ENVIRONMENT AND PASTORAL NOMADISM: REDISTRIBUTION OF PAINS AND GAINS.

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Nigeria’s peasant cattle production is based in its semi-arid north. The area's aridity becomes a major problem to cattle in the dry season. Herds are protected by bringing them down to the southern parts that are usually wetter at such times. Presence of tsetse fly in the south, particularly in the rainy season precludes sustained all year round grazing in the south. This sets the stage for migration back to the north at the onset of rains in the south. A number of social events have been observed that suggest possible change in the way this transhumance is conducted. The Fulani herders from northern Nigeria appear to be staying longer in the south. They are also turning sedentary and pressurizing local resources and farmlands more intensely leading to violent conflicts with their farming hosts in the south. On the other hand, some southern farmers now have successful cattle production enterprises based on the tsetse fly prone Fulani cattle breeds. This study seeks to find out if these trends indicate a negatively changed northern environment that is turning more hostile to peasant cattle production and promoting greater pressures on the south. It also seeks to find out if the trend shows a positive change in the environment of southern Nigeria in terms of a changed tsetse fly habitat and decline in its populations. The study is to be approached through surveys involving the Fulani herdsmen operating in southern Nigeria and their host communities. Results are expected to lead to a paradigm shift in understanding of ethnic clashes in Nigeria in the light of environmental change; a country report on migration behaviour; a demonstration of positive effects of environmental change; and understanding of situations in which positive environmental change may lead to negative social impacts.
Effect of climate change on rural food security, social cohesion and stability in West and Central Africa

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Although there is sufficient evidence of increasing poverty and related issues associated with climate change (CC) in Africa, the interplay of food security, social cohesion and stability in rural communities are rarely emphasized. A survey was carried out in Ghana and Cameroon, to assess rural farmers’ perceptions of CC and its effects on livelihoods, social cohesion and stability. The results indicate that rural communities are aware of climate change and perceive it as decreasing rainfall, increasing temperature, declining crop yield, shifts in seasons, loss of produce and death of animals. The consequences are high food prices, increased hunger and poverty, increased migration by men and women in search of fertile farmlands (65%), and to cities for ‘better’ jobs. Household sizes are small (≤ 6), headed mostly by women (≥ 50%) and old (≥ 60 years) men, with limited capacity to adapt to CC. Farm labor is expensive, with high deficits at peak periods of farming. Borrowing of food and money during crop failures, and having difficulties in paying back limit social cohesion. Food gathering expeditions for cheap alternative sources of protein like snail have become more frequent, done mostly by children (12-18 years) and women at night who have to cover long distances (5–10 km), sometimes across national borders in order to have sufficient quantities for home consumption and for the market. Consequently, women and children are exposed to social vices and associated risks. These factors play negatively on social cohesion and stability. Food crises
in Africa in the past 2 years are supportive of interplay between food security, social cohesion and stability. Efforts should be made to support rural farming communities with necessary equipment, training on improved farming methods and off-farm income generating activities, with emphasis on women who make up more than 50% of agricultural labor force.

Social and Institutional Consequences of Climate Change to Fishing Communities in the Philippines

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More than half a million small fishers in the Philippines have been availing of loans from Quedancor, the credit arm of the Department of Agriculture. The financing scheme has been quite successful with repayment rate at 95%. However, the occurrence of more frequent natural calamities such as typhoons; as well as pests and diseases, due to climate change has affected the productivity of fisheries, thus, hindering fishers from paying and renewing their loans. Failure to access credit could disable them to continue venturing on fishing activities and could eventually jeopardize the welfare of their entire household. The inability of creditors to pay their loans and meet their obligations also impair, to a large extent, the financial operation and viability of the lending institutions. This study analyzes the natural risks and risk management practices of these fishers. It recommends mitigation mechanisms to minimize the impact of natural calamities. Moreover, it suggests a bridge financing scheme that can be an effective and efficient instrument to enable fishers to carry on their livelihood activities and support their families’ basic needs and slowly recover from their losses.
Benefit sharing mechanisms and governance issues in Participatory Forest Management-REDD related projects. A Community Forest case-study in Tanzania

