# **Final Activity Report**

# "Urbanisation and the Transition to Sustainability" International Human Dimensions Workshop 2002 APN 2002-06

#### Content

I	Project Title and APN Reference Number	page 1
II	Abstract	page 1
III	Project Information	page 1
IV	Introduction	page 2
V	Activities Conducted	page 2
VI	Outcomes and Products	page 3
VII	Conclusions	page 4
VIII	Future Directions	page 6
Appendix A	Workshop Programme	page 8
Appendix B	Participants List	page 16
Appendix C	List of Lecturers	page 20
Appendix D	Funding Sources outwith APN	page 25
Appendix E	List of Abbrivations and Acronyms	page 26
Appendix F	List of Sources	page 29

#### **Final Activity Report for APN Project**

#### I Project Title and APN Reference Number

International Human Dimensions Workshop 2002 – Urbanisation and the Transition to Sustainability (APN 2002-06)

#### II Abstract

The IHDP wants to provide opportunities for a new generation of young human and social science scholars, as well as scholars trained in interdisciplinary research and those who can bridge the natural and social sciences, especially from the developing countries, to enhance their capacity to deal with – and to achieve greater access to – the field of Global Environmental Change research. These scholars need a forum in which to discuss how they are addressing the challenges of doing interdisciplinary research on the human dimensions of global environmental change. From June 2-15,2002 IHDP and START hosted the third bi-annual International Human Dimensions Workshop (IHDW) for young scientists to explore the workshop theme: "Urbanisation and the Transition to Sustainability."

The main objective of the workshop was to provide a comprehensive and integrated perspective on issues related to Global Environmental Change in urban areas. The workshop encouraged the speakers and participants from different scientific backgrounds to develop an interdisciplinary approach to the workshop theme. Different complementary components, such as lectures, expert panels and individual projects formed the basis of the organisational structure of the workshop. The lectures and panels given by well-known scholars in the field exposed the participants to a wide range of topics reflecting the complex and dynamic range of societal and environmental interactions that take place in cities.

#### III Project Information

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**APN Funding:** 25.000 USD **Participating Countries, funded by APN:** India, China, Malaysia, Indonesia, Japan, Australia

#### IV Introduction

IHDP's programme is designed around its three main objectives of research, research capacity building and international scientific networks. The proposed workshop would contribute to these three objectives.

Global change issues will remain high on both the science and political agendas of the 21st century. Appropriate assessment of these issues cannot occur without a greater involvement by the human and social science communities than has been evident to date. We need to provide opportunities for a new generation of young human and social science scholars, especially from the developing countries and countries in transition as well as Russia to enhance their capacity to deal with--and to achieve greater access to -- this exciting field. The IHDP Secretariat in Bonn puts high priority on research capacity building.

Urbanisation is one of the trends in human-environment interactions that stand out as we look to the coming decades. The 21<sup>st</sup> century is the first in which more people will reside in urban than in rural areas. The urban population grows at a much faster rate than the total population. For the coming decades, the predicted increase is 80 million new city dwellers every year.<sup>1</sup> Most of these people will live in cities of developing countries. Urbanisation and urban life can be linked to GEC in several ways, all of which will be explored during the workshop. It is clear that cities as "hot spots" of globalisation and driving forces for GEC constitute a crucial challenge for both local and global sustainability.

Despite the fact that urbanisation and mega cities will determine much of the future relationship between the environment and humans, there has not been a concerted effort in bringing together national and international ongoing research activities. With producing a Scoping Report on "Urbanisation and the Transition to Sustainability" IHDP would first of all highlight the importance of the issue, which has not been a priority issue so far in the IHDP community. Secondly, it will link the IHDP core projects, which all touch upon the issue in their Science Plans, but have not been addressing the issue collectively. In bringing together several institutions, projects and programmes already dealing with GEC and urbanisation, an international collaboration would be stimulated with the longer term perspective of fostering a new research project. Bringing young scholars into the process will support the possibility that this important issue will be taken up internationally by the next generation of scientists.

