



IHDP

International Human Dimensions Programme
on Global Environmental Change

2008

IHDP Annual Report



2008 Highlights

International Human Dimensions Workshop New Delhi, India



IDGEC's "Institutions and Environmental Change" Book co-published with MIT Press



Global Environmental Change and Human Health Science Plan Released



GECAFS organises international conference on "Food Security and Environmental Change: Linking Science, Development and policy adaptation"



Knowledge, Learning and Societal Change approved by the IHDP Scientific Committee



Earth System Governance is accepted as IHDP's newest core Project



UGEC begins workshop series



GLP Science Plan now in Chinese



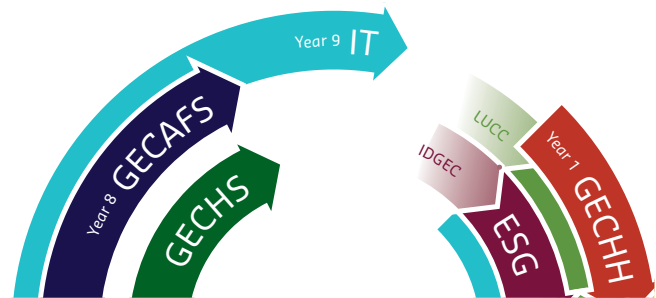
IRG becomes an IHDP Pilot Science Project



New, Feature Rich IHDP website at www.ihdp.org



GECHS and IT Synthesis Process



IHDP Science-Policy Dialogues on Energy, Sustainability and Societal Change



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The reporting period for the Annual Report 2008 includes the last 3 months of 2007.

This is a publication of the International Human Dimensions Programme on Global Environmental Change.

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IHDP Progress 2008



The year 2008 was our first full year of operation under the terms of the IHDP Strategic Plan 2007-2015. Thus, it is appropriate to look at progress during the course of the year through the lens of this plan and to make some overall observations about accomplishments in these terms.

As always, the programme's principal products take the form of cutting-edge science carried out under the auspices of our focussed projects and designed to enhance understanding of human-environment interactions. It is a pleasure to be able to report that the IHDP science portfolio finished the year in a robust and well-balanced condition. During 2008, the synthesis volume reporting the main findings of our project on the Institutional Dimensions of Global Environmental Change (IDGEC) appeared in print; two mature projects (Global Environmental Change and Human Security or GECHS and Industrial Transformation or IT) moved into the synthesis process; three projects (Urbanization and Global Environmental Change or UGEC, Land-Ocean Interactions in the Coastal Zone or LOICZ, and the Global Land Project or GLP) operated in productive phases; one new project (Earth System Governance or ESG) was added to the portfolio, and planning committees were in place and working actively on prospective projects dealing with Integrated Risk Governance (IRG) and Knowledge, Learning and Societal Change



(KLSC). IHDP also continued to participate actively in the joint projects operating under the auspices of the Earth System Science Partnership. All these elements of the science portfolio are described in detail in the body of this report, but the bottom line is clear: IHDP science is thriving.

While it places primary emphasis on the support of high quality science, the Strategic Plan also identifies work on the science/policy interface as well as capacity development and dissemination as additional priorities for IHDP. The year 2008 was an active time on all these fronts. We have worked hard to introduce an emphasis on policy relevance into all our activities as well as to undertake specific initiatives focussing on the science/policy interface. A high point of 2008 was the Science-Policy Dialogue on Energy, Sustainability and Societal Change held in June in Santa Barbara, California. The International Human Dimensions Workshops, taking place in Delhi during October constituted the largest and certainly one of the most successful efforts we have undertaken in the realm of capacity development. As many readers will know, IHDP has continued to upgrade and diversify its efforts in the area of information dissemination. The flagship

publication, IHDP Update, is evolving into a scientific journal in contrast to a newsletter, and new ventures, such as the IHDP new, user friendly website, have been added to the suite of IHDP publications. Without reducing our commitment to the cutting-edge of science, IHDP has proceeded with vigour to pursue the new priorities set forth in the Strategic Plan.

Despite these obvious signs of success, we have become aware increasingly during the last year that the world is experiencing rapid changes that have far-reaching implications for a science programme like IHDP. We have entered an era in which human-environment interactions and the socio-ecological systems to which they give rise are marked by patterns of change that are often non-linear, sometimes abrupt and quite frequently irreversible. We can no longer afford the luxury of focussing our attention on conducting science and assuming that others will take responsibility for applying the resultant knowledge to human and social concerns. Climate change is an obvious case in point, but it is not the only one. As scientists, we must take responsibility for identifying and advocating science-based responses to these concerns. I am therefore delighted to report that the Packard Foundation has agreed to help us not only to understand the demands that are likely to be placed on science programmes in the coming years but also to evaluate the merits

of alternative ways for IHDP to respond to these demands. This process will be a major priority during 2009.

Finally, let me take this opportunity to pay tribute to the efforts of members of the IHDP Secretariat located on the UN Campus in Bonn, and of those who run the International Project Offices of our focussed projects. It is the exceptional competence and dedication of these individuals that allow us to achieve so much with such a lean budget and the burden of engaging in a constant effort to mobilise the core funds needed to make the whole IHDP programme successful.

Oran R. Young

Chair, IHDP Scientific Committee

Pushing the Human Dimensions Agenda Forward



Andreas Rechkemmer,
Executive Director, IHDP

The period from 2007 to 2008 has been a time of renewal and strategic development for the International Human Dimensions Programme.

To mark the close of its first decade and to provide advice on priorities for the second decade, IHDP's institutional sponsors organised an external review in 2006 to assess the Programme's performance during the period spanning from 1996 to 2006. The review committee concluded that IHDP had come of age scientifically, and made a number of recommendations, highlighting the value of the development of a strategic plan to guide the efforts of the Programme during the coming decade that included capacity development, the science-policy interaction and cutting-edge science as programmatic priorities. These priorities now form the three pillars of IHDP's workplan for the second decade.

The result of this effort was the publication and dissemination of the IHDP Strategic Plan 2007-2015, which provides intellectual and strategic guidance for those endeavour-

ing to implement IHDP's ambitious goals in three principal areas: cutting-edge research; capacity development, community building and outreach; and the science-policy interaction. The new Strategic Plan has proven to be an excellent outreach tool and has enhanced the programme's visibility and performance quite dramatically over the past year.

The IHDP Secretariat's mandate is to facilitate the development of IHDP programme, to implement strategic priorities and to coordinate the communication of these priorities. Its core functions encompass coordination of research activities, capacity development, the organisation of major events and policy dialogues, and the dissemination of outcomes and results of IHDP activities. Following the Strategic Plan guidelines, the Secretariat has continued to allocate programmatic resources towards generating and fostering new knowledge relating to the human dimensions of global change and their impacts on society. Our strategic focus until next year (2010) is to build effective struc-

tures and capacities so as to meet the challenges set by the Strategic Plan.

Scientifically, 2007 and 2008 have been highly productive. The Programme's original core projects have continued to move toward their synthesis phases. During this period, the Institutional Dimensions of Global Environmental Change (IDGEC) – like Land-Use and Land-Cover Change (LUCC) before it – passed through the synthesis process with a focused effort to harvest the project's scientific legacy. Several volumes of IDGEC results are being co-published by IHDP and MIT Press.

A particularly satisfying development is the rise of IHDP's science initiatives, which are already becoming important research endeavours, such as the Earth System Governance Project (ESG), IHDP's newest core project designed to build on and expand the efforts of IDGEC, the Integrated Risk Governance Project (IRGP), an activity co-sponsored by the Chinese IHDP National Committee, Knowledge, Learning and Societal Change (KLSC), which was approved at the 2008 Scientific Committee meeting, and the Vulnerability, Resilience, and Adaptation initiative, an effort to highlight and upgrade work on a topic that IHDP has treated as a crosscutting theme for some years. IHDP has also played a prominent role in the activities of the Earth System Science Partnership (ESSP) and continues to co-sponsor all of its four flagship research projects.

2007 and 2008 also proved to be an active period for IHDP's more than 60 national committees and national contact points. After the founding workshops in Uganda and Tanzania, the official restart of the UK National Committee, and the inauguration of Argentina's National Committee in August 2007, work is underway to explore options for national committees and national workshops in several other countries such as Italy, Spain, Portugal, Costa Rica, Mozambique, Uruguay and Colombia. In addition, a new strategy for IHDP National Committees has been drafted within the realm of the new IHDP Strategic Plan 2007 – 2015, which will harness the results of surveys that were circulated to the national committees during the first half of 2008.

Much of 2008 was devoted to the organisation of IHDP's 7th International Science Conference, the so-called "Open Meeting", which will be held in Bonn at the World Conference Center on the UN Campus, from 26-30 April, 2009. This Open Meeting, entitled "Social Challenges of Global Change", will consist of four days, each of which focused on a particular challenge having to do with resources, social equity, demographics and the institutions needed to address these issues. With this theme, IHDP is reaching out to new communities and the broader social sciences, policy arenas and the private sector, while at the same time incorporating

its core research issues into a collaborative, cross-cutting fabric.

The relocation of the IHDP Secretariat from the University of Bonn to the new UN Campus in Bonn is a consequence of the addition of UNU as IHDP's third institutional sponsor in 2007, joining ISSC and ICSU. That same year, the IHDP Secretariat in Bonn was officially recognised as the 14th UN Agency in Bonn and as a part of the United Nations University. The move to the UN Campus in general and the sponsorship of the UNU in Bonn in particular has certainly offered exciting opportunities in 2007 and 2008, helping to strengthen IHDP own staff and enhancing IHDP's regular and informal interaction with a range of people and institutions active in the policy arena.

Andreas Rechkemmer

IHDP Executive Director

Growth in a Changing World

2008 has witnessed the growth of IHDP's core and joint projects as well as the strengthening of the role of the Scientific Committee (SC) to provide intellectual leadership and to guide the implementation of current and new initiatives. Also inspired by the clear mandate of the Strategic Plan, the IHDP Secretariat in Bonn has organised a set of successful events and activities in the field of capacity development, communications and outreach and the science-policy interaction.





A Year in Review

Since human actions lie at the heart of global environmental changes, efforts to understand, and to respond effectively to global environmental changes require major inputs from the social sciences. It is no longer sufficient to engage in research on the biophysical elements of complex and dynamic systems with either the assumption that human actions are largely exogenous to the workings of these systems or that they constitute only occasional perturbations that can be safely set aside for the purposes of analysis. What is required is a science of coupled systems or, as many now call them, socio-ecological systems, in which the impacts of human ac-

tions are fully integrated into analyses of global environmental changes.

In 2008 and following the mandate established by the IHDP Strategic Plan 2007-2015, IHDP has continued to develop more effective means to attract the attention of leading social scientists and to bring to bear the knowledge and methods of the social sciences in efforts to understand global environmental changes.

It has also made better use of collaborative mechanisms, such as the Earth System Science Partnership (ESSP) and projects carried out jointly with the International Geosphere-Biosphere Programme (IGBP), to develop effective means of integrat-

ing the contributions of the social sciences and the natural sciences to meet the challenge of understanding global environmental changes.

Lessons learned from the experience of the last decade have made it clear that there is a need to couple knowledge production with an active effort to develop capacity around the world that can both engage in relevant work and stimulate a mutually rewarding dialogue with the policy community. 2008 has been an outstanding year in that regard. In a rapidly changing world, IHDP has managed to adapt to increasing challenges while continuing to fulfil its mandate, as reflected in its Strategic Plan 2007-2015.

Networking Activities

IHDP cooperates closely with the other three international global change research programmes (IGBP, DIVERSITAS and the WCRP), both in bilateral collaborations and within the Earth System Science Partnership (ESSP). Further core partner organisations include international bodies of the UN System, in particular the Intergovernmental Panel on Climate Change (IPCC). IHDP cooperates with UNFCCC in the SBSTA consultations as well as in the Nairobi action programme. Within the UNU system, IHDP has cooperated with UNU-EHS through a series of public events, such as the Bonn Dialogues, as well as with UNW-DPC in the realm of capacity development for sustainable water management, as it happened during the International Human Dimensions Workshops (IHDW) in Delhi in October 2008.



IHDP Secretariat

With the integration of the IHDP Secretariat into the UN in Bonn family, the IHDP Secretariat became more international and diverse as well. 35 persons from 19 different countries contributed to implementing the new strategic vision of IHDP in 2008. 15 unpaid interns and scholars complemented the team of core staffers and temporary project assistants (together 9.4 full-time equivalents). Five consultants joined the Secretariat during 2008 for the IHDP Open Meeting 2009 and the Earth System Governance Project Office. More than 60% of the team were female and the majority has a master's degree or higher.

19

Countries

9

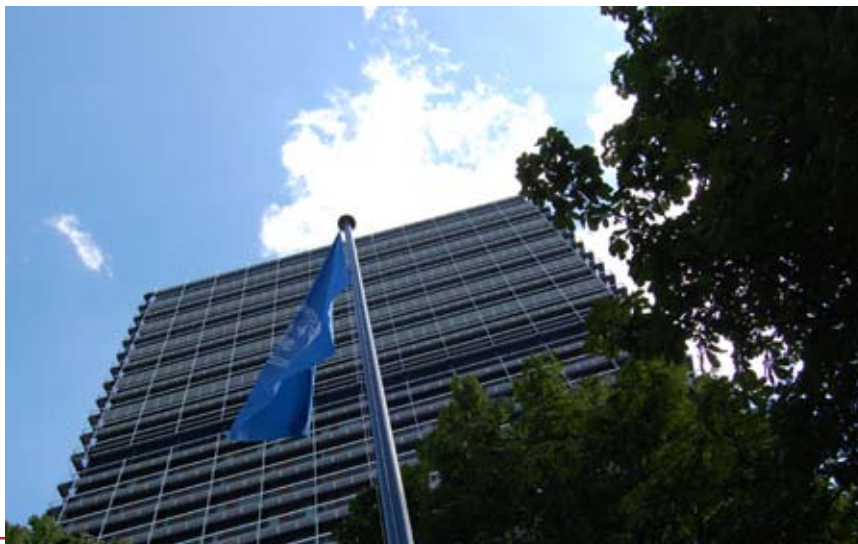
Staff

15

International
Interns and
Scholars



About IHDP



IHDP was established in 1996 to address critical gaps in international research, which have gained wider attention over the years and now lie at the heart of international science policy. These include:

- the gap in contributions of the social, economic and cognitive sciences to global change research
- the gap in capacity for international and interdisciplinary collaboration in global change research
- the lack of coherent long-term research strategies for policy-relevant research topics.