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The current debate on climate change, especially with respect to the role of REDD projects and the push for the recognition of community (participatory) forest management as a carbon mitigation option represents a potential for communities to receive benefits from carbon sequestration. A recent study in Tanzania has estimated that communities can receive financial benefits in thousands of US$ annually from the sale of their forest carbon credits. This notwithstanding, such kind of projects are expected to generate potential social and environmental costs with related risks of conflicts if benefit sharing and governance issues are not well addressed. However the identification and prioritization as well as the economic value of all these benefits and costs are still premature. An understanding of what these expected benefits from sustainable forest management and REDD projects are, how their (total) value can be assessed and who are stakeholders and actors in participatory forest management (PFM) can be useful in formulating equitable benefit sharing mechanisms based on principles of “good governance” that could be adopted in REDD projects implementation. The paper deals with these topics on the
basis of empirical results based on a participatory action research carried out in the Angai Village Land Forest Reserve, Liwale District, in Tanzania in 2010. Guidelines for formulating governance mechanisms to reduce risks of negative social consequences and enhance benefits from PFM_REDD projects for local forest resources management are proposed. Equitable benefit sharing in PFM is considered one of the most important issues for community cohesion and conflicts solving/managing and in the avoidance of leakage or other risks in REDD projects.

Towards an agri-environment index for biodiversity conservation payment schemes

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The United Nations proclaimed 2010 to be the International Year of Biodiversity. Europe’s biodiversity currently faces a rapid loss within agricultural landscapes, which implies a decline of various ecosystem services that are of socio-economic value. Against this background, increasing attention is to be paid to farming practices that contribute to the maintenance and enhancement of biodiversity and ecosystem services. Therefore, the development of conservation payment schemes that take account for the costs and benefits of biodiversity conservation management actions is a major challenge for present European agri-environmental policy. Hence, the aim of the paper is to give suggestions about how an agri-environment index (AEI) can be designed by taking into account specific ecological and economical factors that reflect benefits and costs of biodiversity conservation. For that purpose, two different environmental indices are used as role models: the Environmental Benefits Index (USA) and the Biodiversity Benefits Index (Australia). Main findings are that the general structure of an AEI is
recommended to be a benefits-to-costs ratio, whereby the conservation benefits are accounted for by the following factors which evaluate:
certain criteria that value the ecological quality of a site and point out its significance for biodiversity conservation (Conservation Significance Factor) a criterion that reflects the connectivity of the site which is an important factor for species migration (Connectivity Factor) criteria that estimate the potential biodiversity outcomes induced by specific management actions (Conservation Management Factor)
The Cost Factor reflects the amount of money that the landholder demands as compensation payment for his conservation services. The paper points out that an AEI is a promising approach to encourage and compensate farmers for biodiversity-friendly management actions. An improvement of the effectiveness and efficiency of European conservation payment schemes is a decisive contribution to biodiversity conservation in agricultural landscapes.

Effectiveness of national incentive design options for reducing emissions from deforestation

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REDD+ (Reducing emissions from deforestation and forest degradation and the enhancement of carbon stocks) emerges as promising incentive mechanism for tropical forest protection. However, besides a few demonstration projects, requirements for its successful implementation are so far only discussed theoretically at the international policy level. While REDD+ is expected to yield poverty reduction and biodiversity co-benefits besides emission reductions, its policy design options pose several risks to socio-economic effectiveness and environmental integrity. We use an expert survey – ranging from international policy
makers to local REDD+ project stakeholders - to rank the perceived significance and likelihood of these risks for national REDD implementation. Additionally, the survey asks for the perceived effectiveness of different policy design options to minimize the risks. A cluster analysis of the survey results assesses the perceived policy design options to achieve socio-economic effectiveness and environmental integrity according to regional, topical or stakeholder groupings.

The results shed light on the most importantly perceived risks to national REDD+ implementation. They furthermore display the disparity in the perception of appropriate policy measures for risk mitigation among stakeholder groups. Understanding these differences will not only help to improve national forest protection measures, but also provide insights for the international REDD+ policy process in a Post-2012 climate regime.

Biofuel as Social Fuel: Introducing Socio-Environmental Services as a Means to Reduce Global Inequity

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The increasing use of energy crops for biofuel production has caused a significant shift in cultivation strategies of the agricultural sector. But the impact of biofuel production and use is not merely an agricultural one. Much more noticeably, it has become an issue of public debate, which is every so often, but – as will be discussed – falsely, reduced to the perceived trade-off provocatively labeled as ‘food vs. fuel’.

