

Report on the

IUSSP Seminar on Demographic Vulnerability to Natural Disasters in the Context of Climate Change Adaptation

College of Population Studies, Chulalongkorn University, and
Wittgenstein Centre for Demography and Global Human Capital,

Kao Lak, Phang Nga, Thailand, 23-25 April 2014



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

The second Seminar sponsored by the IUSSP Panel on Climate Change, titled ‘Demographic Differential Vulnerability to Natural Disasters in the Context of Climate Change Adaptation,’ was hosted jointly by the College of Population Studies, Chulalongkorn University, Bangkok, and the Wittgenstein Centre for Demography and Human Capital (IIASA, VID/ÖAW and WU) (WIC), Vienna. The Seminar was held in Kao Lak, Phang Nga, Thailand over 2½ days during 23-25 April 2014.

The Seminar Organizers were Prof Wolfgang Lutz, member of the IUSSP Panel on Climate Change and founding director of WIC, and Dr Raya Muttarak, research scholar at WIC.

Funding

We gratefully acknowledge financial support from the European Research Council (grant agreement: ERC-2008-AdG 230195-FutureSoc) and Chula Global Network.

Participants

There were 42 participants, including three speakers in the roundtable discussion representing local stakeholders. The participants came from across the globe: 2 from Africa; 16 from Asia; 2 from Australia; 13 from Europe; and 9 from North America¹. The participants were mainly researchers and doctoral students, the majority from universities and a couple from international organizations. Stakeholders come from various sectors including business, local government and NGO.

Objectives

The main objective of the Seminar was to bring together researchers working in the area overlapping between population dynamics², response to natural disasters, and adaptation to climate change. The Seminar aims to strengthen the application of analytical tools in demography in studying demographic and socio-economic differentials to the field of risk, vulnerability and climate change. This Seminar is also the concluding meeting of an ERC (European Research Council) Advanced Investigator Grant awarded to Wolfgang Lutz 2008 on the topic “Forecasting societies’ adaptive capacity to climate change”. In addition, the Seminar holds the outreach activity through organizing the roundtable discussion with local stakeholders.

¹ The statistics reflect current place of residence, not place of birth or current citizenship.

² ‘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.

Program

The seminar program was organized around 4 research themes:

- Differential impacts of natural disasters on mortality, loss, damage and recovery
- Differential coping strategies including migration
- Case study of differential vulnerability and how to best prepare for environmental change in Thailand
- Vulnerability and risk assessment: micro- and global-level and projection

There were 9 sessions in total. The first day of the seminar addressed how the impacts of natural disasters and climate change were distributed unevenly across population subgroups and how coping strategies vary with demographic characteristics. Half a day of the second day was dedicated to the case study of differential vulnerability in the coastal zones in Thailand's context including a roundtable discussion with local stakeholders. The last three sessions were related to vulnerability and risk assessments both at the micro- and global-level and in comparative perspective including projection of future vulnerability considering the change in human capital distribution.

Outcomes

Papers presented at the Seminar provided empirical insights on demographic differential vulnerability, i.e. impacts, responses, coping strategies, and recovery from natural hazard events all vary by demographic characteristics (e.g. age, sex, education, geographic location) across different units of analysis – from individual, household, community to global level. Consequently, the Seminar established a platform for social scientists of different disciplines working on the issue of vulnerability and climate change to exchange expertise and knowledge on the topic.

The common consensus arising from the discussion was that demographic characteristics should be incorporated into the geographical assessment of vulnerability (i.e. it matters both who you are and where you are), and vulnerability indices need to be validated vis-à-vis actual experience of natural disasters. Meanwhile, it is important to consider geophysical characteristics that determine exposure to hazards when investigating demographic differential vulnerability.

Output dissemination

All presentation slides and videos can be viewed online via the following links:

Slides

http://www.iiasa.ac.at/web/home/research/researchPrograms/WorldPopulation/FeaturedHighlights/Highlights_Int_Seminar_2014.html

Videos

<http://www.iiasa.ac.at/web/home/research/researchPrograms/WorldPopulation/PublicationsMediaCoverage/Multi.en.html>

Publication Plans

A selection of papers presented at the Seminar will be published in the journal *Vienna Yearbook of Population Research*. The journal's editor, Wolfgang Lutz, who is also a panel member, was a key participant in the Seminar. The plan is to have a collection of papers presented in a special issue with one panel member (Leiwen Jiang) and one of the Seminar organizers (Raya Muttarak) serving as guest editors. The special issue is expected to be published in December 2015. Papers will be subject to the journal's normal peer review process.

Future Projects

The Panel on Climate Change will come to the end of its term in December 2014. Panel members met in Kao Lak to discuss options for future activities. They share a common belief that it is extremely important that IUSSP maintains its support for studying the role of population dynamics in climate change. The discussion of how best to advance this agenda is still underway.



International Union for the
Scientific Study of Population



Wittgenstein Centre

FOR DEMOGRAPHY AND
GLOBAL HUMAN CAPITAL
A COLLABORATION OF IIASA, VID/ÖAW, WU

International Seminar on Demographic Differential Vulnerability to Natural Disasters in the Context of Climate Change Adaptation

Kao Lak, Phang Nga, 23-25 April 2014

Programme

Wednesday, 23 April 2014

08:20-08:50 **Registration**

08:50-09:10 **Opening**

Moderator: Raya Muttarak

Worawet Suwanrada, Dean of the College of Population Studies (CPS)

Adrian Hayes, Chair of the IUSSP Scientific Panel on Climate Change

09:10-09:30 **Thematic introduction to the conference**

Wolfgang Lutz, Founding director of the Wittgenstein Centre (IIASA, VID/ÖAW, WU)

Session 1: Differential impacts of natural disasters: Mortality

Chair: Jesus Crespo Cuaresma

09:30-10:05 Martin Flatø, Andreas Kotsadam

Droughts and gender bias in infant mortality in Sub-Saharan Africa

10:05-10:40 Zhongwei Zhao, Yuan Zhu, J. Zhao, Ed Tu

Who have been more vulnerable to extreme temperature? Observations made in Taiwan 1971-2007

10:40-11:15 Emilio Zhaghenni, Raya Muttarak, Erich Striessnig

The differential impact of meteorological disasters on mortality: Evidence from death registration systems

11:15-11:45 **Coffee break**

Session 2: Differential impacts of natural disasters: Loss and damage, response and recovery

Chair: Elke Loichinger

- 11:45-12:20 Kees van der Geest, Koko Warner
Vulnerability, coping and loss and damage from climate events
- 12:20-12:55 Dani Alfah, Roni Hermoko, Wayan Suriastini, Bondan Sikoki
Demographic differentials in vulnerability and resilience in a disaster-prone community: Evidence from the longitudinal study of Merapi 2012
- 12:55-13:30 Yuzhu Liu
Rural-urban differential vulnerability and its impact on post-disaster recovery: Evidence from western China

13:30-14:30 [Lunch break](#)

Session 3: Differential risk perceptions and coping strategies

Chair: Thanyaporn Chankrajang

- 14:30-15:05 Jacqueline Meijer-Irons
Who perceives what? A demographic analysis of environmental risk perception in rural Thailand
- 15:05-15:40 Chandrashekhara and Bornali Dutta
Livelihood strategies in response to drought and its socio-economic determinants in Andhra Pradesh, India
- 15:40-16:15 Joan Urquiola, Leonardo Florece, Juan Pulhin, Victoria Espaldon
Social vulnerability and adaptation to climate variability and extremes at northern Barangays of Puerto Princesa city, Philippines
- 16:15-16:45 [Coffee break](#)

Session 4: Migration as coping and adaptation strategies

Chair: Susana Adamo

- 16:45-17:20 Charles Teller, Teshome Desta, Dula Etana, Yordanos Seifu
Migratory patterns and differential vulnerability as adaptation to climate variability: Case studies of rural youth outmigration in Ethiopia
- 17:20-17:55 Caroline Zickgraf, Nathalie Perrin, François Gemenne,
Assessing how demographic differentials affect migration patterns under extreme climate scenarios
- 19:00 [Dinner reception hosted by the College of Population Studies](#)

Session 5: Case study of differential vulnerability in Thailand and Phang Nga province

Chair: Adrian Hayes

08:45-09:00 Documentary on 2004 Indian Ocean tsunami

09:00-09:30 Nopphol Witworapong, Raya Muttarak, Wiraporn Pothisiri
Social participation and disaster risk reduction behaviours: Case study of tsunami-risk areas in southern Thailand

09:30-10:00 Thanyaporn Chankrajang, Raya Muttarak
Who is concerned and does something about climate change? Gender and education divide among Thais

10:00-10:30 Raya Muttarak, Wolfgang Lutz, Wiraporn Pothisiri
Where would you build your new house? Demographic differentials in adaptation

10:30-11:00 Elke Loichinger, Samir KC
4-D population scenarios for future adaptive capacity in Phang Nga

11:00-11:30 [Coffee break](#)

Session 6: How to best prepare for environmental change on the Andaman Coast?

Moderator: Wolfgang Lutz

11:30-13:00 Roundtable discussion
Panellist:
Sommart Krawkeo, Hanseatic School for Life, Phang Nga
Prapud Khorpeach, Phang Nga Tourist Association
Crisel M. Lope-Dumadaug, Municipality of Maasin, Province of Iloilo, the Philippines

13:00-14:00 [Lunch break](#)

Session 7: Vulnerability and risk assessment: Micro-level perspective

Chair: Mark Montgomery

14:00-14:35 Andres Ignacio, Grace Cruz, Sabine Henry
Assessing the efficacy of social vulnerability measurements through the impacts of disasters

14:35-15:05 Chukwuedozie Ajaero, Arinze Mozie
Socio-demographic differentials in vulnerability to flood disasters in rural southeastern Nigeria

15:05-15:25 [Coffee break](#)

15:30-18:00 Excursion (Kao Lak National Park and Tsunami Memorial Park)

Friday, 25 April 2014

Session 8: Vulnerability and risk assessment: Global-level and comparative perspective

Chair: Samir K.C.

09:00-09:35 Stefan Kienberger, An Notenbaert, Joost Vervoort, Demian Snel
Crystal ball or future pathways: Opportunities and constraints for spatially explicit vulnerability scenarios to climate change impacts

09:35-10:05 Danan Gu, Patrick Gerland, Kirill Andreev, Nan Li, Thomas Spoorenberg, Gerhard Heilig
Risks of exposure of world's cities to natural hazards

10:05-10:40 Mark Montgomery, Samir Souidi, Deborah Balk
Extreme-Event Risks and Adaptation: What Can We Learn from Guatemala?

10:40-11:10 [Coffee break](#)

Session 9: Projecting vulnerability through the lens of human capital

Chair: Leiwen Jiang

11:10-11:45 Erich Striessnig
Future differential vulnerability to natural disasters by level of education

11:45-12:20 Jesus Crespo Cuaresma, Wolfgang Lutz
The demography of human development and climate change vulnerability: A projection exercise

12:20-12:45 Wolfgang Lutz and Vipan Prachuabmoh
Concluding remarks

12:45-14:00 [Lunch break](#)

Funding agencies



European
Research
Council



List of Participants: International Seminar on Demographic Differential Vulnerability to Natural Disasters in the Context of Climate Change Adaptation

Kao Lak, PhangNga, 23-25 April 2014

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