Critical Gap in Social Science Contributions: IHDP is involved in generating new knowledge to answer critical questions of interest to the policy world, and in particular in improving the quality of environmental assess-

ments. The importance of improving upon, for instance, the Special Report on Emissions Scenarios (SRES) used by the Intergovernmental Panel on Climate Change (IPCC) to project anthropogenic emissions of greenhouse gases is widely acknowledged. IHDP is the leading international body for international and interdisciplinary collaboration in highly policy-relevant areas of global change research, contributing to the enhanced understanding of the interactions between human societies and the physical environment.

Critical Gap in Collaborative Capacity: While conducting “big” science in multidisciplinary, multinational scientific teams is a standard practice throughout most natural sciences, such collaborative work is not as widespread in the social sciences. Social sciences do not have developed

an institutional and financial base, and nationally as well as internationally, methods of trans and interdisciplinary research are not yet sufficiently anchored in the social science system. Thus, capacity building is a core concern of IHDP’s activities.

Critical Gap in Long-Term Research Strategy: Global change research is mostly driven by the emergent awareness of the challenges that are currently facing our societies. New challenges keep emerging but answers to those challenges require profound insights into the functioning of the highly complex Earth system. It is therefore not useful to limit research to only the current political questions of the day. IHDP is committed to long-term strategic approaches and scientific excellence in its research projects. As the planning and implementation of such proj-

IHDP's Institutional Sponsors

In 1996, ISSC and ICSU established IHDP under their sponsorship. At the beginning of 2007, the UNU joined ICSU and ISSC as a third institutional sponsor. The three sponsors oversee and guide the overall development of the Programme. They are responsible for the appointment of the members of the Scientific Committee and the selection of the Executive Director.



ects requires collaboration with the practitioner community so as to ensure the relevance and usefulness of future findings, IHDP embeds systematic policy-interaction into all its research projects. Global change research is a vast and complex area with a multitude of actors and stakeholders involved. Successful international collaboration requires systematic analysis and identification of potential candidates for productive partnerships. The individual establishment of collaborative research, however, is time consuming and management intensive, siphoning valuable resources from the scientific community. The IHDP Secretariat provides these highly specialised services and efficient structures for international collaboration in order to reap the full scientific benefits of the network's research activities.

IHDP's Mission

To foster, coordinate, and conduct social science research that helps humans to understand and address the challenges of global environmental change and improve societal responses

To contribute to interdisciplinary attempts, including both natural and social sciences, to understand the interactions of humans with the natural environment that cause global environmental change

To strengthen the capacities of research and policy communities toward a shared understanding of the social causes and implications of global changes.

To facilitate dialogue between science and policy

IHDP Scientific Committee

Prof Oran R. Young, Chair
Dr Roberto P. Guimaraes, Vice Chair
Dr Geoffrey Dabelko, Vice Chair
Prof Hebe Vessuri, Vice Chair
Prof Sander van der Leeuw, Treasurer

Appointed Members

Prof Katrina Brown
Prof Ilan Chabay
Prof Patricia Kameri-Mbote
Prof Gernot Klepper
Dr Liu Yanhua
Prof Elena Nikitina
Dr Balgis Osman-Elasha
Prof Germán Palacio
Prof Henry Shue
Prof Dr Ernst Ulrich von Weizsäcker

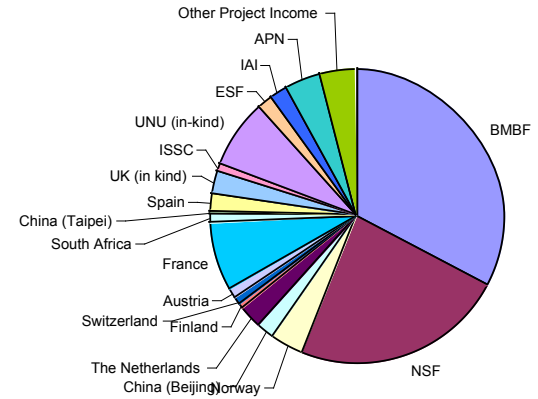
Ex-Officio Members

Prof Deliang Chen
Dr Heide Hackmann
Prof Konrad Osterwalder
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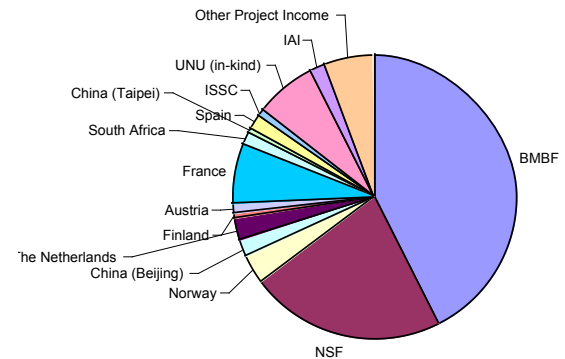
IHDP Budget



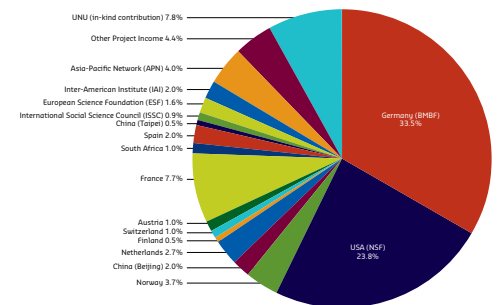
Donors 2008



Donors 2007



Donor Countries



Income

With the adoption of the Strategic Plan in 2007 IHDP entered the second decade of its activities, and the IHDP Secretariat became a fully integrated part of the UN system. This financial report reflects both the initial phase of implementation of the new strategy and the consolidation of IHDP after the transition year.

With a core budget of USD 1,185,143 the overall IHDP budget remained stable, both the German BMBF and the US National Science Foundation (NSF) renewed their commitment as IHDP's core contributors until 2010. Nevertheless, the budget shift of the previous years continued, as BMBF further reduced its contribution by 28% and the share of the core grants in the overall budget decreased by 13%. National Contribu-

tions increased slightly to 22% of the budget, with the first contribution of the British Economic and Social Research Council (ESRC) to the visiting scholar program. Further contributions were granted by IHDP's established partner countries France, the Netherlands, Spain, China, Norway, Austria, Switzerland, South Africa, and Finland.

Special project contributions towards scientific conferences and workshops included grants by long-standing partners such as IAI or APN for the International Human Dimensions Workshops (IHDW) 2008 in New Delhi, and first time support of the European Science Foundation for the Berlin Thinkshop and the Public Outreach Event on Knowledge, Learning and Societal Change.

Expenses	
Scientific Projects and Initiatives	\$295,139
Grants IHDP Core and Joint Projects	\$125,000
New Scientific Projects and Initiatives	\$60,149
Academic & Project Staff Science Management	\$109,990
Capacity Development	\$144,400
IHDW 2008	\$81,312
Seed Grants & Stipends (incl. In-kind)	\$28,235
Academic & Project Staff Capacity Development	\$34,853
Governance, Travel and Networking	\$150,933
IHDP Governance Meetings	\$68,514
Project Liason & Networking	\$59,450
Academic & Project Staff Governance and Network	\$22,968
Communications, Publications and Outreach	\$132,316
Public Events and Science-Policy Dialogues	\$22,774
Scientific Publications, Reprot, and Magazines	\$38,472
Academic & Project Staff Science Management	\$71,070
Administration and Management	\$439,364
Management and Administrative staff	\$304,138
General Office Cost and Administrative Services	\$56,686
UN Campus Facilities (provided in-kind by UNU)	\$78,540

25,4% - Keeping the Edge

In 2008, IHDP provided block grants to eight established core and joint projects, and further invested in the development, planning and inception of five new projects and initiatives.

12,4% - The Next Generation

With the largest ever IHDW summer school and the establishment of a visiting scholars program, IHDP started to build up Capacity Development as its second strategic pillar.

11,4% - Fostering the Dialogue

Public panels, the second IHDP Science-Policy-Dialogue, a new and feature rich website, and an upgraded set of attractive publications serve to reach out to new communities and increase the accessibility of IHDP science. In 2008, Communications issued four UPDATE magazines, three issues of the electronic newsletter EZINES, and co-edited two books, besides printing GECHH Science Plan.

Innovative Science for Contemporary Challenges

In 2008, IHDP continued developing new scientific initiatives to ensure an up-to-date and relevant IHDP project portfolio and to respond to the increasing demand for human dimensions research.



IHDP Science in Brief

Two of IHDP's core projects, Industrial Transformation (IT) and Global Environmental Change and Human Security (GECHS), initiated their synthesis processes in 2008 and are prepared to complete their research activities in 2009.

IT's main activity in 2008 has been the preparation of a set of publications finalising the scientific work on transitions towards sustainability in Asia and the influence of globalisation processes on such transitions. GECHS has taken part in a wide range of national and international activities, including the project's participation in the Challenge Program research consortium and, the Consultative Group on International Agricultural Research (CGIAR), as well as its co-sponsorship of the international "Living with climate change: Are there limits to adaptation" conference held in February, 2008, in London.

The Urbanisation and Global Environmental Change Project (UGEC) has also continued with its successful work in both the establishment of regional networks and through much collaboration with other actors.

In October 2008, a new, long-term international research initiative, the

Earth System Governance Project (ESG), was formally established as a core project within IHDP. The development of theories to understand Earth system governance, as well as strategies to advance it, is one of the most important and possibly also difficult tasks facing the social sciences today. The Earth System Governance Project will now start to build the large, open network needed to reflect the interdisciplinary, international and multi-scale challenges that lie ahead.

The Earth System Science Partnership (ESSP) is implementing four global-scale joint projects on water resources, food systems, the carbon cycle, and human health, as well as a small set of integrated regional studies. The ESSP is currently developing a strategic plan. Its community-wide activities include a new bio-energy activity as well as interactions with international conventions and assessments, including the United Nations Framework Convention on Climate Change (UNFCCC) and the Intergovernmental Panel on Climate Change (IPCC). All of these activities have had input from IHDP.

Over the last 12 months, the Global Carbon Project (GCP) has

had its most prominent presence in the media following the release of various analyses in conferences and publications on the main sources of CO₂ emissions, the saturation of the southern ocean sink and the potential to prevent tropical deforestation. As a network and on behalf of the ESSP, Global Environmental Change and Food Systems (GECAFS) is leading a major proposal with the 15 centers supported by the CGIAR entitled "Climate Change, Agriculture and Food Security". A major international Conference in Oxford on Food Security and Environmental Change was held in April, 2008.

The Global Water Systems Project (GWSP) was given the mandate of providing a research agenda for fully integrated and multidisciplinary research that will yield policy informing results regarding the global water system. Major activities and achievements include the GWSP Digital Water Atlas and the Global Water System Lexicon.

The now formally established Global Environmental Change and Human Health (GECHH) project will provide a centre point for all three ongoing ESSP joint projects, each of which focusing on systems that direct-

ly influence human well-being and health. The GECHH project planning process identified a set of key types of global environmental change that are known or suspected to have significant consequences for human health.

IHDP also continued to sponsor two ongoing joint projects with the International Geosphere-Biosphere Programme (IGBP). Since 2007, the Global Land Project (GLP) has successfully established nodal offices in Japan, China and the UK. The nodal offices are now all functional and provide valuable support to GLP, whose scientific results have been published in a number of articles and special issues.

The Land-Ocean Interaction in the Coastal Zone Project (LOICZ) has devoted the last 12 months to intensifying the implementation of its three priority topics and has also held a number of workshops focusing on methodologies, synthesis and promoting strategic partnerships. A scientific highlight was the publication of the LOICZ-affiliated EU project European Lifestyles and Marine Ecosystems (ELME).



Initiatives

The 15th session of the IHDP Scientific Committee in October 2008 officially approved Integrated Risk Governance (IRG) as pilot project, now the most advanced research initiative in the IHDP network. The proposed 10 year international effort in risk research aims to understand how systems and societies can deal with risks that exceed current coping capacities.

The project will study risk occurrences as events within the dynamics of socio-ecological systems. In so doing, it will focus on the entry and exit transitions marking the beginning and end of emergencies.

Great interest currently exists in Knowledge, Learning and Societal Change Initiative (KLSC), for which two preparatory meetings were held in 2008. The Berlin Think Shop, taking place on 19 and 20 of February, 2008,

brought together experts from a wide variety of related disciplines and was followed by consultations on the topic held in Santa Barbara in June. During the 15th Scientific Committee Meeting in New Delhi in October 2008, the presentation of the new initiative was received with great enthusiasm and was given the go ahead for further development. By early 2009, a formal KLSC Scientific Planning Committee will be established.

A major event and platform for the initiative on Vulnerability, Resilience and Adaptation (VRA) was the Resilience 2008 conference, held in Stockholm from 14 – 17 April. As the first major event focused on the notion of resilience, the conference provided a platform that brought scientists and professionals working with the complex dynamics of interconnected social-ecological systems together.



141
Academic
Articles

26
Books

35
New Research
Projects and
Partnerships

+100
Presentations
presenting the projects and
their work at relevant scientific
conferences.

24
Endorsed PhDs

These numbers are based on information provided to the Secretariat by the projects about their activities, definitions were largely left to the individual projects although numbers have been adjusted to represent similar definitions.

