

Report on the

IUSSP Seminar on Population Dynamics and the Human Dimensions of Climate Change

Australian Demographic and Social Research Institute,
College of Arts and Sciences, Australian National University

Canberra, 27-29 November 2012

Report



International Union for the Scientific Study of Population ■ **IUSSP**
Union internationale pour l'étude scientifique de la population ■ **UIESP**

Report

The first Seminar sponsored by the IUSSP Panel on Climate Change, titled 'Population dynamics and the human dimensions of climate change,' was hosted by the Australian Demographic and Social Research Institute (ADSRI), part of the College of Arts and Social Sciences (CASS) at the Australian National University. The Seminar was held in the Hedley Bull Centre of the ANU over 2½ days during 27-29 November. After the close of the Seminar a public lecture was given by IUSSP Panel member Professor Wolfgang Lutz, titled 'Human resources for sustainable development: The demography of human capital formation.'

The Seminar Organizer was Dr Adrian C Hayes, Chair of the IUSSP Panel on Climate Change and faculty member (adjunct) of ADSRI.

Funding

We gratefully acknowledge financial support from the following organizations: Australian Government Department of Sustainability, Environment, Water, Population and Communities; CASS (ANU), ADSRI (ANU); the John C Caldwell Endowment (ANU); and the IUSSP.¹

Participants

There were 22 participants, plus 5 ANU Ph D students who attended as observers (one of whom served as Rapporteur). The participants came from all habited continents: 1 from Africa; 4 from Asia; 8 from Australia; 2 from Europe; 6 from North America; and 1 from South America.² The participants were all researchers, the majority from universities and a couple from international organizations.

Objectives

The main objective of the Seminar was to bring together key researchers working in the new field of population dynamics and climate change in order to take stock of what progress has been made to date and assess future prospects.³ This involved sharing and consolidating our understanding of on-going research and, most importantly, discussing priorities for future research and collaboration. Part of the discussion was devoted to assessing the strengths and weaknesses of emerging population-based research paradigms for climate policy.

¹ Major funding had been expected from a couple of other Australian sources but they did not eventuate, partly it seems because of the current global financial crisis.

² The statistics reflect current place of residence, not place of birth or current citizenship.

³ 'Population dynamics' here includes population structure and composition by selected characteristics like education and place of residence (urban-rural), and not just age and sex.

A secondary aim was to explore the potential use of population perspectives to help integrate insights into the causes and consequences of anthropogenic climate change from across the social sciences and to facilitate understanding across the natural science-social science divide.

Program

The seminar program was organized around 4 thematic questions:

- How do population dynamics contribute to the anthropogenic causes of climate change?
- How are population dynamics affected by climate change?
- How do population dynamics influence the human and ecological impacts of climate change and options for adaptation?
- How should population dynamics be incorporated into public policy responses to climate change across different scales and administrative levels?

One session was devoted to each thematic question. Additional sessions addressed population dynamics and the next generation of climate scenarios; data and methodological issues; emerging research priorities; and brainstorming.

Outcomes

Papers presented at the Seminar – both invited papers and those selected from submissions – provided instructive cutting-edge examples of how researchers are attempting to answer the thematic questions. Research showing that population dynamics matter when it comes to understanding the causes and consequences of anthropogenic climate change has grown considerably since the turn of the century. The field is fragmented, however, with different researchers applying different methods and theories across different geographical areas and time scales, and relatively little effort has been devoted to systematic comparison of results and approaches or to conceptual integration. More points-in-common and coordination are needed among the different strands of research if more definitive answers to the thematic questions about population dynamics and climate change are to be achieved.

The most important outcome from our seminar discussion was the identification of an exciting window of opportunity for population research on climate change. It lies in positioning our research vis-à-vis the next generation of climate scenarios, specifically the so-called Shared Socioeconomic Pathways (SSPs) currently under development.⁴ The Seminar opened with a special session titled ‘Update on the role of population dynamics in the next generation of scenarios for climate change research,’ with three speakers involved

⁴ See Richard H Moss et al., 2010, ‘The next generation of scenarios for climate change research and assessment,’ *Nature* 463: 747-756; and Nigel Arnell et al., 2011, ‘A framework for a new generation of socioeconomic scenarios for climate change impact, adaptation, vulnerability, and mitigation research,’ available at <http://www.isp.ucar.edu/socio-economic-pathways>.

in work on these scenarios: Brian O'Neill, Wolfgang Lutz and Leiwen Jiang. They explained in detail how population dynamics and other social elements have been incorporated in the SSPs, and how they are likely to be used by the International Panel on Climate Change (IPCC).

In a subsequent brainstorming session it became clear to many participants that the way expert modellers have identified 'representative socioeconomic pathways' – using a property space defined by socioeconomic challenges to mitigation and adaptation respectively – in effect outlines a major new research agenda for population research on climate change (and, arguably, for all research on the human dimensions of climate change). Seizing this opportunity promises (i) to facilitate more synergy and collaboration among population scientists working on different strands of research, and with other social scientists working on climate change, and (ii) to considerably increase the visibility of population research among climate scientists.

The Panel on Climate Change will continue to develop this new research agenda and explore its implications for more fruitful scientific and professional links among population scientists, and with other social scientists and climate scientists.

Publication Plans

A selection of papers presented in the Seminar will be published in the journal, *Population and Environment*. The journal's editor, Lori Hunter, was a key participant in the Seminar. The tentative plan is to have a collection of papers presented in a special issue with two panel members (Susana Adamo and Adrian Hayes) serving as guest editors. We are aiming for the December 2013 issue. Papers will be subject to the journal's normal peer review process.