#### V Activities Conducted

The main objective of the workshop was to provide a comprehensive and integrated perspective on issues related to Global Environmental Change in urban areas. The workshop encouraged the speakers and participants from different scientific backgrounds to develop an interdisciplinary approach to the workshop theme. Different complementary components, such as lectures,

<sup>&</sup>lt;sup>1</sup> National Research Council (1999): "Our Common Journey – A Transition toward Sustainability." Washington D.C.

expert panels and individual projects formed the basis of the organisational structure of the workshop. The lectures and panels given by well-known scholars in the field exposed the participants to a wide range of topics reflecting the complex and dynamic range of societal and environmental interactions that take place in cities, from the local to the global level: natural and social dimensions of GEC, regional processes of urbanisation, urban processes, social shaping of urban space, governance, environmental problems, urban climate, vulnerability, and water.

The last two days of the workshop were dedicated to the presentations of the participants. Weeks before the start of the workshop the participants were asked to select an individual case study from their country on a topic related to the Human Dimensions of Global Environmental Change in cities. Having brought their own empirical data sets to the workshop, the participants had the chance to apply the information and knowledge gathered from the workshop directly to their own individual projects. The majority of the presentations at the end of the workshop demonstrated a clear step towards an integrated perspective of human dimensions of Global Environmental Change. The majority of the participants expressed a strong desire to expand their research to include new dimensions.

This successful outcome was the result of a framework that put a lot of emphasis on communication and interaction amongst the present scholars. All invited lecturers were asked to stay for some extra time to give sufficient room for interaction and discussions. The scholars advised and commented on the individual case studies of the participants. Additionally two data specialist from CIESIN and the Center for Environmental Systems Research were present during the major time of the workshop. After giving an introduction on Arc View and GIS they assisted with individual data problems and computer questions of the participants. Lively discussions in the breaks, during the evenings and even in the nights, when participants and speakers were working together in the computer room, proved the organisational framework to work successfully.

#### VI Outcomes and Products

One important result of the workshop is the construction of a strong network of young and senior scholars working in the field of GEC and urbanisation. A list server has been installed in the meanwhile to facilitate the communication within the group.

The workshop homepage (http://www.ihdp.uni-bonn.de/ihdw02/ihdw02.html) offers information on the content of the workshop, e.g. the workshop agenda with links to the presentation of participants and speakers, summaries of participants case studies, participants list, speakers list, and links to other WebPages related to Urbanisation and GEC. A hard copy report of the workshop, which will concentrate on the case studies of the participants, is foreseen to be published by March 2003. IHDP actively engages the workshop participants to apply for the Human Dimensions Open Meeting in Montreal (October 16-18, 2003) with the aim, to organize a follow up meeting.

There is a call for the best case study among the participants of the IHDW 2002. The two best papers will be selected to participate in a panel of the IHDP urbanisation scoping team at the Open Science Meeting.

Some Participants are interested in acting as contact points for national HD communities in their countries, aiming at further developing of already existing, or establishing new national committees. IHDP's already successful Seed Grant Initiative was suggested as a mechanism to assist in this.

Finally IHDP offers partnerships for future proposal writing to the participants of the IHDW 2002, i.e. that we connect them with senior scientists, which are willing to assist in the process of drafting proposals.

#### VII Conclusions

Cities are complex and dynamic systems, which reflect the interactions between socioeconomic and ecological aspects at local and global levels. More than 90% of the future population growth will concentrate in the cities of the developing world. On the one hand cities are the driver of economic development, at the same time they are source for a variety of large-scale environmental changes, which have an effect at local, regional and global level.

Despite their importance for economic growth and sustainable development, cities have not yet obtained appropriate attention by research. The scientific exploration of the theme concentrates on the role of mega cities as sources of greenhouse gases. Although, this is a crucial issue of the global change research agenda, there are aspects beyond, which are of high importance regarding the role and function of cities as originator and receptor of global environmental changes. The greatest challenge for analyzing the interaction of cities and their environments is the creation of new conceptual approaches and methodologies.