International Core and Joint Project Offices



6

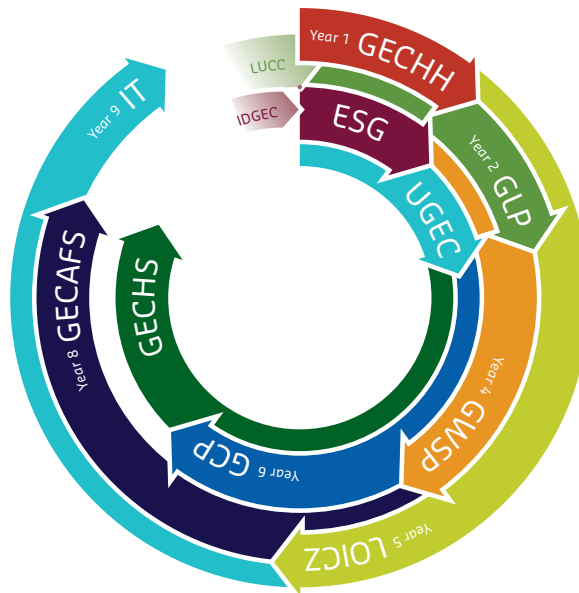
Core Projects

4

Joint Projects

3

Initiatives



Project Lifecycles

IHDP officially has eleven projects in all different stages of their ten year lifecycles. Three projects are in their eight and ninth years, and are now reaching their synthesis phase where they will collate their results into a complete work. Four projects were initiated within the past two years, sometimes based on the results of previous IHDP projects that have already finished their lifecycle like in the case of Earth System Governance, which is based on the research synthesis of the former IDGEC project.

Core Projects

IHDP currently has 6 core projects. Core projects are conceptualised and supported by IHDP, sometimes in partnership with various other programmes to identify and generate new, cutting-edge research activities and priorities, promote international cooperation, and build linkages between policy-makers and researchers.

Earth System Governance (ESG)

Global Environmental Change and Human Security (GECHS)

Global Land Project (GLP)

Industrial Transformation (IT)

Land-Ocean Interactions in Coastal Zones (LOICZ)

Urbanization and Global Environmental Change (UGEC)

ESSP Joint Projects

IHDP is currently conducting 4 projects in conjunction with the Earth System Science Partnership (ESSP). These projects are formed and run in a similar way to the core projects, but with support from all partners of ESSP. In addition, IHDP cooperates with ESSP to endorse other networks.

Global Environmental Change and Food Systems (GECAFS)

Global Carbon Project (GCP)

Global Water Systems Project (GWSP)

Global Environmental Change and Human Health (GECHH)

Monsoon Asia Integrated Regional Study (MAIRS)

System for Analysis, Research and Training (START)

Initiatives

Initiatives are potential IHDP projects. These projects are in the process of preparing and reviewing a science plan to present to the IHDP Scientific Committee.

Integrated Risk Governance (IRG)

Integrated History of People on Earth (IHOPE)

Knowledge, Learning and Societal Change (KLSC)

Endorsed Networks

Mountain Research Initiative (MRI)

Population-Environment Research Network (PERN)

Young Human Dimensions Researchers (YHDR)

Earth System Governance



On 16 October, 2008, the IHDP Scientific Committee approved the Earth System Governance Science and Implementation Plan and appointed the Scientific Steering Committee, thereby marking the formal start of the Earth System Governance Project as its newest core science project.

The need for concentrated and integrated research on earth system governance has its rationale in the fact that humans now influence all biological and physical systems of the planet, and human activity is generating change that extends well beyond natural variability. At the same time it is apparent that the institutions, organisations, and mechanisms by which humans currently govern their relationship with the natural environment and global biochemical systems are not only insufficient, they are also poorly understood. More effective systems of governance are needed. Research on institutions and governance in times of earth system trans-

formation must be about people who are drivers of global environmental change and at the same time part of any solution. It must be about places in all their variety and diversity, yet seek to integrate place-based research within a global understanding of the overall challenge. Eventually, this research will need to be about our planet. It is the task of developing integrated systems of governance, from the local to the global level, that ensure the sustainable development of the coupled socio-ecological system that the Earth has become.

Earth system governance is defined in this project as the interrelated and increasingly integrated system of formal and informal rules, rule-making systems, and actor-networks at all levels of human society that are set up to steer societies towards preventing, mitigating, and adapting to global and local earth system transformation.

The notion of governance refers here to forms of steering that are less hierarchical than traditional governmental policy-making, rather de-centralised, open to self-organisation, and inclusive of non-state actors that range

from industry and non-governmental organisations to scientists, indigenous communities, city governments and international organizations.

The Earth System Governance Project, while being essentially a scientific effort, is also designed to assist policy responses to the pressing problems of earth system transformation.

All analytical problems studied in the project have profound policy implications.

Architecture
Agency
Adaptiveness
Accountability
Allocation & Access
Knowledge
Norms
Scale
Power

Earth System Governance Science Plan

The Earth System Governance Science Plan has been written over the course of one and a half years by the interdisciplinary and international Scientific Planning Committee and has been extensively reviewed by more than 50 colleagues, from both academia and political practice.

The drafting process drew on a consultative process begun in 2004 that included presentations, discussions and working sessions at a series of international events including a workshop at the ISA Annual Convention 2008, San Francisco 25 March 2008; a semi-plenary session at the

2008 Berlin Conference, 23 February 2008; a side-event at the United Nations Climate Change Conference, Bali 8 December 2007; and various presentations and round tables at the 2007 Amsterdam Conference on the Human Dimensions of Global Environmental Change, 24-26 May 2007.

On 16 October 2008 the start of the Earth System Governance Project, and the publication of the first synthesis book of the former IDGEC project was celebrated at the reception "From IDGEC to ESG - Passing the Torch" in New Delhi.

Selected Books

Earth System Governance: People, Places and the Planet. Science and Implementation Plan of the Earth System Governance Project.

Biermann, Frank, Michele M. Betsill, Joyeeta Gupta, Norichika Kanie, Louis Lebel, Diana Liverman, Heike Schroeder, and Bernd Siebenhüner, with contributions from Ken Conca, Leila da Costa Ferreira, Bharat Desai, Simon Tay, and Ruben Zondervan. 2009 forthcoming. [available at www.earthssystemgovernance.org]

Institutions and Environmental Change: Principal Findings, Applications, and Research Frontiers.

Young, Oran R., Leslie A. King, and Heike Schroeder. 2008. Cambridge, MA: MIT Press.

Selected Articles

'Earth system governance' as a cross-cutting theme of global change research
Biermann, Frank. 2007. 'Earth system governance' as a crosscutting theme of global change research. *Global Environmental Change. Human and Policy Dimensions* 17: 3-4, 326-337.

'2013 Problems' in International Politics on Climate Change: Can Japan Lead the Debate over Institutional Architecture?"
Kanie, N. 2008. '2013 Problems' in *International Politics on Climate Change: Can Japan Lead the Debate over Institutional Architecture?* SEKAI , Vol.780, June 2008, 215-227. (in Japanese)

100+
Countries of
research

23
Presentations at
workshops and
conferences

50+
Researchers
already
active in the
project

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GECHS
GLOBAL ENVIRONMENTAL CHANGE
AND HUMAN SECURITY

Flood victims in the US.
Photo: Rock Creek Red
Cross

Global Environmental Change and Human Security

Synthesizing 10-Years of Human Security Research

The Global Environmental Change and Human Security (GECHS) project was established in 1999 as a core project of the IHDP. GECHS research places environmental changes within larger socioeconomic and political contexts, and focuses on how environmental change influences human security. Human security is interpreted as the freedom to take actions that promote well-being in response to changing environmental conditions. GECHS investigates means for enhancing human security within the context of multiple and interacting processes of change. Key themes that have been addressed by project members include climate change vul-

nerability and adaptation, water governance, rural livelihoods and food security, conflict and cooperation in transboundary resource management, and interactions between global environmental change and globalization. The GECHS project actively engages with the policy community, emphasizing outreach of research results to practitioners and decision makers, in addition to the academic community.

In mid-2008 GECHS moved into a 2-year synthesis phase, whereby the project findings will be consolidated, synthesized and disseminated. This synthesis involves not only comparing the ambitions of the GECHS Science Plan to the actual project results, but

also elaborating on the new research questions that are likely to drive future research on global environmental change. Key research questions and cutting-edge research methods and frameworks will be identified. The GECHS synthesis also provides an opportunity to discuss and communicate the policy dimensions of GECHS research. In 2008 this synthesis involved production and dissemination through publications and conference presentations, highlighting human security perspectives and research to the wider global environmental change community and also capacity building. Much of the work done during 2008 will feed into and make the foundation for the

GECHS involvement in IPCC scoping meeting

One of the milestones of the GECHS project is to integrate the concept and perspectives on human security into focus of the IPCC reports and into the more general climate change discourses. Major achievements were made in 2008 in that respect. GECHS led and coordinated the writing of the report, “Disaster Risk Reduction, Climate Change Adaptation and Human Security”, that address the nexus between climate change and disaster

risk, with a special focus on security implications. The report served as a background and support for a Norwegian proposal to undertake an IPCC Special Report on the management of extreme events.

The scoping meeting for a possible IPCC Special Report on “Extreme Events and Disasters: Managing the Risks” takes place 23-26 March 2009 and a number of GECHS experts will contribute.

Human security
Sustainable adaptation
Water governance
Conflict and cooperation
Migration
Multiple stressors
Gender
Equity

GECHS Synthesis Conference, “Human Security in an Era of Global Change”, that will take place 22-24 June, 2009 at the University of Oslo, Norway. The conference presents an opportunity to gather researchers, policy makers and stakeholders from different fields to discuss the interactions between various processes of change and what they mean for human security, and to reflect on how notions of human security are being transformed in the face of global environmental change. The conference will also serve as a forum for discussing future research agendas and linkages to policies and practitioner communities.

Climate Adaptation and Development Work

The GECHS IPO has been involved in a project where the links between climate adaptation and development work have been analysed in three Development Fund (Norwegian NGO) projects. The analysis discusses how climate change adaptation can be addressed in development activities based on a comprehensive approach to climate change adaptation. It was published as the report entitled “More Than Rain: Identifying Sustainable Pathways For Climate Adaptation And Poverty Reduction” and it was launched and presented during the 30th anniversary of the Development Fund, September 9 in Oslo, Norway.

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Warm-up conversation between scientists and artists at Tipping Point Norway

Tipping Point Norway

On behalf of the Global Change Committee of the Research Council of Norway, GECHS, in collaboration with the PLAN project and Tipping Point in the UK, organized the meeting “Tipping Point Norway” June 23-24. The event brought together 80 artists and scientists to discuss the climate change challenge and to

explore new ways of communicating the climate change challenge to new audiences. The event culminated in an event about “The Art of Adaptation.” This event was held at the Fridtjof Nansen Institute and it was open to the wider research and policy community.

IHDW Workshop Sustainable Adaptation to Climate Change

The GECHS IPO held an International Human Dimensions Workshop (IHDW) on the topic sustainable adaptation to climate change, October 11 – 17 in New Delhi, India. This seminar aimed at catalyzing thoughts, discussions and future research proposals on social transformation in the face of climate change, and establish networks among the IHDW participants and the wider human dimensions research community. A total of 18 participants, representing both science and policy, from 13 different countries attended the training.

Science-Art ThinkTank

GECHS is actively involved in a network and a ThinkTank that aims to build on the ideas and relationships established at the Tipping Point Norway event in linking science with art especially on the climate change theme.

Guest Lectures at the IPO, University of Oslo

During the spring GECHS has organized three guest lectures at the Department of Sociology and Human Geography, University of Oslo, Norway. Professor Andrew Dugmore gave the lecture “Climate Change and Human Security: What can we learn from the past?”,

March 28. Dr. Habiba Gitay gave the presentation “Towards a Strategic Framework on Climate Change and Development for the World Bank Group”, May 23. Ilan Kelman gave a presentation on “Sustainability, development, islands and disasters”, May 23. Stephen Gardiner, University of Washington, gave the lecture “Why ethics and climate change”, December 3.

New Book “Environmental Change and Globalization: Double Exposures”

In the book “Environmental Change and Globalization: Double Exposures”, GECHS Associate Robin Leichenko and GECHS chair Karen O’Brien present a framework for analysing the interactions between two of the most transformative processes of the twenty-first century, namely, global environmental change and globalisation. By using various case studies the authors show how the interaction between these processes creates situations of double exposure. Drawing upon recent and current climate-related events such as Hurricane Katrina in New Orleans, recurring droughts in India and the melting of Arctic sea ice, the case studies each demonstrate different pathways of interaction between glo-

balisation and global environmental change. Through the exploration of these pathways of double exposure, the book also shows how broader human security concerns including growing inequalities, growing vulnerabilities, and unsustainable rates of development are integrally connected to both processes of global change. The double exposure framework not only sheds light on the challenges raised by these two global processes, but also reveals possibilities for using the interactions to generate positive opportunities for action. The book has been selected to receive the *2008 AAG Meridian Book Award for Outstanding Scholarly Work in Geography*.

Are There Limits to Adaptation?

GECHS co-sponsored and participated in the international conference “Living With Climate Change: Are There Limits To Adaptation”, that took place February 7-8 at the Royal Geographical Society in London. The conference was organised by the Tyndall Centre and the PLAN project with the objective to consider strategies for adapting to climate change, in particular, exploring the potential barriers to adap-

tation that may limit the ability of societies to adapt to climate change and to identify opportunities for overcoming these barriers. Papers from the meeting are being published by Cambridge University Press in an edited book titled “Adapting to Climate Change: Thresholds, Values, and Governance.” The book will be launched at the GECHS Synthesis Conference in June 2009.

GECHS Background Report to Support ISDR / Norway Proposal to the IPCC

GECHS has led and coordinated the project “Disaster Risk Reduction, Climate Change Adaptation and Human Security”, funded by the Norwegian Ministry of Foreign Affairs. The project involved writing a report that addressed the nexus between climate change adaptation, disaster risk reduction and human security with a special focus on extreme weather events. A comprehensive bibliography was also produced on the more recent literature on these themes. The report and the bibliography served as background and support for the International Strategy for Disaster Reduction (ISDR). Norway led the proposal to the IPCC on the need for an IPCC special report on the human consequences of climate change and the role of disaster risk reduction in climate change adaptation. This proposal was presented at the 28th session of the IPCC in September, 2008 and an agreement was made that a scoping meeting will take place in Oslo, Norway in early 2009.