Future Projects

The Panel on Climate Change is sponsoring a regular session titled 'Population dynamics and climate change' at the August 2013 Busan Meetings (under the theme, Population and the environment).

A second international seminar sponsored by the Panel on Climate Change is scheduled for April 2014, with core funding generously provided by the Wittgenstein Centre. The tentative title is, 'Differential vulnerability: Age, sex, education and place of residence.' The Seminar will be co-hosted by Chulalongkorn University and held in Thailand. Wolfgang Lutz has kindly volunteered to take the lead in organizing this seminar.

IUSSP Seminar on Population Dynamics and the Human Dimensions of Climate Change

Australian Demographic and Social Research Institute,
College of Arts and Social Sciences, Australian National University
Canberra, 27-29 November 2012

Venue: Hedley Bull Centre, Lecture Theatre 1 and Seminar Room 3

Day 1, 27 Nov

9.30 – 10.00 Registration

10.00 – 10.45 **1. Opening Session**

Welcome & opening remarks: Peter McDonald, ADSRI & IUSSP
President

Objectives of seminar: Adrian Hayes, ADSRI & Chair of IUSSP Panel on
Climate Change

Brief self-introductions

10.45 – 11.15 Coffee break

11.15 – 12.30 **2. Special panel session: Update on the role of population dynamics in the next generation of scenarios for climate change research**

Brian O'Neill, National Center for Atmospheric Research, Boulder, USA

Wolfgang Lutz, Wittgenstein Center & International Institute for
Applied Systems Analysis, Vienna, Austria

Leiwen Jiang, National Center for Atmospheric Research, Boulder, USA

12.30 – 1.30 Lunch

1.30 – 3.00 **3. Thematic Session: How do population dynamics contribute to the anthropogenic causes of climate change?**

Brantley Liddle, Victoria University, Melbourne, Australia, 'Impacts of
population, age structure, and urbanization on greenhouse gas
emissions/energy consumption: Evidence from macro-level, cross-
country analyses'

Ignacio Cruz, (*unable to attend*) El Colegio de Mexico, Mexico City,
'Mexican households' energy consumption'

Jerzy Banski, Maria Curie-Sklodowska University in Lubin, Poland,
'Modern-day demographic processes in central Europe and their
potential interactions with climate change'

3.00 – 3.30 Coffee break

3.30 – 5.00

4. Thematic Session: How are population dynamics affected by climate change?

Graeme Hugo, University of Adelaide, 'Climate change and migration in Southeast Asia'

Lori Hunter, University of Colorado at Boulder, 'Natural resource availability and outmigration in rural South Africa'

Katherine Curtis, (*unable to attend*) University of Wisconsin-Madison 'Do migration systems predict post-disaster migration patterns? The case of the Gulf of Mexico coastal counties before and after Hurricanes Katrina and Rita'

Zhongwei Zhao, ADSRI, 'Towards a better understanding of daily mortality changes and climate change'

Day 2, 28 Nov

9.00 – 10.30

5. Thematic Session: How do population dynamics influence the human and ecological impacts of climate change and options for adaptation?

Alisson Barbieri, Universidade Federal de Minas Gerais, Brazil, 'Population transitions and climate change: A multidimensional index of population vulnerability in Brazil'

David Lopez-Carr, University of California at Santa Barbara, USA, 'Mapping population vulnerability in Africa'

Akindeji Falaki, University of Ilorin, Nigeria, 'Demographic determinants of rural farmers' perceptions and adaptive capacity to climate change in North Central Nigeria'

10.30 – 11.00

Coffee break

11.00 – 12.30

6. Thematic Session: Studying adaptive responses: data, concepts and methodological issues

Subramaniam Chandrasekhar, Indira Gandhi Institute of Development Research, Mumbai, India, 'Population at risk of climate change induced events and forced migration: Policy disconnect, data disconnect and knowledge gaps in India'

Pronob Mozumder, (*unable to attend*) Nature Conservation Management, Dhaka, Bangladesh, 'Climate change adaptation among fisher communities in coastal region of Bangladesh'

Susana Adamo, Columbia University, New York, USA

Kim Streatfield, ICDDR,B, Dhaka, Bangladesh

12.30 – 1.30	Lunch
1.30 – 3.00	<p>7. Thematic Session: How should population dynamics be incorporated into public policy responses to climate change across different scales and administrative levels?</p> <p><u>Clive Muntunga</u>, Population Action International, Washington DC, USA, ‘Population dynamics and climate compatible development in Africa’</p> <p><u>Brian O’Neill</u>, NCAR, USA, ‘The effect of education on challenges to climate change mitigation and adaptation’</p> <p><u>Wolfgang Lutz</u>, IIASA, Austria, ‘Effects of educational attainment on climate risk vulnerability’</p>
3.00 – 3.30	Coffee break
3.30 – 5.00	<p>8. Thematic Session: What are the emerging research priorities for demographers and population experts?</p>
6.30 for 7.00	Seminar dinner for participants and guests, University House
Day 3, 29 Nov	
9.00 – 10.30	<p>9. Special Session on Looking Ahead: Discussion of future activities for the IUSSP Panel on Climate Change, especially the Second Seminar, ‘Differential vulnerability: Age, sex, education and place of residence’</p>
10.30 – 11.00	Coffee break
11.00 – 12.30	<p>10. Closing Session: Panel discussion and final wrap-up</p>
12.30	Lunch
5.00 – 6.30	<p>Public Lecture</p> <p>Co-hosted by ADSRI and CSIRO</p> <p>Wolfgang Lutz, Wittgenstein Centre, Vienna, ‘Human resources for sustainable development: The demography of human capital formation’</p>

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