If, however, the western standard of mobility so offensively confronts the continuous strive for comparable standards in emerging countries or sufficient food in parts of the developing world, it remains questionable, whether the production and use of biofuels can meet its promise of sustainable progress.
To enable an analysis of the different trade-offs, this paper introduces a conceptual framework of socio-environmental services. By expanding the conventional construct of environmental (or ecosystem) services to explicitly include the social dimension, the framework accommodates for the fact that providing these services is often embedded in a complex system of global (economic, ecological as well as social) interdependencies, exemplified by the case of biofuel production and use. Recently, the economic idea of direct payments for environmental services (PES) has received much attention given its potential contribution to both environmental sustainability and the social alleviation of poverty. By systematically linking the expanded concept of payments for socio-environmental services (PSES) to the three functions – procedural, distributive, and compensative – of justice, the framework will be introduced to mitigate the current gap between mainstream economic analyses and the ongoing efforts to account for and integrate social inequity.

Lecture Room A

F8: Sustainability Transition in Industrial Countries
Time: Saturday, 09/10/2010: 4:30pm - 6:00pm
Chair: Rainer Quitzow, Freie Universität Berlin (FFU)

TRANSITIONING TO SUSTAINABILITY IN SASKATCHEWAN POWER PRODUCTION

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This paper hypothesizes the future of Saskatchewan power production based on the theory of transition management. Power generation law and policy in Saskatchewan over the last century to the present is analyzed as a key component of a socio-technical
regime. Understanding the legacy of law and policy is important given sustainability concerns and the realization that significant changes will be required in trajectories of development putting less strain on natural capital and ecosystem services.

This paper examines the critical relationship between governance strategies at the macro socio and political landscape level and the particular policy mix that is found in the socio-technical regime of power generation in Saskatchewan. This exercise is informed by transition management theory and also the alternative explanations of path dependency. Switch points critical to the trajectory of power generation development are identified and used to illustrate and assess the plausibility of these theoretical concepts. Current landscape developments in Saskatchewan, including the emergence of concerns for human-induced climate change, the development of wind power and even the re-emergence of nuclear power generation as a policy option, may facilitate a transition towards greater sustainability. These sustainability paths are juxtaposed against the development of Saskatchewan’s oil sands and the development of carbon capture sequestration technology. Possible future alternative pathways to sustainable power production are outlined and critiqued in the current Saskatchewan governance context.

**Governance for sustainable development as “strategic public management”: the Swedish sustainable development strategy and the National Environmental Quality Objectives**

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This paper compares the respective contributions of the Swedish sustainable development strategy (SDS) and the country’s National Environmental Quality Objectives (NEQOs) in establishing what Steurer and Martinuzzi (2005) refer to as “strategic public
management”, an ideal model of what an effective governance framework for promoting sustainable development might look like. Key elements of “strategic public management” that are considered are the definition of a clear set of goals with a flexible implementation process for their achievement, the facilitation of policy learning and policy integration and the meaningful engagement of relevant non-governmental stakeholders. The paper identifies the central achievements and challenges of the SDS and the NEQOs in establishing these central elements of “strategic public management” in practice. In this context, it also addresses how these two governance instruments have fared in tackling some of the past shortcomings of sustainable development strategies in delivering an effective framework for “strategic public management”, resulting in the “administered strategies” described in Steurer (2008).

It argues that the NEQOs’ relative success in influencing policy making processes in Sweden is linked to its strong political and institutional foundation as compared to the comparatively weak political mandate and low level of institutionalization of the SDS. Among other things, it relates this to the different political processes leading to the establishment of the two instruments. Despite the achievements of the NEQOs, however, the paper also identifies important challenges for leveraging the NEQOs' strong monitoring system for shaping concrete policy making processes and engaging stakeholders. Based on these insights, the paper concludes with a discussion on the future potential of the NEQOs and the SDS as frameworks for “strategic public management” in Sweden and draws more general lessons for the establishment of more effective governance frameworks for sustainable development.
Governing Technological Diffusion to Address Climate Change