Industrial Transformation



Sustainability Transitions in Asia

Global sustainability is increasingly influenced by the developments in rapidly industrialising and urbanizing Asia. Over the last two years IT undertook the challenge to better understand and evaluate the extent and conditions under which the ongoing changes can be inductive to sustainability. One of the most important highlights of this work is the realisation about the potential for alternative, more sustainable, development pathways in Asia, based on indigenous resources and capabilities operating in the context of globalisation.

The research results on this theme have been brought together in a recently released special issue of the Technological Forecasting and Social Change journal on “Sustainability Transitions in Developing Asia: Are alternative development pathways likely?” (2009). The second important realisation is about the role of the particular economic specificity of Asia and the great number of so-called sustainability experiments in instigating change in that region and in

transforming the current, qualitatively different from the OECD but still unsustainable, systems of provision. Research on these issues has been initiated at an international workshop in Chiang Mai in January, 2008 and the results will be published in the course of 2010 in a special issue of Environmental Science and Policy.

System innovation approaches are very useful in analysing technological and industrial changes significant to environmental sustainability by placing them in a broader institutional and governance context

In both strands of research, the IT projects employed insights from the emerging stream of system innovation literature. This is firstly because the system innovation approaches are very useful in analysing technological and industrial changes significant to environmental sustainability by placing them in a broader institutional and governance context, and secondly, because the frameworks have so far been tested in the OECD realities only. The IT project investigates whether they could also be applicable for the analysis of the Asian context.

IT in the Delhi IHDW 2008

IT participated in the IHDP Human Dimensions Workshop (IHDW) in Delhi in October, 2008. The IT workshop, “Transitions to Sustainability through System Innovation”, explored the alternative development pathways that have a significantly lower burden on the environment. It also dealt with the ways in which unsustainable but powerful, well established and stable socio-technical systems that fulfil human needs such as food, energy supply, mobility and health care can be replaced by alternative systems with considerably lower environmental footprints over the longer term.

Public Debates

Between 2006 and 2007, a series of four public debates took place under the general theme of “Cross-thinking about sustainability”. The Industrial Transformation project and The Dutch Knowledge Network on System Innovation (KSI) were the main organisers and partners for the events.

The debates covered issues including globalisation as a driver for sustainability, hypermobility, the meat industry and climate change. Each of the meetings brought a range of participants including researchers, ministry and industry representatives, NGOs, international organisations and even a Dutch political party for the protection of animals. Reports from these meetings are available from the IT website and the most interesting outcomes of these public discussions will be compiled in a forthcoming book by the Industrial Transformation project.

Industrial Transformation Synthesis Process

The synthesis process of the Industrial Transformation project has already begun with the compilation of initial insights into the form of a synthesis book. The official launch of the synthesis process will take place at the IHDP Open Meeting 2009 in Bonn, Germany during a semi-plenary round table. During the conference, the project will also discuss the possibility of creating a follow-up project to Industrial Transformation, including thematic and organisational aspects, as well as exploring opportunities for a host organisation.

Innovation

Socio-technical system

Sustainable development

Environmental governance

Technology

Industrial transformation

Sustainability transition

System innovation

Industrialisation

Capitalist developmental state

Socio-ecological regime

Metabolic profile



Industrial Transformation
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Land-Ocean Interactions in Coastal Zones

LOICZ is an international research project involving scientists from across the globe who have been investigating changes in the biology, chemistry and physics of the coastal zone since 1993. Since 2003, LOICZ has expanded its areas of research to include social, political and economic sciences in order to address the human dimensions of the coastal zone.

The research results are used to explore the role humans play in the coastal zone, their vulnerability to changing environments and the options to protect coasts for future generations.

LOICZ aims “to provide the knowledge, understanding and prediction needed to allow coastal communities to assess, anticipate and respond to the interaction of global change and local pressures which determine coastal change.” In addition, it aims to provide science that contributes towards understanding the Earth system in order to inform, educate and contribute to the sustainability of the world’s coastal zone. Therefore, LOICZ seeks to inform the scientific community, policymakers, managers and stakeholders on the relevance of global environmental change in the coastal zone.

34 research projects

Currently, 34 research projects from 16 countries are affiliated with LOICZ. The countries are: Brazil, Canada, China, France, Germany, Ireland, Italy, Japan, the Netherlands, Portugal, Russia, Singapore, Sri Lanka, Taiwan, UK, and the USA. About 25 projects have recently finished and five projects will be affiliated in the near future.

Scientific Highlights



New Working Group on Land-based Nutrient Pollution and the Relationship to Harmful Algal Blooms

At a workshop at the GKSS Research Center on 28 July, 2008 a new SCOR/LOICZ/CAS Working Group 132 on “Land-based Nutrient Pollution and the Relationship to Harmful Algal Blooms in Coastal Marine Systems” was initiated. For science see Special Issue: Glibert, P.M.; Burkholder, J.M.; Granéli, E. & Anderson, D.M. (2008): HABs and Eutrophication. *Harmful Algae* 8 (1): 1-188.

New section “Young LOICZ”

to promote and support capacity building of young scientists, students, and pupils. Young LOICZ has age-specific programmes and working stations for students to explain aspects of global environmental change.

New LOICZ East Asia Regional Node in Yantai, China

On 23 September, 2007, LOICZ opened its third Regional Node at the Yantai Institute of Coastal Zone Research for Sustainable Development, China.

LOICZ research confirms Europe’s seas at risk

Research of the LOICZ-affiliated project European Lifestyles and Marine Ecosystems (ELME) confirms the serious state or future risk of decline of Europe’s regional seas, particularly when the complex web of interactions between different human pressures is taken into account.

End-Users of Project Results

A major effort to update a national assessment of US estuaries was undertaken as part of the National Estuarine Eutrophication Assessment.

A policy digest of LOICZ biogeo-chemical assessments culminated in the formal report to UNEP: The Role of the Coastal Ocean in the Disturbed and Undisturbed Nutrient and Carbon Cycles – A Management Perspective.

LOICZ is also contributing to a new UNEP/GEF project “Enhancing the use of science in International Waters projects to improve project results” in which LOICZ methodology will be applied.

Coastal Zone Management

Socio-Ecological Systems Assessment

Governance in Coastal Areas

Deltas at Risk

Harmful Algal Blooms

Arctic Change

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Urbanization and Global Environmental Change

New Projects, Partners and Activities

In the last year the UGEC project office helped plan, organise, and oversee two UGEC international workshops on urban responses and resilience to climate change. They led and participated in international workshops; the 'Urban Responses to Climate Change' workshop, which took place in New York City in September, 2007, and the 'Climate Change Resilience in an Urbanizing Western Africa' workshop held in Dakar, Senegal, in February, 2008. The project also held its 5th Scientific Steering Committee meeting in February 2008, giving UGEC SSC members and project associates the opportunity to interact with urbanization scholars from the Western African countries.

UGEC has been involved in the planning stages of several international workshops, on urban adaptation to climate change in Southeast Asia, urban growth and environmental change modeling and urbanization and global environmental change in

Latin America, and much of preliminary work for those workshops has already been conducted.

The project has assisted and supported in the organisation of several other international events such as the 'International Forum of GEC and Land Use Change in Peri-Urban Area: Dialogue and Experience of Asian Cities' which took place in Taiwan in November, 2008; as well as the Cities at Risk workshop, which will take place in Bangkok, Thailand in February of 2009, co-organised by START and the East-West Center in Hawaii. Both events strengthen UGEC's Asian networks, a strategic goal for the project. UGEC organised and participated in networking events and workshops at the World Urban Forum 4 in November, 2008 and a considerable collaboration with UN-HABITAT and the Urban Environment Division has been initiated, springing from UGEC workshop and outreach activities. UGEC also placed a considerable ef-



10
Books

40
Articles

fort in organising several UGEC panels for the forthcoming IHDP Open Meeting with the collaboration of international scholars and groups, such as the ASU *100 Cities project*, the UNU *Sustainable Urban Futures programme*, the IHDP *GECHS project* and the IGBP/IHDP *GLP project*.

UGEC created the most extensive bibliographic database currently available on the theme of Urbanization and Global Environmental Change, which is now accessible on the web at <http://www.ugec.org/references/index.php>.

The collection of the above mentioned tools will assist us in the goal of establishing a dynamic International Project Office (IPO) that ensures the flow of information among the UGEC Scientific Steering Committee (SSC), IHDP, and the wider research community. A small portion of time was allocated to research, related to the subject matter of the project, which targets article publications.

Further advancing the UGEC scientific agenda, the project will expand the list of papers hosted in the Working Paper Series with contributions from UGEC SSC members and project associates. Together with the project co-chairs, the IPO will be submitting funding proposals from several sources, targeting, in particular, several private foundations.

UGEC Highlights 2007-08

Symposium on "Urban Adaptation to Climate Change," in September, 2007, in New York, NY. The symposium was hosted and co-sponsored by the CUNY Institute for Sustainable Cities. Workshop report publication: 'Urban Responses to Climate Change' June 2008

The workshop "Climate Change Resilience in an urbanizing Western Africa" took place in February, 2008, in Dakar, Senegal. Workshop report publication: 'Climate Change Resilience in an Urbanizing Western Africa' August 2008

Participation in Rockefeller Foundation's Global Urban Summit, July, 2008.

Participation in UNU's "Urban Futures" meeting July, 2008

Establishment of the Online Research/Publication Database November, 2007

Publication of first issue of the 'UGEC Viewpoints' newsletter on the theme of 'Urban responses to climate change: a focus on the Americas' July, 2008

5th UGEC Scientific Steering Committee meeting at the Goree Institute, Dakar, Senegal February, 2008

Several UGEC SSC members and project associates participated in the Association of American Geographers annual meeting April 2008

Urban responses to climate change

Mitigation and adaptation in cities

Climate change resilience

Urban vulnerability

Urban coastal zones

Human security

Urban sustainability

Urban livelihoods

Cities as complex adaptive systems

Urban remote sensing

Urbanization and Global Environmental Change
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Books

- Fragkias, M., and Seto, K. C. (2007) "Modeling urban growth in data-sparse environments: A new approach," *Environment and Planning B* 34(5): 858-883.
- Kaufmann, R. K., K. C. Seto, et al. (2007). "Climate Response to Rapid Urban Growth: Evidence of a Human-Induced Precipitation Deficit." *Journal of Climate* 20(10): 2299-2306.
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- Kirshen, P., Watson C., Douglas, E., Gontz, A., Lee, J, and Tian, Y, (2008), Coastal flooding in the Northeastern United States due to climate change, *Mitigation and Adaptation Strategies for Global Change*, Volume 13, Numbers 5-6, (June), 437-451
- Leichenko, R. and Solecki, W. (2008), *Consumption, Inequity, and Environmental Justice: The Making of New Metropolitan Landscapes in Developing Countries*, *Society and Natural Resources*, Volume 21, Number 7, August 2008 , pp. 611-624(14)
- Ooi, G. L. (2007) 'Urbanisation in Southeast Asia – Assessing Policy Process and Progress towards Sustainability,' *Journal of Industrial Ecology*, Spring, Vol. 11, No. 2: 31-42.
- Simon, D. *Urban Environments: Issues on the Peri-Urban Fringe*, *Annual Review of Environment and Resources*, Vol. 33: 167-185 (November 2008)

Slums of Kariobangi, Nairobi, Kenya, Photo: Yaruman5



UGEC Outreach Activities

Communication tools such as listservs, an electronic newsletter, and a website (www.ugec.org) to alert participating researchers to funding opportunities and other benefits of network association are still main methods of outreach. Additionally, the IPO is continually evolving a network of affiliates to include a group of dynamic project participants that provide a broader diversity of scientific expertise, both thematic and regional, in various disciplines and sub-disciplines.

Practical expertise (practitioners and decision-makers), and project endorsements have been also established to enhance exposure to the project. As guest editors, UGEC saw through to completion the IHDP Update issue themed "Global Environmental Change, Natural Disasters, Vulnerability and their Implications for Human Security in Coastal Urban Areas".

UGEC has also created, supported and expanded several research tools that help advance the project's scientific agenda: a working papers series was established (titled "Urbanization and Global Environmental Change – International Working Paper Series, ISSN: 1935-9160.) Such tools target the provision of opportunities to scholars and practitioners to present the results of their research in a timely fashion and receive feedback from a broader international counterpart community.

Global Land Project



The Global Land Project (GLP) is an IGBP, IHDP joint research project about land systems. The Global Land Project Science Plan represents the research framework for the coming decade for land systems. This development of a research strategy is designed to better integrate the understanding of the coupled human-environment system. These integrated science perspectives reflect the recognition of the fundamental nature of how human activities on land are affecting feedbacks to the earth system and the response of the human-environment system to global change. The Global Land Project Science Plan has been defined by scientists sponsored by the IGBP and the IHDP.

The focus of the project is largely “land-centric” which includes the

people, biota, and natural resources such as air, water, plants, animals, and soil. The strategy presented here critically emphasises changes in the coupled human and environmental system. During the past decade, the value of critical assessments of global change science has proven to be essential in providing timely information to decision makers.

The project’s research strategy is already being fully implemented. The project added multiple new scientific projects and partners in 2008, helping to cover the desired scope of research, and expanding the geographical coverage of its work. In addition, GLP’s numerous endorsed PhDs prove its commitment to developing capacity in the coming generation of scientists.

Land-change science

Land use change

Land cover change

Sustainability science

Land use modelling

Coupled human environmental systems

Outreach Activities

GLP representatives are very active presenting the project’s work in multiple high level settings. Through this work the project has acquired a great amount of visibility in the public and in the scientific community.

77

researchers
who regularly
work with GLP

800

scientists in
GLP's extended
network

40

research proj-
ects

7

endorsed
projects

11

endorsed PhDs

Highlights

IGBP Conference

Cape Town, 7-9 May, 2008.

At the IGBP Conference GLP organised 3 sessions with 14 presentations on Grand challenges for land systems and sustainability science; Land System Change: Competing for food, energy and environmental services, and Modelling in Coupled Human-Environmental Systems - Integrative Models for Land Change Science and Market based Instruments for Integrated Modelling. The Aberdeen Nodal Office hosted two workshop on the "The design of integrative models of natural and social systems in land change science" and on "Data and model integration for coupled models of land use change". Special Issue in Landscape Ecology forthcoming.

Second working meeting between the Beijing and Sapporo Nodal Office

3 July, 2008

Discussing the joint effort for implementing the activity of Assessing Land System Vulnerability in Asia.

ESF (European Science Foundation) Exploratory Workshop in Berlin

9-10 October, 2008

"Europe's Green Backbone - Post-Socialist Land Use Change In The Carpathian Region", based on the GLP conceptual framework.

The GLP Science Plan is now available in Chinese language

The GLP Science Plan is widely used as a reference in the global community of researchers working on land-change issues and GEC in coupled human-environmental systems. The translation has been enabled by the GLP Beijing Nodal Office. The document is therefore now potentially accessible to approximately 1,176 billion native speakers of Chinese.

Anette Reenberg invited speaker at the high level Ernst Strüngmann Forum

Frankfurt, Germany, 9-14 November, 2008

The topic of the forum is: "Quantifying Comprehensive Sustainability". Book publication forthcoming.

<http://fias.uni-frankfurt.de/esforum/forums/sustainability.html>.

Natural Resources and Sustainable Development in Surrounding Regions of the Mongolian Plateau International Conference, *12-16 September, 2008, Ulaanbaatar, Mongolia* (co-organised by Beijing Nodal Office)

Symposium on Dynamic Pathways and Land System Change *GLP-Sapporo Nodal Office, 25 June, 2008*

New GLP Endorsed Projects 2008

Decision-making and the poverty-environment nexus analysing the contextuality of sustainable development at meso-level. Peter Messerli, Centre for Development and Environment (CDE), University of Bern, Switzerland.

Environmental impact of agricultural expansion in southwestern Amazonia. Carlos Clemente Cerri, Centro de Energia Nuclear na Agricultura/USP, Brazil.

Functional biodiversity effects on ecosystem processes, ecosystem services and sustainability in the Americas: an interdisciplinary approach. Sandra Diaz; Instituto Multidisciplinario de Biología Vegetal (IMBIV); Universidad Nacional de Córdoba; Argentina. DiverSus.

Patterns, dynamics and implications of the global human use of terrestrial ecosystems. Helmut Haberl, Institute of Social Ecology (Vienna), Klagenfurt University, Austria.

Dynamics of Reforestation in Coupled Social-Ecological Systems: Modeling Land-Use Decision Making and Policy Impacts. Tom P. Evans, Department of Geography, Indiana University, Indiana, USA.

Spatial Land-Use Change and Ecological Effects (SLUCE): Interactions

of Exurban Land Management and Carbon Dynamics. Dan Brown, University of Michigan, Ann Arbor, USA.

Developing Capacities in Carbon Stock Measurement Across Ecologies and Land Use Systems in West Africa. Cheikh Mbow, Université Cheikh Anta Diop de Dakar-Senegal, Dakar, Senegal.

Environmental Valuation Project. Tatsuki Sekino, Research Institute for Humanity and Nature, Kyoto, Japan.

Complexity, Agents, Volatility, Evidence and Scale (CAVES). Professor Scott Moss, Centre for Policy Modelling, Manchester Metropolitan University Business School, Manchester, UK. This project finished in 2008.

Collapse and Restoration of Ecosystem Networks with Human Activity. Norio Yamamura, Research Institute for Humanity and Nature, Kyoto, Japan.

Sustainability of Rainfed Agriculture in India: Evaluation of Watershed Development Projects in Rainfed Agro-Ecological Regions in Peninsular India Kaushalya Ramachandran, Central Research Institute for Dryland Agriculture (CRIDA – ICAR), Santoshnagar, India.

Amazonian Deforestation and the Structure of Households, Phase 3. Emilio F. Moran, Anthropological Center for Training and Research on Global Environmental Change, Indiana University, Bloomington, USA.

Mangrove forests - Global distribution and dynamics (1990-2005) Chandra P. Giri, USGS Earth Resources Observation and Science (EROS) Center, Sioux Falls, USA.

Model Ecosystem Framework (MEF) Project. Professor Richard Aspinall, The Macaulay Land Use Research Institute, Craigiebuckler, Aberdeen, UK.

REDD-ALERT Reducing Emissions from Deforestation and Degradation through Alternative Landuses in Rainforests of the Tropics. Professor Robin Matthews, The Macaulay Land Use Research Institute, Craigiebuckler, Aberdeen, UK.



Global Carbon Project



The Global Carbon Project was formed to assist the international science community to establish a common, mutually agreed upon knowledge base supporting policy debate and action to slow the rate of increases of greenhouse gas concentrations in the atmosphere.

The Global Carbon Project is responding to this challenge through a shared partnership between IHDP, the International Geosphere-Biosphere Programme (IGBP), the World Climate Research Programme (WCRP) and Diversitas, an international programme of biodiversity science. This partnership constitutes the Earth Systems Science Partnership (ESSP).

GCP works on carbon trends and budgeting and is a highly successful, important source of information for various purposes including mitigation policies and best-practice recommendations.

The project also integrates human dimensions research for instance, through its work on vulnerabilities, carbon management, or for example, through GCP's urban and regional

carbon management initiative. The project is using innovative approaches to understand global climate change from many different angles such as its Full Radiative Forces of Forests initiative, which looks at factors other than carbon that affect local temperature change, and its Vulcan project, which, under the funding of NASA and DOE, is analysing North America's fossil fuel-based carbon dioxide emissions at space and time scales much finer than has been achieved in the past.

GCP has been presented and discussed as a success case for the science-policy interface. A great deal of its projects and results are directly aimed at informing policy-makers and stakeholders, which has been greatly supported by increased media coverage for GCP and the high visibility of its products in international forums.

The project is just entering its synthesis phase, and its development will be very interesting to watch over the next few years as it influences the global understanding of climate change.

Bioenergy and Earth Sustainability

Carbon Cycle

Africa and the Carbon Cycle

Bioenergy and Earth Sustainability

Radiative Forcing of Forests

Scientific Highlights

Carbon Budget 2007

The Carbon Budget 2007 was released on 26 September, 2008, simultaneously at the Paris Observatory, France, by GCP co-chair Micheal Raupach and on Capital Hill, Washington DC, by GCP Executive Director Pep Canadell. The Carbon Budget is an annual update of the global carbon budget and trends.

Highlights of this year's budget included data found on atmospheric CO₂ growth, emissions from land use change, emissions from fossil fuel and cement, regional fossil fuel emissions, carbon intensity of the economy, CO₂ removal by natural sinks, natural Ocean CO₂ sinks, and natural Land CO₂ sinks.

Full Radiative Forcing of Forests

Policies for climate mitigation on land rarely acknowledge biophysical factors such as reflectivity, evaporation and surface roughness.

Yet such factors can alter temperatures much more than carbon sequestration does, and often in a conflicting way.

The GCP with NCEAS is developing a framework for examining biophysical factors in mitigation policies and providing some best-practice recommendations based on that framework.

Jackson et al. (2008) Protecting climate with forests. Environmental Research Let-

ters 3. Abstract: <http://www.iop.org/EJ/abstract/1748-9326/3/4/044006>. For information: http://www.globalcarbonproject.org/global/pdf/NICCR_Summary_2008.pdf

Carbon Tracker

CarbonTracker is a system that calculates carbon dioxide uptake and release at the Earth's surface over time. It estimates the carbon dioxide exchange from an 'atmospheric point of view'.

Since CO₂ mole fractions in the atmosphere reflect the sum of all the CO₂ exchange at the surface, they form the ultimate record of the combined human and natural influence on greenhouse gas levels.

<http://www.esrl.noaa.gov/gmd/ccgg/carbon-tracker/>

Livestock ranching is a leading contributor to CO₂ emissions. Photo: J0n





Activities

Bioenergy and Earth Sustainability 19-22 July 2008, Piracicaba, Brazil

Presently, the global demand for bioenergy is driven by demand for “traditional bioenergy” in rural communities of developing countries, which makes up 10 percent of global primary energy. The demand for “new”, highly standardised biomass for energy is rising rapidly, posing a new set of opportunities and challenges to earth system sustainability. The GCP with its sponsor programmes of the ESSP has initiated a new activity to identify the major opportunities and constraints for bioenergy in the context of earth system sustainability.

An Earth System Sciences Partnership Workshop. Background information: <http://www.globalcarbonproject.org/meetings/Bioenergy.html> and “ESSP Research on Bioenergy and Earth Sustainability: Tapping GEC programme-Wide Expertise for the Benefit for Science and Society,” by Gernot Klepper, Pep Canadell, Rik Leemans, Jean Pierre Ometto, Anand Patwardhan, and Martin Rice, IHDP UPDATE magazine Extra 2008/2, available at <http://www.ihdp.unu.edu/article/627?menu=23>

Biogeosciences Section, Fall AGU
14-19 December, 2008, San Francisco. Multiple sessions on the carbon cycle. Website: <http://www.agu.org/meetings/fm08/>

U.S. Carbon Cycle Scientific Steering Group 9-10 December, 2008, National Science Foundation, Arlington, VA <http://www.carboncyclescience.gov>

Africa and Carbon Cycle: the Carbon Africa project
25-27 November, 2008, Accra, Ghana

Activities and results of the first 2 years of CarboAfrica implementation were presented, with the state of the art of African research on carbon and other GHGs in Africa. http://www.carboafrica.net/seminars_en.asp

First Planning Workshop for the next U.S. Carbon Cycle Science Plan 17-18 November 2008, Washington, D.C. Identification of new science questions and plans for the next decade (2011- 2020). Background Material: U.S. Carbon Cycle Science Plan by Jorge Samiento and Steven Wofsy (1999).

Selected Publications

Peatlands and the carbon cycle – from local processes to global implications. Limpens J, Schaepman-Strub G, editors (2008). Peatlands and the carbon cycle – from local processes to global implications. *Access manuscripts: http://www.biogeosciences-discuss.net/special_issue27.html. Special Issue in Biogeosciences, 2008, in progress*

Carbon cycling in Sub-Saharan Africa. Valentini R, Canadell JG, Bombelli A, editors (2008). Carbon cycling in Sub-Saharan Africa. *Access manuscripts: http://www.biogeosciences-discuss.net/special_issue37.html. Special Issue in Biogeosciences, 2008, in progress.*

The Continental-Scale Greenhouse Gas Balance of Europe. Dolman, A. Johannes; Valentini, Riccardo; Freibauer, Annette, 2008 The Continental-Scale Greenhouse Gas Balance of Europe. Ecological Studies, Vol. 203. ISBN: 978-0-387-76568-6. *For further information: <http://www.globalcarbonproject.org/products/EuropeGHGBalance.htm>*

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The Global Water System Project (GWSP) builds on 25 years of scientific leadership, expertise and the information database of the four global environmental change programmes to create added value results for societal benefits. While science driven, the Joint Project on the Global Water System provides policy-informing results, specifically targeting issues pertaining to the global aspects of environmental change that are of high interest to water managers worldwide. GWSP research supports global assessments of water, and the development of adaptation strategies.

Activities

Launch of the Global Catchment Initiative (GCI) *February 7-8, 2008, Bonn, Germany*. The GCI aims to expand the viewpoint of river basin

research and management to include the global perspective and building a new community of water researchers aware of global dimensions.

Launch of the Global Scale Initiative (GSI) *September 2007-October 2008*

The GSI was convened as a product of deliberations on restructuring GWSP during the Brisbane SSC meetings (Sept. 2007). Building on its initial effort on Indicators of the GWS, an ongoing effort has engaged DIVERSITAS in mapping threats to

Launch of the Global Water Needs Initiative (GNI) *December 2008, Frankfurt, Germany* The GNI aims to build a world community of researchers to work on environmental flow requirements and strategies for harmonising water needs of humans and nature. Participants are preparing a

special issue of Global Environmental Change on new global water needs.

GWSP Water Balance Intercomparison *April, 2008, Wageningen, NL*

This co-sponsored workshop focused on the hydrological aspects of climate modeling. First publications of the exercise are under preparation.

Contribution to World Water Assessment. GWSP scientists contributed to the latest World Water Assessment produced by UN-Water .

Understanding the Issues of Global Water Governance

A special issue in the Global Governance Journal on 'Global Governance of Water: Trends, Processes, and Ideas for the Future' has been edited by Claudia Pahl-Wostl (Vol. 14 No. 4 Oct.-Dec. 2008).



Global Environmental Change and Food Systems



International Conference on Food Security and Environmental Change: Linking science, development and policy for adaptation

Global Environmental Change and Food Systems (GECAFS) is an international, interdisciplinary research project focussed on understanding the links between food security and global environmental change. The GECAFS Goal is to determine strategies to cope with the impacts of global environmental change on food systems and to assess the environmental and socio-economic consequences of adaptive responses aimed at improving food security.

University of Oxford, UK, 2-4 April, 2008.

GECAFS organised an International Conference on "Food Security and Environmental Change: Linking science, development and policy for adaptation". The purpose of the conference was to engage the research and policy communities addressing food security,

environmental change and food policy and interested in jointly developing adaptation options. 230 participants from 50 countries were involved, with 40% of the accepted papers coming from developing countries. Funding amounting to US\$205,000 came from the Natural Environment Research Council of UK, Economic and Social Research Council of UK, COST, CTA-Technical Centre for Agricultural and Rural Cooperation, European Science Foundation, Inter-American Institute for Global Change Research, Netherlands Organisation for Scientific Research, Research Council of Norway, and the WK Kellogg Foundation.

Outcomes of the conference included a special issue of *Environmental Science and Policy*, and significantly enhanced interdisciplinarity and networking.

Food security

Food systems

Decision support

Integrated scenario analysis

Tradeoff analysis

Science-policy interface

Highlights

CGIAR Climate Change Challenge Programme on “Climate Change, Agriculture and Food Security”

GECAFS, on behalf of the ESSP, continued to lead the development of a new 10-year collaborative initiative with the CGIAR that offers a major opportunity for the GEC research community at large to collaborate more effectively with the international agriculture research community, ie, the CGIAR and its partners. The overall goal is to overcome the additional threats posed by a changing climate to attaining food security, enhancing livelihoods and improving environmental management.

Structured analysis of International Global Environmental Assessments and Food Security

GECAFS conducted an analysis of how the MA, IPCC AR4 and GEO4 addressed food security, *vis à vis* food production. It was found that the food security communities need a better meta-synthesis of impacts of GEC. Currently there is insufficient empirical modelling of the major drivers of change with regard to food systems, and a better and more uniform food systems typology could guide future assessments, scenarios and/or modelling exercises. Preliminary findings have already been of great interest to UNEP, EEA, EC/DG-Research, FAO and others.

GECAFS led research project, “Improving Policy Responses to Interactions between Global Environmental Change and Food Security across the Indo-Gangetic Plain (IGP)”

Research for this project is based on five case studies across the IGP of the vulnerability of food systems to reduced access to water and is being used to identify adaptation options. Each site is working on links to decision support and results will be presented in an international public seminar in New Delhi in February, 2009. The GECAFS sites will help launch the CGIAR Climate Change Challenge Programme work in the IGP.

GECAFS played a major role in the ESF / COST Forward Look “European Food Systems in a Changing World” Work was structured to identify the research needed in Europe over the next few years to address two major questions: 1. How will the drivers of food systems such as CAP, climate, WTO, lifestyle, consumerism, as well as the interactions between them, change? 2. How will these changes affect the interactions between food security outcomes relating to food availability, access to food and food utilisation.

Selected Publications

Envisioning Earth System Science for Societal Needs: The Development of Joint Projects and the Earth System Science Partnership (ESSP) Ingram JSI, WL Steffen and J Canadell. 2007. (prepared for ESSP review)

Global environmental change and the dynamic challenges facing food security policy in Southern Africa. Mano R et al. 2007. GECAFS Working Paper 5.

Linking scenarios across geographical scales in international environmental assessments. Zurek, M., Henrichs, T., 2007. Technological Forecasting and Social Change 74(8): 1282-1295.

Conceptualizing food systems for global environmental change research Global Environmental Change, 18, 234–245. Ericksen, P.J. 2008.

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Global Environmental Change and Human Health

GECHH and the Earth System Science Partnership (ESSP)

GECHH is being developed as a logical complement to the three ongoing joint IHDP/ESSP projects on carbon, water and food systems. Changes in each of those systems influence, via diverse pathways, human well-being and health as well as societal sustainability. GECHH aims to create an international network of researchers who can identify and quantify health risks posed by global environmental change, and develop adaptation strategies that are cost effective for reducing health risks.

After providing strong input from the social science community to the updated science plan, the IHDP Scientific Committee approved the revised science plan of the Global Environmental Change and Human Health project (GECHH), at its meeting in October, 2007, and the project is now officially co-sponsored by the four ESSP partners (IHDP, DIVERSITAS, IGBP and WCRP).

“Population health is a crucial bottom-line indicator of the impacts of global environmental change on human societies,” said Anthony McMichael, co-chair of the planning team of the new project.

“Our project’s challenge is to understand how environmental conditions and large-scale changes, especially at the global level, influence and perhaps determine the health outcomes for whole communities and populations over a long time frame”, Dr. McMichael added.

According to the World Health Organisation, which assisted with the development of the project and has a representative on the SSC, climate

and land-use changes are responsible for putting an estimated 40 % of the world population at risk of contracting malaria, as well as placing 840 million people at risk of malnutrition.

In addition 1 to 2 billion people living in mid to high latitudes face a higher risk of skin cancer and immune system depression due to depletion of stratospheric ozone.

“The GECHH project will form a new, dynamic and integrative node in the developing domain of Earth System Science, and will help focus on policy options that ensure a healthier and more sustainable future.” (Dr. Anthony McMichael).

Global environmental changes constitute a major new category of health hazard, arising predominantly from human-induced systemic changes to the natural systems and processes that underpin health and life. policy options that ensure a healthier and more sustainable future.

SSC Meeting

The inaugural Scientific Steering Committee (SSC) Meeting of GECHH convened in Merida, Mexico, 5 – 6 December 2008 in conjunction with the EcoHealth Forum (www.ecohealth2008.org/). The meeting convened thanks to support from the Mexican Government and was Co-Chaired by Professors Ulisses Confalonieri and Mark Rosenberg. Key outcomes included the identification of 'fast track' activities that would get the project on the map and produce tangible results. Proposed fast track activities range from policy briefs, training courses, research collaboration with existing projects and research groups and papers at major conferences and in peer-reviewed journals.



Capacity Development Activities

GECHH Project Meeting,
London School of Tropical Medicine and Hygiene, 30 May, 2008, London, UK

Global Humanitarian Forum
24-25 June, 2008, Geneva, Switzerland

ESSP at the UNFCCC Climate Talks
5 June, 2008, Bonn, Germany

ESSP SSC Meeting
30 Jun- 2 Jul, 2008, Oxford, UK

IHDW – Global Change & Urban Health
12-15 October, 2008, Delhi, India

Training Course on Urban Health
19-22 November, 2008, Beijing, China

Eco Health Forum
1-5 December 2008, Mérida, Mexico

European Environment and Health Committee (EEHC)/WHO, 2nd High Level Preparatory Meeting
22-24 October 2008, Madrid, Spain

European Space Agency Meeting
United Kingdom

Health care system research

Climate change, food production, nutrition and health

Land-cover change and health risks

Governance and health

Vulnerability, adaptation and resilience

Urbanisation and health

Integrated disease surveillance

System for Analysis Research and Training



Capacity development
Knowledge generation
Decision support
Sustainable development

START is responding to the challenge of global environmental change by building human and institutional capacity and generating knowledge to support decisions that enable sustainable development in developing country regions. Through a framework of regional research centers, research nodes, science committees and secretariats, START

- Conducts research on regional aspects of global change;
- Provides fellowship and education opportunities;
- Shares knowledge, expertise and data;
- Bridges between science and society to support decision making; and
- Mobilises financial, institutional and human resources

START supported African participants of the IHDW Workshop in Delhi, October 2008

The Global Environmental Change and Human Security (GECHS) project organised an International Human Dimensions Workshop (IHDW) on “Sustainable Adaptation to Climate Change” 11-16 October, 2008, New Delhi, India.

A total of 17 researchers and practitioners from around the world attended and contributed to this seminar. The participation of five young researchers from Africa was funded by START/PACOM African Global Change Research Grants.

The training seminar focused on the concept of sustainable adaptation to climate change as a means of enhancing human security. In particular, the relationship between adaptation and development was explored, including how poverty reduction strategies can have either positive or negative influences on vulnerability to climate change. The role of social and technological innovations for development was also addressed in the seminar, especially the role of renewable energy technologies in contribution to increased adaptive capacity and sustainable adaptation.

Vulnerability and Adaptation

START has an extensive and growing portfolio of activities related to vulnerability, adaptation assessments and risk management. Many of the activities contribute to the IHDP projects. Of particular note are:

Effort on “Advancing Capacity on Climate Change Adaptation” (ACCCA project: (ACCCA project: see www.acccaproject.org), executed in collaboration with UNITAR and SEI. The ACCCA project draws on lessons learned about communicating climate risk information in clear terms that are relevant to decision-makers; addressing climate risks and adaptation in an integrated, multidisciplinary way; the importance of engaging stakeholders substantively; and the long-term benefits of partnering institutions from scientific and policy communities for understanding and managing climate change risks.

In collaboration with the UGEC Core project of IHDP, WCRP and others, START is conducting a regional workshop on “Asian Cities at Risk”: The Cities at Risk workshop, to be held 26-28 February 2009 in Bangkok, Thailand, will bring together scientists, urban planners and officials, as well as representatives of disaster management and development agen-

cies to review scientific findings and projections regarding climate-related risks such as sea level rise, extreme climate events, intensification of storms and storm surges for Asia’s coastal megacities. Participants will examine potential vulnerabilities and current coping mechanisms, including possible planning and governance mechanisms that better integrate science information, planning, development and disaster management. Workshop participants will also consider means for improving networking and communication among urban planners/officials and the scientific community in order to enhance urban resilience and adaptive capacities.

START awards doctoral, post-doctoral, policy and practitioner fellowships to Africans. With funding from IDRC/Canada and in collaboration with the Pan-African START Secretariat and the African Academy of Sciences, START has awarded 60 doctoral, post-doctoral, policy and practitioner fellowships to Africans in November 2008. More information is available at www.start.org

Partnerships

START’s partnerships include a close relationship with the inter-governmental community involved in global environmental change issues including UNEP, UNDP, IPCC and WMO. START’s strategic partners include the Asia-Pacific Network for Global Change Research (APN), the Inter-American Institute for Global Change Research (IAI) and the New Partnership for Africa’s Development (NEPAD). START collaborates with other organisations dedicated to building scientific research capacity across disciplines in developing regions, including TWAS, the International Foundation for Science (IFS) and the United Nations University (UNU).

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Mountain Research Initiative



Highlights

The “Net-DYNAMO proposal on a Network for the Integrated Assessment of the Dynamics of Mountain Catchments under Global Change” has been proposed for funding.

In June 2008 the proposal to the European Science Foundation (ESF) was proposed for funding to its member countries. MRI has been a driving force behind this integrative proposal, bringing together European partners from different disciplines.

Success of the Research Network “MRI Europe”

The MRI Europe Meeting “From the Strategy to the Project: Get Prepared for COST, Interreg IV and FP7” held in Innsbruck, October 2007, showed the success of the research network. Several Austrian partners supported the workshop financially and logisti-

cally, making clear that the network meets an important demand. Several proposals to funding agencies have their origin in the MRI Europe networking meetings.

“Global Change Research Network for African Mountains” Launching Workshop

Kampala, Uganda in July 2007.

MRI, along with partners from Europe and Africa launched the workshop. MRI and CDE published the workshop report in 2008 and are developing a new publication with more in-depth profiles of research at selected mountain sites within Africa.

Science for the Carpathians Network

In May 2008, a new network of researchers, “Science for the Carpathians”, was founded by MRI and partner organisations from Austria, Germany, and Poland. The launching workshop in Krakow illustrated the great need

for a coordination and networking body. With the assistance of the International Scientific Committee on Research in the Alps (ISCAR) and the Swiss Academy for Natural Sciences (SCNAT), MRI has a leading role in formalising the S4C initiative, taking ISCAR as a model for the Carpathian region.

Peer-reviewed synthesis papers

In 2008 MRI began collaboration with partners from universities on the development of peer-reviewed synthesis papers on the gap between science and practice regarding mountain water and food security in mountain regions.

Workshop of the Cordillera Forest Dynamics Network

In June 2008, MRI and USGS co-sponsored a workshop of the Cordillera Forest Dynamics Network (CORFOR), a result of MRI’s effort



to coordinate global change research along the American Cordillera. The workshop started work on a paper comparing forest dynamics along elevational gradients in the southern temperate zone, the tropics, and the northern temperate zone and identifying other research needs and opportunities of broad significance that CORFOR can address.

MRI Newsletter

MRI began publication of an additional, stand-alone product, the new MRI Newsletter, with news from MRI's regional networks, scientific articles from the MRI community, meeting reports and introductions of the people shaping MRI.

Selected Articles

Björnsen Gurung, A., Scheurer, Th., 2007. Global change research in European mountains: Implementation of the GLOCHAMORE Research Strategy and the Research Agenda to the multi-annual working programme of the Alpine Convention in the scientific community. In: Heinz Veit et al. (eds), 2007. Proceedings of the Forum Alpinum 2007 (Landscape Development in Mountain Regions).

Drexler, C., 2007. Third Global Change Research Networking Meeting for European Mountains. *Mountain Research and Development* 27 (4): 378-379.

Drexler, C., 2008. *Forschen im Gebirge*. unilink Mai 2008: 12.

Drexler, C., 2008. Die Mountain Research Initiative (MRI): Koordinations- und Informationsplattform für die internationale Gebirgsforschung. *Geosciences actuel* 3, 2008 (in press).

Selected Abstract Volumes and Workshop Reports

Manton, M., and Ailikun, B. (eds.), 2007. Report of the Planning Workshop on MAIRS Mountain Zone Implementations. Beijing, China. MAIRS working paper series no.3.

Drexler, C., Greenwood, G., Kohler, Th. (eds), 2008. Workshop Report: Global Change Research Network for African Mountains. Proceedings of the workshop that took place in Kampala, Uganda from 23 – 25 July 2007.

Interdisciplinary
Integrated
Applied
Relevant to stakeholder
and policymakers
Mountain catchments
under global change
Water conflicts
Food security
High mountain hazards

Population Environment Research Network



PERN-Wilson Center Cyberseminar on Environmentally Induced Population Displacements

Issues related to environmentally driven migration are at the core of the population-environment studies agenda. An interdisciplinary topic of interest to researchers in a variety of fields as well as policy makers, it has recently commanded more attention because of the potential impacts of climate change.

The objective of this cyberseminar was to advance the discussion on environmentally induced displacements by highlighting the experiences, views and concerns of the members of the population-environment research community in different countries.

Topics addressed included to the conceptual, methodological, and data aspects, in addition to policy and institutional issues, regional variations

and the potential for future population displacements as a result of climate change. The cyberseminar was co-sponsored by the Environmental Change and Security Programme of the Woodrow Wilson International Center for Scholars. More than 500 PERN members subscribed to the cyberseminar discussion list, and there were 56 postings/contributions to the discussion.

PERN co-Coordinator Susana Adamo presented the results of the cyberseminar on “Environmentally Induced Population Displacements at the Environment, Forced Migration and Social Vulnerability International Conference” (EFMSV) from 9-11 October, 2008 in Bonn, Germany.

Collaboration

Collaboration with the Environmental Change and Security Program (ECSP) of the Woodrow Wilson International Center for Scholars in the organisation of the cyberseminar “Environmentally Induced population displacements”.

The Institute for Social-Ecological Research (ISOE) collaborated in the organisation of a cyberseminar on “Theoretical and Methodological Issues in the Analysis of Population Dynamics and the Environment”. The cyberseminar took place from 2-13 February 2009.



Knowledge Learning and Societal Change

Photo: UN Photo/ Shehzad Noorani

A Cross-Cutting Initiative

Developing a better understanding of the relationship between societal change to sustainable practice, the process of production and communication of knowledge, and the forms of learning, both individual and collective, is the domain of research encapsulated in a new IHDP initiative entitled, "Knowledge, Learning, and Societal Change: Transitioning to a Sustainable Future" (KLSC). This cross-cutting initiative is intended to develop mutually fruitful interactions and harvest on overlaps with IHDP core and joint projects, thereby providing a platform for their exchange on knowledge and learning related questions.

The concept for the proposed KLSC initiative was presented to the IHDP Scientific Committee at the Delhi meeting in October 2008. The Scientific Committee members re-

sponded with helpful suggestions and encouraged the organisers to proceed with the development of a science framework and plan for KLSC.

Scientific Planning Committee

Miranda Schreurs, Freie Universität Berlin, and Ilan Chabay, Chalmers University of Technology & University of Gothenburg are co-chairs of the scientific planning committee with Bernd Siebenhüner, University of Oldenburg, and Andreas Rechkemmer, IHDP Secretariat, joining them in guiding the scientific planning process.

A complete Scientific Planning Committee and a Senior Advisory Group will be announced early in 2009 and the planning process will start, with the intention of completing a draft scientific framework by August 2009.

Knowledge systems

Socially mediated learning, and societal change as an integrated domain of research

Evolution of social attitudes and actions from knowledge and learning

Barriers to and enablers of societal change

Integrated History of People on Earth



Human history has traditionally been cast in terms of the rise and fall of great civilisations, wars and specific human achievements. This history leaves out the important ecological and climate contexts that shaped and mediated these events. Human history and earth system history have traditionally developed independently, with little interaction among the academic communities. Therefore, separate methods of describing these histories have been developed, and there have been few attempts to integrate these histories and information across these fields of study. Recent recognition that current earth system changes are strongly associated with the changes in the coupled human-environment system make the integration of human history and earth system history an important step in understanding the factors leading to global change and in developing coping and adaptation strategies for the future.

IHOPE Activities

Integrated History of People on Earth (IHOPE) has obtained funding for a series of three working groups at the National Center for Ecological Analysis and Synthesis to develop prototype information systems.

The Stockholm Resilience Center in Stockholm, Sweden hosted its Resilience Conference from 14-17 April, 2008. IHOPE contributed a panel to the Resilience Centre conference with a proposed workshop in summer, 2008 on meta-concepts.

The IHOPE Research Plan is undergoing final edits. The final plan will be published in 2009.

In 2007, IHOPE was endorsed by both the International Human Dimensions Programme (IHDP) and the PAST Global Change (PAGES) project of the IGBP.

IHOPE was initiated in 2005 during one of the last Dahlem conferences. The conference produced a book, released in early 2007, and is now in its second printing. Available through MIT, it is entitled 'Sustainability or Collapse: an Integrated History and Future of People on Earth'

A prototype Integrated Research System is under development through the coordinated activities of Arizona State University and the National Center for Atmospheric Research. IHOPE is also anticipating collaboration with Uppsala University in the near future.

Past climate changes

Former human ecosystem interactions

Historical resource use and society

Integrated Risk Governance

Recently, the global risk community has realised that a new set of risk issues will become increasingly relevant in the future: issues of integrated risk management and governance.

An good example is given by the 2008 combination of increasing food and oil prices with the economic slow-down triggered by the American mortgage crisis and the risks of global climate change. The combination of these different kinds of risks makes it difficult to deal with any of them in isolation. Furthermore, current risk governance procedures make it equally difficult to address them in an integrated manner.

The Chinese National Committee proposed Intergrated Risk Governance (IRG) as a new science pilot project of IHDP. While the planning is still underway, IHDP accepted IRG as a pilot science project in October, 2008, in Delhi.

To lead this initiative, an international scientific planning committee (SPC-IRG) has been established. The committee is chaired by Professor Shi Peijun from Beijing Normal University (BNU) and Professor Carlo Jaeger from the Potsdam Institute for Climate Impact Research (PIK) and the European Climate Forum (ECF).



Research Questions

During the meeting in Santa Barbara in June, 2008, the Scientific Planning Committee decided to work on four major research questions:

- In what respect does a given risk exceed the capacity of given coping institutions or mechanisms?
- What aspects of entry and exit transitions foster/hinder robustness and learning with regard to the relevant risks?

- What are the key dynamic patterns of the entry and exit transitions?
- Who, for which agents, can do what in order to improve entry and exit switches and thus risk management?

Each of these four questions can either be considered for (a) familiar risks, (b) intermediate risks and (c) unfamiliar risks.

Strengthening Capacity to Understand and Manage Change

An important part of IHDP's work in strengthening and broadening the network of researchers working on global environmental change is capacity development. As a "network of networks", IHDP is in an excellent position to do just that on behalf of the entire human dimensions research community. IHDP's capacity development activities are an effective tool for enhancing its reputation and an avenue for incorporating new researchers and research into the network.



International Human Dimensions Workshop 2008



In October, 2008, in New Delhi, India, the International Human Dimensions Workshops (IHDWs), IHDP's series of capacity building workshops, illustrated once again the importance of systemised trainings in the overall Capacity Development Strategy, as laid out in the IHDP Strategic Plan 2007 – 2015.

The IHDWs are one of IHDP's flagship activities, with nearly 200 young scientists having been trained in the biennial courses since 1998 on key issues of human dimensions research. These capacity building activities focus on methodological issues related to research on the human dimensions of global environmental change, with topics linked both to IHDP core proj-

ects as well as joint Earth System Science Partnership (ESSP) projects. Not only do these seminars make an effort to develop concrete skills and provide state-of-the-art knowledge about the topics in question, but they also strive to enhance collaboration and networking between the young researchers and the broader global environmental change research community.

In 2008, the Delhi training seminars offered a unique opportunity for the promotion of young scientists from all regions of the world, particularly those from developing and emerging economies, to interact and exchange information on various aspects of global change. For the first time, IHDP also organised a seminar

Photo above: IHDW field trip to the flood plains of Yamuna River. Organized by Center for Science and Environment (CSE). Photo: GECHS

for trainers themselves on adaptive water management.

Over 170 researchers from all over the world applied for the 2008 IHDWs and each seminar invited up to 16 scholars for a 4 day seminar (see IHDW numbers on page 57). To foster integration with IHDP core projects, key scientists linked to the IHDP network volunteered to provide training throughout the seminars. The 68 IHDW participants presented their work and discussed it with esteemed members of the IHDP Scientific Committee who had gathered in New Delhi for their annual meeting from 14 – 17 October, 2008 .

International Human Dimensions Workshops (IHDWs)

New Delhi, India, 12-15 October, 2008 (4 days)

Transitions to Sustainability through System Innovation

Headed by the IHDP Industrial Transformation Project (Vrije Universiteit Amsterdam, Netherlands)

Sustainable Adaptation to Climate Change

Headed by the Global Environmental Change and Human Security project (University of Oslo, Norway)

Global Environmental Change and Human Health

Headed by Global Environmental Change and Human Health Project (Queen's University, Canada)

From Research to Social Change: The Case of Ecosystem Services

Headed by the Knowledge Learning and Societal Change Initiative (Göteborg University, Sweden)

Capacity Development in Adaptive Water

Headed by the Global Water Systems Project, Bonn, Germany, and the UN Water Decade Programme on Capacity Development

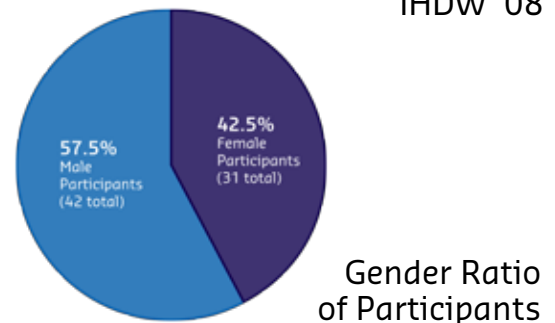
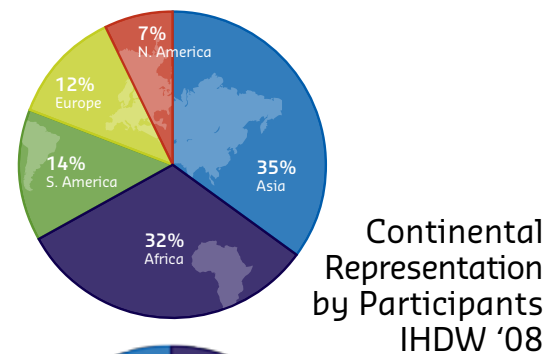
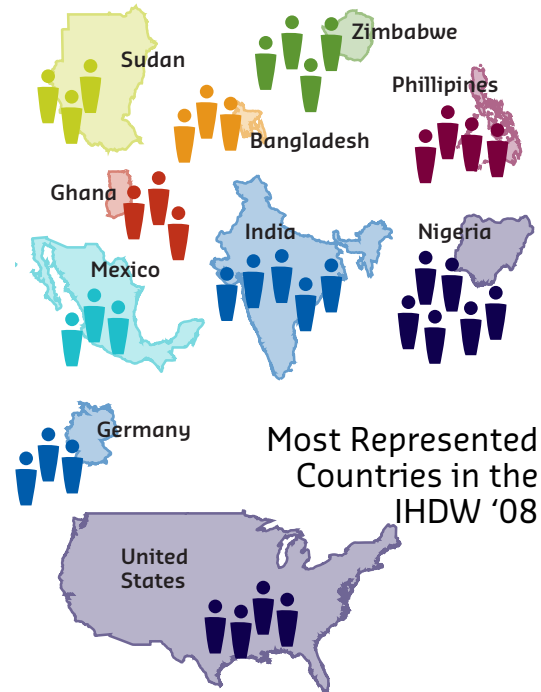
The IHDW workshop series is furthermore partnered and supported by the Inter-American Institute (IAI) and the Asia-Pacific Network (APN)

Feedback from Participants

"I feel now I have got a systematic introduction to my theoretical field, which was really useful. Sometimes such short events can be of big importance and give new knowledge, energy and new contacts that can become important for work and opportunities for a long time to come...."

"I can say that I've now been fully prepared to engage actively in climate change research in Nigeria and indeed in Africa. I would like to say also that considering the dearth of researchers in climate change research in Nigeria, I've now been trained to train others and to actively pioneer major research on this in my institute in collaboration with others I hope to positively influence and get engaged on this".

"I understood how valuable experience it was to meet and work with you and how much positive energy I got from this"



● National Committees

- Argentina
- Bolivia
- Brazil
- Bulgaria
- China
- China - Taipei
- Côte d'Ivoire
- Indonesia
- Japan
- Kenya
- Mauritius
- Mexico
- Nepal
- Nigeria
- Philippines
- Spain
- Switzerland
- USA

● Global Change Committees

- Austria
- Botswana
- Congo
- France
- Germany
- Netherlands
- Norway
- Romania
- Thailand
- Vietnam

● National Contact Points

- Belarus
- Canada
- Czech Republic
- Ghana
- India
- Portugal
- Slovakia

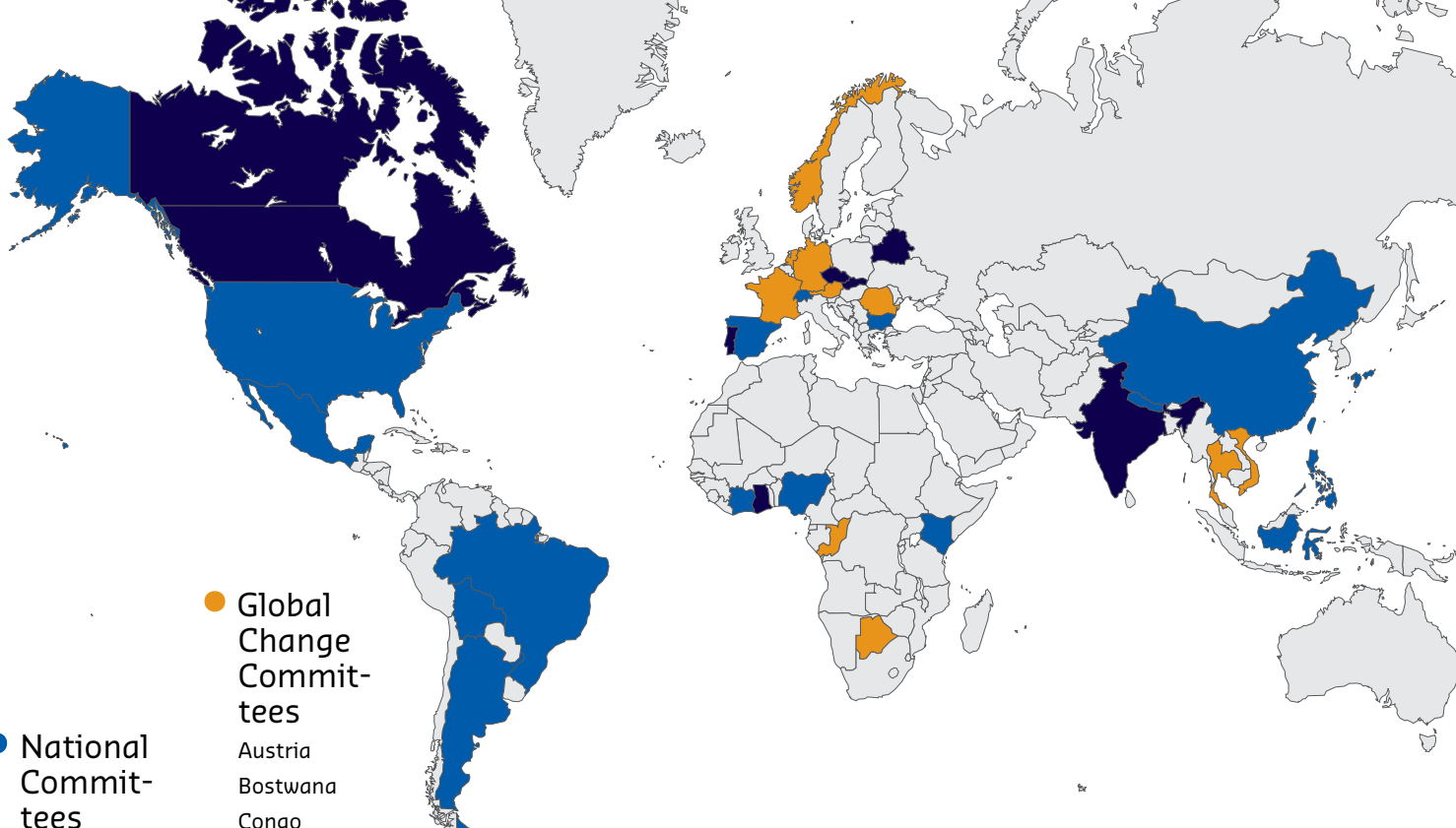
IHDP Global Network

In 2007 and 2008 members of IHDP global network, composed of IHDP National Committees, Global Change Committees, and National Contact Points, undertook an array of activities centring on the topic of human dimensions of global environmental change.

In the last year and a half, these members have organised international and national scientific conferences on various physical and social aspects of global changes, supported and initiated research projects, held

workshops and summer schools, and had their work published in multiple academic magazines and books. These groups and their activities are important to the goals of IHDP, as they support capacity development, cutting-edge science, and science-policy interaction in their own countries, expanding IHDP's reach beyond just its projects and secretariat.

For more information on members of IHDP Global Network, their activities and contacts, please visit www.ihdp.org



Highlights

Research Projects

Working group on resilient communities
Webbased knowledge initiative "Comunidad", Nur University in La Paz; a research initiative of the IHDP National Committee in Bolivia.

"Spatial Distribution of Soil Properties and Nitrous Oxide Emissions in Ituri Forest, Democratic Republic of Congo" research project of Global Change Committee in the Democratic Republic of Congo

Conferences

ERSEC International Conference on Sustainable Land Use and Water Management. 8-10 October, 2008, organised by the Chinese National Committee for IHDP in cooperation with the UNESCO Beijing Office.

Facilitating the Development of Climate Change Mitigation and Adaptation Policies in Botswana. 24 October 2007, workshop organised by the Botswana Global Change Committee.

Coping with Global Change - Land Use in the Area of Conflict of Resource Conservation, Food and Energy. 3-4 April, 2008, Bad Honnef, Germany 4th National Colloquium of German Global Change Committee.

Czech-German International conference "Climate Change Impacts in the Czech-German Elbe River Basin". 5-6 November, 2007, organised by Czech Republic Contact Point jointly with Potsdam Institute For Climate Impact Research.

The Seventh National Conference on "Global Environmental Change". 22 March, 2008, co-organised by The Romanian National Committee for Global Environmental Change.

Capacity Building

"International Summer School for Young Geomorphologists Environmental Hazards and Sustainable Development in Mountain Regions" September 20-25, 2008, Pâtârlagele, Romania; organised in collaboration with The Romanian National Committee for Global Environmental Change

Supervision of PhD candidates

Outreach Activities

Presentation of papers at / participation in International Conferences on Global Environmental Changes

Publishing of Human Dimensions related magazines and books as well as operation of websites presenting those topics to a broader public.



Visiting Scholars

The introduction of a resident/visiting scholar programme to the Secretariat is an exciting new development, providing the double benefit of capacity building for the scholars as well as a great support for the Secretariat. So far, the IHDP Secretariat has welcomed scholars from Brazil, Turkey, Poland, Cameroon, the United States, Australia, Bulgaria, Mexico, Greece, and Germany. With varied backgrounds, ranging from international environmental politics to the greening of business, and from resilience and biodiversity to water issues, many of these scholars have been able to link their own research to themes covered by IHDP core and joint projects.

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Visiting Scholars at the
IHDP Secretariat

Supporting Informed Decision-Making

The science-policy interaction is a top priority for IHDP in its second decade. IHDP believes that an ongoing and substantive interaction between scientists and practitioners is necessary to improve both research and the implementation of that research in policy and practice. The worlds of both science and policy need to better know one another, learn to speak each other's languages, benefit from their respective expertise, know each other's priorities and ultimately encourage each other's endeavours.





Energy, Sustainability and Societal Change *2nd Science-Policy Dialogue Workshop*

Speakers:

Ernst Ulrich von Weizsäcker, Dean, UCSB Bren School of Environmental Science and Management (USA)

James Brainard, Director, US Department of Energy National Renewable Energy Laboratory, Colorado, (USA)

Carlo Jaeger, Potsdam Institute for Climate Impact Research (Germany)

Mayor Marty Blum, Santa Barbara (USA)

Mia Navarro, New York Times (USA)

Frans Berkhout, Director, Institute for Environmental Studies, Vrije Universiteit Amsterdam (Netherlands)

From 19-20 June 2008, IHDP had the pleasure of organising “Energy, Sustainability and Societal Change”, its 2nd annual Science Policy Dialogue. The workshop opened a dialogue among leading scholars in the

field of energy, government officials from around the world, prominent journalists, and other stakeholders on the relationship between energy requirements, resources, security and the human behavioural patterns needed to move societies globally towards sustainability. Held at the University of California, Santa Barbara (UCSB) Donald Bren School of Environmental Science and Management, “Energy, Sustainability and Societal Change” was hosted by Ernst Ulrich von Weizsäcker, Dean of the Bren School and member of the IHDP Scientific Committee, and co-organised by Oran R. Young, Co-Director of the Bren School’s Programme on Governance for Sustainable Development and IHDP Chair.

The IHDP Open Meeting 2009

The most important science-policy and capacity development activity organised by the IHDP Secretariat is the Open Meeting series. During 2008, IHDP devoted much of its strength to the organisation of the 7th IHDP Open Meeting 2009, “Social Challenges of Global Change”, which will take place in Bonn from 26-30 April, 2009. The triennial Open Meeting is IHDP’s core international science conference, showcasing the vivid and emerging developments within the IHDP community. The 7th IHDP Open Meeting will re-frame the well-known problems of global environmental change as social challenges, giving substantial input to the understanding of the drivers and consequences of global environmental change and paving the way for effective responses. It is expected to be the largest Open Meeting to date, and will be held at a place symbolising various facets of global environmental change, as the overarching focus of the UN agencies in Bonn is that of sustainable development.



Berlin Talks & Public Outreach Event

Academy of Arts, Berlin, Germany
21st February 2008

Co-organisers: 2008 Berlin Conference on the Human Dimensions of Global Environmental Change

In February 2008, a public panel was held at the Akademie der Künste, in Berlin's famous Pariser Platz. With a keynote by Dr Louis Lebel of the Chiang Mai University, Thailand, and panelists Prof P.S. Ramakrishnan, Dr Otto Lampe, Dr Irene Quail-Kersken, and Prof Josee van Eijndhoven, the discussion, under the same headline as the IHDP Thinkshop itself, represented the public's introduction to the "Knowledge, Learning and Societal Change Initiative" and built a bridge to the 2008 Berlin Conference on the Human Dimensions of Global Environmental Change.



Ask an Expert

As another step towards the re-organisation of its Public Information, Communications and Outreach office, the Secretariat re-launched the IHDP website (www.ihdp.org) in March 2008, making it more user-friendly, interactive and up to date. One of the website's most visited features is a new "Ask an Expert" section, which aims to enhance the science-policy interaction by making communication between the press, decision makers, researchers and the public in general easier.

Diverse Futures or Futures in Diversity? *Bonn Dialogues*

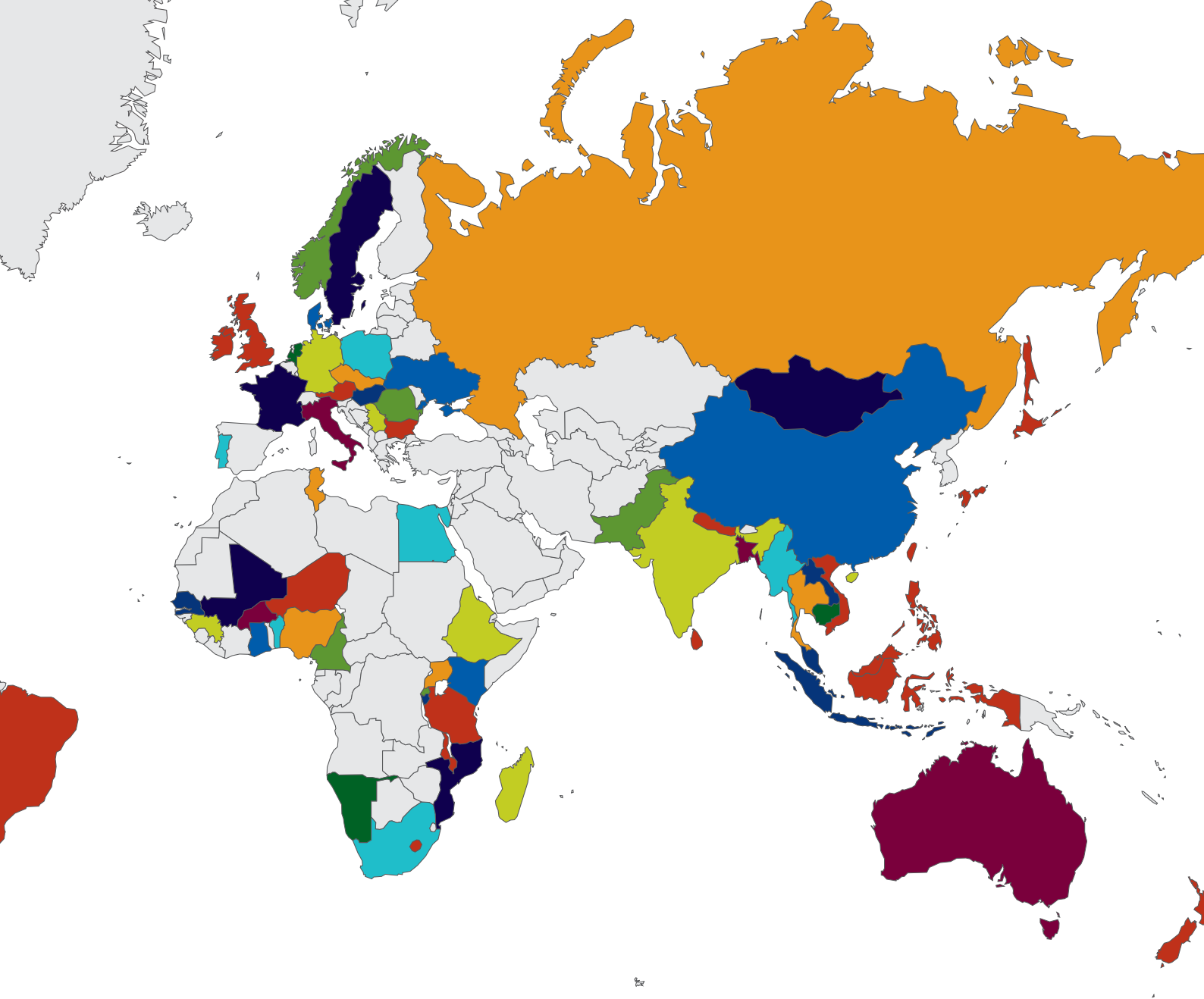
Deutsche Welle, Bonn, Germany, 6th May 2008

The environmental migration phenomenon is accelerating. There are estimates that over 40 countries will no longer exist by the end of the century due to climate change, resulting in over 200 million environmental migrants by 2050. In the latest Bonn Dialogues, jointly organised by IHDP, the German Committee for Disaster Reduction (DKKV) and the United Nations University Institute for Environment and Human Security (UNU-EHS), environmental migration stakeholders including Flavia Pansieri of UN Volunteers, Natarajan Ishwaran of UNESCO, Hans Peter Schipulle of the German Federal Ministry for Economic Cooperation and Development (BMZ), and Helmut Hillebrand of the University of Cologne, met with the public to debate critical measures and policies to deal with this key issue. Participants ranged from scientists and environmental activists to government officials.

IHDP Research Activity Around the Globe

Argentina	Germany	Pakistan
Australia	Ghana	Peru
Austria	Guinea	Phillipines
Bangladesh	Hungary	Poland
Benin	India	Polynesia
Bolivia	Indonesia	Portugal
Brazil	Ireland	Romania
Brunai	Italy	Rwanda
Bulgaria	Japan	Russia
Burkina Faso	Kenya	Senegal
Burundi	Lao PDR	Serbia
Burma	Lesotho	Singapore
Cambodia	Madagascar	Slovakia
Cameroon	Malawi	South Africa
Canada	Malaysia	Sri Lanka
Chile	Mali	Switzerland
China	Mexico	Taiwan
Colombia	Mongolia	Tanzania
Costa Rica	Mozambique	Thailand
Cuba	Namibia	Tunesia
Czech Republic	Nepal	UK
Ecuador	Netherlands	Uganda
Egypt	New Zealand	Ukraine
Eritrea	Niger	USA
Ethiopia	Nigeria	Venezuela
France	Norway	Vietnam





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