The growing recognition that disciplinary approaches can only deliver fragmented perspectives of reality, paves the way for multi- and interdisciplinary approaches. Up to now concepts like "Sustainable development" have not been able to generate such approaches. At the same time these concepts featured only low relation to specific realities, in order to be translated into political decisions and programs. Attention should not only be paid to several dimensions and their interaction, but as well to how these different dimensions and their interaction have an impact on concrete social realities.

The investigation of cities offers the unique opportunity to foster the development of new conceptual research frameworks in the field of global environmental change science. Different aspects of cities and urbanization processes have been explored so far. The long tradition of urban research has generated significant knowledge on social, economic political and environmental dimensions. The social sciences contributions in this field have been far bigger than in other areas of the global environmental change

research agenda. What is missing so far, is a sensible integration of the different scientific approaches.

Substantial knowledge has already been accumulated from disparate research on various aspects of urbanization and global environmental change. A new scientific approach should build on these foundations in creating an innovative and integrated perspective. Urban studies have a long tradition in the social sciences (urban economy, urban sociology, urban anthropology, urban politics, and urban geography), in the engineering science and arts (urban transportation, urban infrastructure, urban design), as well as in the professional field of planning (urban and regional planning, public administration). Contributions from the natural sciences have also expanded our knowledge of urban issues (urban climate, urban metabolism, ecological services, urban habitat conservation, urban geology and hydrology, urban environment). Missing so far is a perspective integrating the contributions from these disciplines. This integrated perspective is essential to a better understanding of the complex and dynamic realities of urban areas.

#### **VIII** Future Directions

At the end of the workshop it was decided, that a follow-up meeting should be held to compile the workshop's discussions, case studies, and results in a *scoping report*. The aim will be an outline of the international state of the art with reference to the deficiencies named above. This *scoping report* will be presented to the Scientific Committee of IHDP in March 2003. Based on this report the SC members will decide if a fifths IHDP core project on "Urbanization Processes and Global Environmental Change" shall be developed in the following years.

Directly after the workshop the IHDW organizers, Roberto Sanchez, Chris Cocklin, Maarit Thiem and Valerie Schulz compiled the following questions to be critical for the IHDW 2004 Selection process:

# **1.** Should participants from both social AND natural science backgrounds be invited?

Rationale : The participants in IHDW 2002 represented both the social sciences and the natural sciences. This serves the important objective of communication across these broad fields of knowledge. However, there are significant costs associated with this mix. These include the fact that the presenters must pitch presentations to the 'lowest common denominator'. More importantly, though, the presence of natural scientists who have virtually no understanding of relatively basic and fundamental concepts in the social scientists seriously constrained the intellectual caliber of the debate amongst participants. This led to an obvious frustration amongst the social scientists, who were eager to discuss issues like governance, justice, gender issues, and aspects of methodology in a much more substantive and meaningful way. While interaction with their peers in the natural sciences is obviously an important objective, at this workshop it came at the unacceptable cost of severely limiting the quality of interaction about the HUMAN dimensions. As an IHDP activity, IHDW should primarily be about building capacity amongst the social sciences. The objective of informing and interacting with the natural sciences would be better served through other forums.

There is a consensus that IHDW should pursue its interdisciplinary character. It was proposed to look for researchers, who know how to organise the dialogue between social and natural scientists.

# 2. Should participants from developing countries AND from Eastern Europe/Russia be invited or would it be more useful to have 2 different workshops?

**Rationale:** Participants from Eastern Europe / Russia repeatedly stated that the lectures concerning the developing countries - though being very informative and educational - were of very little relevance to their own research due to the fact that urbanization processes are fundamentally different (a point also acknowledged by the participants of the developing countries).

One result was that the participants from Eastern Europe/Russia mostly interacted within their own group.

#### 3. How could we encourage more Latin American researchers to apply?

**Rationale:** For the IHDW 2002 we had only 17 (!) applications of mostly very bad quality coming from Latin America (in contrast to about 80 coming from Asia). To reach approximate geographical balance we decided to choose 7 of them (more so, since they were generously founded by IAI), who unfortunately mostly confirmed the poor impressions we had before (in research quality and very poor English skills). This was in contrast to the previous IHDW, which had very strong representation from Latin America.

These questions are of high relevance for the organisation and structure of a capacity building workshop. It would be important for IHDP to discuss theses issues with representatives from APN.

## Appendix A Workshop Programme

Saturday June 1	All day	Arrival of Participants at Arbeitnehmerzentrum Koenigswinter, Germany
Sunday	All day	Field Trip
June 2	7 til ddy	Mosel River Trip with walking tour of "Burg Eltz"
	19:00	Reception with the Chairs and Directors of the Global Environmental Change Programmes at the Hotel Loreley in Koenigswinter
Monday June 3	9:00 - 12:00	Welcome by Directorsof IHDP and START
		Short Introduction on GEC Programmes and Partners Jill Jaeger, Executive Director, IHDP (will also introduce DIVERSITAS) Roland Fuchs, Executive Director, START Will Steffen, Executive Director, IGBP David Carson, Executive Director, WCRP Gerhard Breulmann – IAI Andrew Matthews - APN
		Young Human Dimensions Researchers Network (YHDR) Jasper Grosskurth
		Introduction on the Workshop Framework and Agenda Roberto Sanchez, University of California/USA
	14:00 – 18:00	<b>Natural and Social Dimensions of Global Environmental Change (GEC)</b> Social Dimensions of GEC – Eduardo Viola, University of Brasilia/Brazil Natural Dimensions of GEC – Bill Solecki, Montclair State University/USA Sociopolitical perspective – Roldan Muradian, University of Barcelona, Spain
		Panel Discussion
Tuesday	9:00 - 12:00	Regional Brassess of Urbanization
Tuesday June 4	9:00 - 12:00	Regional Processes of Urbanisation Latin America – Roberto Sanchez, University of California/USA Africa – Gabriele Zdunnek, Humboldt University, Berlin/Germany
	14:00 - 18:00	Eastern and Central Europe/Russia - Olga Medvedkov, Wittenberg University/USA Asia - Peter Marcotullio, UNU/IAS, Tokyo/Japan
		Panel discussion with the Presenters
		Introduction: Databases and Tools Francesca Pozzi, CIESIN, New York/USA Chhemendra Sharma, National Physical Laboratory, New Delhi/India

Wednesday June 5	9:00 - 12:00	Urban Processes Xuemei Bai , Yale University/USA
		Effects of Land Use Planning on Transportation and its Environmental Impacts Brian Baird, University of Connecticut/USA
	14:00 – 18:00	Social Shaping of Urban Space David Simon, University of London/UK
		Governance Yap Kioe Sheng, UN Human Settlements Section/The Netherlands
		Work on Individual Projects
Thursday June 6	9:00 – 12:00	Environmental Problems Joe Leitmann, World Bank
		Atmospheric Chemistry Andrew Matthews, National Institute of Water & Atmospheric Research/New Zealand
	14:00 – 18:00	Work on Data Issues
	10.00	Work on Individual Projects
Friday	9:00-12:00	Urban Climate
June 7	9.00-12.00	M. Santamouris, University of Athens/ Greece
		Work on Individual Projects
	14:00 – 18:00	Vulnerability Roberto Sanchez, University of California/USA
		Work on Individual Projects

Saturday		FREE
June 8		
ound o		Barbecue
	evening	
Sunday	All day	Work on Individual Projects
June 9		
Monday	9:00 - 12:00	Eco-Efficiency, Factor Four and some Research Perspectives
June 10		Raimund Bleischwitz, Wuppertal Institute/Germany
		IHDP and National Committees
		Sylvia Karlsson, Debra Meyer-Wefering, IHDP Secretariat
		Work on Individual Projects
	14:00 - 18:00	Health
		Roberto Sanchez, University of California/USA
		Work on Individual Projects
Tuesday	9:00 - 12:00	Water
June 11		Chris Cocklin, Monash University, Victoria/Australia
		Presentation of Tri-Academy Project
		Cynthia Simmons, Central Michigan University/USA
	14:00 - 18:00	The Sustainable Urban Development and Establishment of Municipal Networks
		– ICLEI
		Diana Segovia, Regional ICLEI Office, Brazil
		Timothy Phillips, ICLEI-Europe, Freiburg/Germany
		Work on Individual Projects

Wednesday	9.00 - 12:00	Funding Opportunities for Young Scholars
June 12		Mohamed Salih, Institute of Social Studies/The Netherlands
	14:00 – 18:00	Case Study on a Latin American City
		Günther Mertins, University of Marburg/Germany
		Case Study Bangkok
		Frauke Kraas, University of Cologne/Germany
		Work on Individual Projects

Thursday June 13	9:00 - 12:00	Individual Projects Presentation and Discussion: LUCC
		Maria Falaleeva, Belarusian State University/Belarus: Landscape Analysis of Urban Planning Structure: Case Study of the City of Minsk.
		Lucie Kupkova, Charles University of Prague/Czechoslovakia: <b>Changes of</b> Landscape in Prague Sub-Urban Area in the Periods Before and During Transformation.
		Anton Skaruba, Belarusian State University/Belarus: <b>System Analysis of City</b> <b>Development: Case Study of Wooden Residential Estates in the City of Mogilev</b> (Belarus).
		He Chunyang, Bejing Normal University/China: Land use/ Land Cover Dynamics in Bejing under the Open Policy in China.
		Erna López Granados, National University of Mexico (UNAM)/Mexico: Land-Cover and Land-Use Change in Urban Cities. A Case in Cuitzeo's Lake Watershed.
		Madhavi Latha Karumudi, National Remote Sensing Agency, India: <b>Measuring Urban</b> <b>Sprawl Using the Entropy Approach: A Case Study from Hyderabad City Using</b> <b>Remote Sensing and GIS.</b>
		Ernan Rustiadi, Agricultural University, Bogor, Indonesia: Suburbanisation Process, Land Use Cover Change and Environmental Changes in Jabotabek Region.
	14:00-18:00	Individual Projects Presentation and Discussion: URBAN PATTERNS
		Aloyce Masanja, University of Dar es Salaam/Tanzania: <b>Rural-Urban Dynamics:</b> Modelling and Predicting Land Use Changes in Peri-Urban Interface in Dar Es Salaam City, Tanzania.
		Ben Arimah, University of the West Indies/Jamaika: Health Consequences of Deficient Infrastructure in Cities of Developing Countries.
		Franklin Opijah, University of Nairobi/Kenya: Numerical Simulation of the Influence of Urbanisation on the Convective Activities over Nairobi.
		Adedayo Ayorinde, Sustainable Ibadan Projec/Nigeriat: A Demonstration of the Sustainable Cities Programme Approach in Nigeria.

Claudia de Almeida, Brazil: Understanding and Modelling Urban Land Use Dynamics to Achieve Sustainability.
Aboul-Fetouh Shalaby, Cardiff University Wales/England: Unsustainable Desert Settlements in Egypt: The Product, the Process and Avenues for Future Research.
Susana Pérez Medina, Research Center and Advanced Studies/Mexico: Urban Growth Model and Its Impact in the Quality of Life in Merida, Yucatan, Mexico.