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Most of the controversies surrounding how to structure climate change mitigation and adaptation – including financing, what counts as action, and how to measure progress against uncertain goals – have technological change as an underlying assumption. Technological transformation is at the heart of mitigation in the energy system, and technological change (cultivars and management) will be a prime contributor to mitigation and adaptation in agriculture and water. Therefore, the issue of governing the diffusion of GEC-related technology is critically important. The standard analyses that assume we just need to “get the prices right” are insufficient in a world where markets are at best imperfect and equitable well-being is as much a goal as efficiency. Our research examines the ways in technological change is guided by such governance factors as governments (regulation and policy), firms with existing expertise and infrastructure, international and national needs for security, innovation networks, and leadership.

We will illustrate the determinative nature of these governance factors through case studies of two major energy technologies – nuclear power and biofuels – in three countries – Brazil, Sweden, and the United States. Primary data comes from interviews with policymakers and firm managers who have been involved in these changes in the three countries. Open-ended and structured questions about a range of driving or enabling factors allow us to establish one or more configurations of factors that can inform the governance of future technological change related to mitigation and serve as the basis for further research into technological change related to adaptation.
Climate protection activities at the local level play an important role towards responding effectively to global climate change. The research at hand deals with the subjectively nominated success factors and barriers relevant to the implementation of climate protection measures in local municipalities. Determinants for the transition towards energy sustainable communities (Schweizer-Ries, 2008) are the subject-matter of a longer research tradition (Schweizer-Ries, 2009). In order to work out recommendations for a German federal policy instrument designed to support municipalities towards climate protection, we chose to concentrate on municipalities having applied for the above mentioned funding. Some of these municipalities also plan to realise a process towards “zero-emission” as a long-term project. With qualitative interviews, we assessed in a first research step, how local stakeholders perceive the climate protection measures inside their municipalities, how they were successfully implemented, where social barriers appeared and how they could be minimised. Thus, we were able to collect subjective determinants of success or failure for zero-emission processes. We also examine the role of the citizens, and make the case for increased public participation. The main insights of these first results are that within the administration of local municipalities, cross-sectional interaction and communication are crucial, along with the need to engage a socially skilled permanent employee to manage the implementation of measures and activate external stakeholders. Involving citizens is pivotal in shaping a zero-emission community identity and reality. The research is designed to shed some light on the role the above mentioned...
support programme and therefore serves as policy counselling. The policy instrument seems to be able to promote most factors of success within local authorities, only minor adaptations are necessary.
Conference Dinner

Restaurant „Hackescher Hof“

Formerly a traditional wine restaurant, the „Hackescher Hof“ still provides an historical ambience today. The site has been restored and the restaurant opened its doors in 1996, reminding the past and giving a glance of the times of Berlin coffeehouses in the 1920s.

Hackesche Höfe

One of Berlin's most prominent and most popular sites are the „Hackeschen Höfe“. They constitute Germany's biggest closed courtyard area with eight connected courtyards on 9200 m². Initially completed in 1907, the architecture comprises a mix of different styles, most often associated with Art nouveau. In the second half of the 20th century the courts suffered from destruction and misappropriation before the site was finally protected as a historical landmark in the 1970s and restoration has been finalised in 1997.

How to get there?

Transport to the location of the conference dinner will be assured by public transport. The closest S-Bahn station to the restaurant is „Hackescher Markt“.

From the subway station Thielplatz take the line U3 (direction to Nollendorfplatz) and change at Wittenbergplatz to subway-line U2 (direction to Ruhleben). At Zoologischer Garten you can take any S-Bahn (S3, S5, S7 or S75) via Hauptbahnhof, which will bring you to the station Hackescher Markt.
Alternatively, you are invited to leave the S-Bahn at the station Friedrichstraße and take a short walk in order to get a glance of the area surrounding the Hackeschen Höfe. This might be especially interesting, when the weather is fine.

If you wish to do so, you can go to Friedrichstraße the same way described above, or take line U3 until Nollendorfplatz, change on line U2 in direction of Pankow until Potsdamer Platz and finally take line S1 or S2 via Friedrichstraße.

Please also take a look at the subway maps which you can find in the conference bags in case of any uncertainty.
Notes: