

International Young Scientists' perspective on global change issues

Sonja Wipf · Francisco J. Meza

Received: 18 December 2008 / Accepted: 18 December 2008 / Published online: 17 February 2009
© Springer Science + Business Media B.V. 2009

On November 5–8, 2006, the 2nd International Young Scientists' Global Change Conference took place at the Science and Technology building of the China Meteorological Administration in Beijing, China. The conference was endorsed by the Earth System Science Partnership and was organized by START (the global change SysTEM for Analysis, Research and Training) and the China Meteorological Administration.

A group of 100 young scientists were selected by international review panels from over 700 applications to participate in the conference. Different disciplines, methodological approaches, and cultural backgrounds had the opportunity to communicate, providing an excellent overview of the advances and challenges in global change science. The conference offered all participants a prestigious platform to present

S. Wipf (✉)
WSL Institute for Snow and Avalanche Research SLF,
Fluelastr. 11, 7260, Davos Dorf, Switzerland
e-mail: wipf@slf.ch

S. Wipf
Institute of Environmental Sciences, University of Zurich,
Winterthurerstr. 190, 8057, Zurich, Switzerland

S. Wipf
The Macaulay Institute, Craigiebuckler, Aberdeen, AB15 8QH, UK

F. J. Meza
Facultad de Agronomía e Ingeniería Forestal, Pontificia Universidad Católica de Chile,
Santiago, Chile

F. J. Meza
Centro Interdisciplinario de Cambio Global, Pontificia Universidad Católica de Chile,
Santiago, Chile

their current research to each other and to leading scientists in the different fields of global change research. It also fostered professional and institutional networks and seeded new ideas, hypotheses and approaches that will certainly impact the work of the new generation of global change researchers.

This special edition features a selection of papers authored by participants of the Young Scientists' Global Change Conference. It represents the efforts of a new generation of global change scientists. Less than 35 years of age, they work in a variety of environments—some in developed country universities, others in developing country institutions; some are part of large international teams, others work essentially by themselves. They do not hesitate to cross boundaries of nationality or disciplinary training, and are taking on some of the burning questions in global change science.

The table of contents reflects the wide range of research topics, geographical coverage, and methodological approaches in the papers presented at the conference. The papers address cross-cutting issues in earth system vulnerability, looking at climate change in conjunction with biodiversity loss and desertification, as well as evaluating adaptation options along with mitigation strategies. The papers included in this special issue model climate variability and change (Islam et al. 2009), and study the impacts of such changes on the cryosphere (Arigony-Neto et al. 2009; Haritashya et al. 2009), terrestrial ecosystems (Cui and Graf 2009; Nogué et al. 2009; Parker-Allie et al. 2009; Wang et al. 2009; Wipf et al. 2009), agricultural systems (Meza and Silva 2009; Sultana et al. 2009), and coastal communities (Badjeck et al. 2009; Sharma et al. 2009). They go on to explore response strategies from the individual to the national level—farm-level adaptation (Meza and Silva 2009), forest sequestration policies and incentives (Han and Youn 2009), and renewable energy use (Urban et al. 2009).

At a time when the IPCC Fourth Assessment Report points out “a notable lack of geographic balance in data and literature on observed changes, with marked scarcity in developing countries” (IPCC 2007), these papers aim to improve our understanding of global change around the world. They provide further knowledge about impacts and coping strategies, vulnerable sectors, and communities in developing countries. In Africa, the papers document desertification and ecosystem changes; in South America, this issue focuses on biodiversity loss in Venezuela, agricultural adaptation in Chile, and artisanal fisheries in Peru; in Asia, this issue presents cyclone preparedness in India, climate extremes and their effects on agriculture in Pakistan, renewable energy use in China, land cover changes in Tibet, forest management in Korea, and glacier retreat in Afghanistan.

The conference that brought these young researchers together and enabled this special edition would not have been possible without the tremendous commitment and support by a great many people and organizations. We are especially grateful to: Roland Fuchs and Hassan Virji of START, who initiated the conference and secured its funding. Prof. Peter Tyson, who chaired the organizing committee; Gordon McBean and Graeme Pearman, the Co-Chairs of the START Scientific Steering Committee; the China Meteorological Administration in Beijing, which generously hosted the event, and its staff including Qin Dahe, Sun Rui and Chen Zhenlin; Amy Freise, Sandy Stowe, Katherine Landauer and the rest of the team at the International START secretariat, who handled all the logistics and got everyone to the conference. We are also grateful to the keynote speakers of the conference, Congbin Fu and Nobel Laureate Paul Crutzen, and to the members of the global

change science community who chaired and attended the sessions and provided a very stimulating environment. Moreover, we would like to acknowledge the generous support from the following sponsors and partners:

- The Academy of Sciences for the Developing World (TWAS)
- The Asia-Pacific Network for Global Change Research
- The AIMES Project of IGBP
- The China Meteorological Administration
- The Earth System Science Partnership
- The European Commission
- The European Science Foundation
- The Foundation for the Advancement of Tropical Research
- The Inter-American Institute for Global Change Research
- The Netherlands Ministry of Foreign Affairs (DGIS)
- The Research Council of Norway
- The Swiss National Science Foundation
- The United States National Science Foundation
- The United States Climate Change Science Program

References

- Arigony-Neto J, Saurer H, Simões JC, Rau F, Jaña R, Vogt S, Gossman H (2009) Spatial and temporal changes in dry-snow line altitude on the Antarctic Peninsula. *Clim Change*. doi: [10.1007/s10584-009-9550-1](https://doi.org/10.1007/s10584-009-9550-1)
- Badjeck M-C, Mendo J, Wolff M, Lange H (2009) Climate variability and the Peruvian scallop fishery: the role of formal institutions in resilience building. *Clim Change*. doi: [10.1007/s10584-009-9545-y](https://doi.org/10.1007/s10584-009-9545-y)
- Cui X, Graf HF (2009) Recent land cover changes on the Tibetan plateau: a review. *Clim Change*. doi: [10.1007/s10584-009-9556-8](https://doi.org/10.1007/s10584-009-9556-8)
- Han K, Youn YC (2009) The feasibility of carbon incentives to private forest management in Korea. *Clim Change*. doi: [10.1007/s10584-009-9551-0](https://doi.org/10.1007/s10584-009-9551-0)
- Haritashya UK, Bishop MP, Shroder JF, Bush ABG, Bulley HNN (2009) Space-based assessment of glacier fluctuations in the Wakhan Pamir, Afghanistan. *Clim Change*. doi: [10.1007/s10584-009-9555-9](https://doi.org/10.1007/s10584-009-9555-9)
- IPCC (ed) (2007) *Climate Change 2007: the physical science basis. Contribution of working group I to the fourth assessment report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, New York
- Islam SU, Rehman N, Sheikh MM (2009) Future change in the frequency of warm and cold spells over Pakistan simulated by the PRECIS regional climate model. *Clim Change*. doi: [10.1007/s10584-009-9557-7](https://doi.org/10.1007/s10584-009-9557-7)
- Meza FJ, Silva D (2009) Dynamic adaptation of maize and wheat production to climate change. *Clim Change*. doi: [10.1007/s10584-009-9544-z](https://doi.org/10.1007/s10584-009-9544-z)
- Nogué S, Rull V, Vegas-Vilarrúbia T (2009) Modeling biodiversity loss by global warming on Pantepui, northern South America: projected upward migration and potential habitat loss. *Clim Change*. doi: [10.1007/s10584-009-9554-x](https://doi.org/10.1007/s10584-009-9554-x)
- Parker-Allie F, Musil CF, Thuiller W (2009) Effects of climate warming on the distributions of invasive Eurasian annual grasses: a South African perspective. *Clim Change*. doi: [10.1007/s10584-009-9549-7](https://doi.org/10.1007/s10584-009-9549-7)
- Sharma U, Patwardhan A, Parthasarathy D (2009) Assessing adaptive capacity to tropical cyclones in the East coast of India: a pilot study of public response to cyclone warning information. *Clim Change*. doi: [10.1007/s10584-009-9552-z](https://doi.org/10.1007/s10584-009-9552-z)

- Sultana H, Ali N, Iqbal MM, Khan MA (2009) Vulnerability and adaptability of wheat production in different climatic zones of Pakistan under climate change scenarios. *Clim Change*. doi:[10.1007/s10584-009-9559-5](https://doi.org/10.1007/s10584-009-9559-5)
- Urban F, Benders RMJ, Moll HC (2009) Renewable and low-carbon energies as mitigation options of climate change for China. *Clim Change*. doi:[10.1007/s10584-009-9553-y](https://doi.org/10.1007/s10584-009-9553-y)
- Wang L, D'Odorico P, Manzoni S, Porporato A, Macko S (2009) Soil carbon and nitrogen dynamics in southern African savannas: the effect of vegetation-induced patch-scale heterogeneities and large scale rainfall gradients. *Clim Change*. doi:[10.1007/s10584-009-9548-8](https://doi.org/10.1007/s10584-009-9548-8)
- Wipf S, Stoeckli V, Bebi P (2009) Winter climate change in alpine tundra: plant responses to changes in snow depth and snowmelt timing. *Clim Change*. doi:[10.1007/s10584-009-9546-x](https://doi.org/10.1007/s10584-009-9546-x)