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		<ul> <li>Otilia Marin, Polytechnic Univeristy of Bucharest/Romania: Local and National Measures Necessary for Transition to Sustainable Development Focused on Town of Slatina, Romania.</li> <li>Dan Hu, Chinese Academy of Sciences/China: Ecological Services with Urbanisation Stresses in East China.</li> <li>Individual Projects Presentation and Discussion: GOVERNANCE</li> <li>Alla Bolotova, European University at St. Petersburg/Russia: Environmental Movement in Russian Megapolis: Development of Sustainable Infrastructure and Environmental Awareness: Case Study of Solid Waste Management in ST. Petersburg.</li> <li>Alén Pérez Casas, International Development Research Centre/Canada: The Use of Information and Communication Technologies to the Environmental Management with Public Participation.</li> <li>Sabina Frederic, University of Quilmes, Buenos Aires/Argentina: Facing Nature: Political Practices Towards Floods in Buenos Aires Metropolis.</li> <li>Lwasa Shuaib, Makere University/Uganda: Informal Land Markets and Housing Development in Kampala: Processes and Implications to the Urban Environment and Planning.</li> <li>Dymphina Andima/Kenya: Assessing impacts of urban agriculture on the environment and socio-economic structures of communities in Kisii, Kenya.</li> </ul>
Saturday June 15	9:00 - 12:00	WRAP-UP Chris Cocklin and Roberto Sanchez
	evening	PARTY at Maarit's place
Sunday June 16	All day	Participants leave

#### Appendix B Participants List

#### Africa

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# Appendix E List of Abbreviations & Acronyms

	A cian Ener Trade A concernent
AFTA	Asian Free Trade Agreement
APN	Asia-Pacific Network for Global Change Research
ASEAN	Association of South East Asian Nations
BASA	Bank of Amazonia
CDG	Carl Duisberg Gesellschaft
CDM	Clean Development Mechanism
CTP	Common Effluent Treatment Plant
DFG	German Science Foundation
DPSIR	Drivers, Pressures, State and State-change, Impact, Response Approach
EEZ	Exclusive Economic Zone
EPA	Environmental Protection Act
FRN	Swedish Council of Planning and Coordination of Research
FUNAI	National Indian Foundation
GATT	General Agreement on Tariffs and Trade
GEF	Global Environment Facility
GC	Global Change
GEC	Global Environmental Change
GECHS	Global Environmental Change and Human Security, IHDP Science Project
GHG	Greenhouse Gas
GIS	Geographic Information Systems
GTZ	German Agency for Technical Co-operation
HD	Human Dimensions
IAI	Inter-American Institute for Global Change Research
ICLIPS	Integrated Assessment of Climate Protection Strategies
ICRAF	International Centre for Research in Agroforestry
ICSU	International Council for Science
ICZM	Integrated Coastal Zone Management
IDGEC	Institutional Dimensions of Global Environmental Change, IHDP Science Project
IGBP	International Geosphere-Biosphere Programme

ICZM	Integrated Coastal Zone Management
IDGEC	Institutional Dimensions of Global Environmental Change, IHDP Science Project
IGBP	International Geosphere-Biosphere Programme
IGES	Institute for Global Environmental Strategies, Japan
IGIDR	Indira Gandhi Institute of Development Research, India
IHDP	International Human Dimensions Programme on Global Environmental Change
IHDW	International Human Dimensions Workshop
IMF	International Monetary Fund
ISME	International Society of Mangrove Ecosystems
ISSC	International Social Science Council
IT	Industrial Transformation, IHDP Science Project
LOICZ	Land-Ocean Interactions in the Coastal Zones, IGBP Core Project
LUCC	Land-Use and Land-Cover Change, IHDP-IGBP Joint Science Project
MAB	UNESCO Man and Biosphere Programme
MMA	Ministry of the Environment, Water Resources and Legal Amazon, Brazil
MSS	Multi-Spectral Scanner
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Cooperation and Development
PIK	Potsdam Institute for Climate Impacts Research, Germany
SAE	Secretariat for Strategic Affairs, Brazil
SARCS	Southeast Asia Regional Committee for START
SIVAM	Surveillance System of the Amazon Region
SSC	Scientific Steering Committee
START	Global Change SysTem for Analysis, Research and Training
SUDAM	Superintendent for the Development of Amazonia, Brazil

SWOL	SARCS/WOTRO/LOICZ core research project
TEACOM	START Committee for Temperate East Asia
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational and Scientific Organisation
UNFCCC	United Nations Framework Convention on Climate Change
US-NSF	United States National Science Foundation
WCRP	World Climate Research Programme
WHO	World Health Organisation
WMO	World Meteorological Organisation
WOTRO	Netherlands Foundation for the Advancement of Tropical Research

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