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Director's Note

The World Congress of Environmental Economists provided an opportunity for EERH researchers to showcase the results of their Hub-funded activities to an assembly of the world's top scholars in the field. It was also a chance to hear a wide selection of contributed papers – choosing which of the many parallel sessions to attend was never easy. Two EERH PhD students – Sonia Akter and Gabriella Scheufele had papers accepted for presentation. Their sessions were well attended and they both did very professional jobs in setting out their research results.

The next major event for the Hub – the Economics and Environment Network Symposium – will be held across three days 22-24 November. The Symposium web-site has been established and general notification distributed. The Symposium will bring together Hub researchers and policy advisers along with the wider community of environmental and resource economists.

As well as being an opportunity to display the findings of the Hub projects, the Symposium will allow interaction with researchers from across Australia and the wider region.

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Hub Members selected as IPCC Authors

Frank Jotzo is a fellow and Senior Lecturer with the Resource Management in the Asia Pacific Program at the Crawford School of Economics & Government based at the Australian National University



David Stern is based in the Arndt-Corden Division of Economics and the Crawford School of Economics & Government and the Centre for Applied Macroeconomic Analysis based at the Australian National University



Invitations have gone out for participation in the writing teams for the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), to come out in 2014. Frank Jotzo and David Stern, both of ANU Crawford School and active in the Hub, have been selected as lead authors in the writing team for Working Group III (Mitigation of climate change) – David on the chapter "Drivers, Trends and Mitigation", Frank on the chapter "Social, Economic and Ethical Concepts and Methods". They'll be working alongside other leading researchers from around the world. Selection was highly competitive, with a total of 270 coordinating lead authors, lead authors and review editors invited. Among them are a total of six from Australia – in other words, the Hub accounts for a third of Australia's contingent in the new IPCC Working Group III AR5 writing team.

Experiences from the World Congress of Environmental & Resource Economists in Montreal, Canada.

Sonia Akter, Paul Mwebaze & Gabriela Scheufele



4th Edition

Montréal, Canada June 28 - July 2, 2010

Gabriela Schuefele, ANU

The Fourth World Congress of Environmental and Resource Economists, a joint initiative of EAERE and AERE, was held in Montreal, June 28 to July 2, 2010, on the campus of the Université du Québec à Montréal (UQAM). Over 700 papers were presented, including contributions from several HUB researchers: Sonia Akter ('Testing construct validity of verbal versus numerical measures of preference uncertainty in contingent valuation' - ANU), Jeff Bennett ('Using benefit transfer: an Australian policy perspective' - ANU), John Rolfe ('Valuing the control of red imported fire ants in Australia with choice modelling' - CQU), Jack Pezzey ('The importance of tax versus trading versus free emissions share for climate policy' - ANU), Gabriela Scheufele ('Ordering effects and response strategies in discrete choice experiments' - ANU), Paul Mwebaze (Economic valuation of the influence of invasive alien species on the economy of the Seychelles islands) and Michael Ward ('Recidivism, enforcement and environmental compliance' - ANU). The wide range of topics covered by 48 parallel paper sessions offered the chance to gain insight into the current research activities in environmental and resource economics in general and in environmental valuation in particular. The WCERE was a great opportunity to meet leading economists from around the world, discuss ideas and receive feedback on your own research.

Paul Mwebaze, ANU

As part of the Hub project 'Values of Biological Collections', I travelled to the WCERE2010 with two objectives: (1) to look for new methods which could be applied to the valuation of Australia's biological collections, (2) to present a contributed paper. Overall, I enjoyed the experience in Montréal. I attended about 7 sessions on environmental valuation methodologies. I was also the first presenter at the special session on 'Environmental Issues of Small Island Developing States (SIDS)', Tuesday, June 29, 2010. The title of my paper was Economic valuation of the influence of invasive alien species on the economy of the Seychelles islands. The presentation was well received, with good comments from Eric Strobl (the discussant from Ecole Polytechnique) and other participants. The main issues revolved around the price elasticity of tourists, the magnitude of the cost-benefit ratio and valuing IAS impacts through benefits transfer.

A paper from this work has been published in *Ecological Economics. Environment and Development Economics* is also planning to publish a special issue on 'Small Island Developing States', with guest editors Sonja S. Teelucksingh, Paulo A.L.D. Nunes and Charles Perrings. I have been invited to submit my paper on IAS in the Seychelles for this special issue.

Sonia Akter, ANU

I presented a paper titled 'Testing construct validity of verbal versus numerical measures of preference uncertainty in contingent valuation'. The paper was included in a special session addressing approaches to mitigating hypothetical bias in stated preference techniques. The session was organised and chaired by Patricia A. Champ from the US Forest Service.



Paul Mwebaze and colleagues from Cameroun at the Conference Dinner

To view the Congress papers please go to :
<http://www.webmeets.com/WCERE/2010/Prog/>

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Financial support is available for non-Hub presenters at the event. Please take a look at the Symposium web-site for details http://www.crawford.anu.edu.au/research_units/eeerh/workshops/network_symposium/

Jeff Bennett



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Balancing the water account for the Murray-Darling Basin

by Lisa Lee (Post-doctoral Fellow, UNSW)

The question of how to ensure and maintain sustainable water use in the Murray-Darling Basin has been a topic of on-going discussion. One confounding factor relates to the quality of the water data that are available. This is important for understanding the actual water balance and ensuring a sustainable cap on extractions, which takes into account of the interconnectivity between surface and groundwater systems as well as water quality effects .

As water data collection is costly and time-consuming, it is useful to have an alternative – or supplementary – system of auditing that can ensure the accuracy of the data collected at low cost. For this reason, Lisa worked with Professor Kevin Fox of the School of Economics and Centre for Applied Economic Research at the University of New South Wales in adapting an innovative index number methodology in the context of natural resources to fill this void. The index number method identifies outliers in a group of observations. The original application was for productivity analysis amongst firms with multiple inputs and outputs, a context which translates quite naturally into a variety of environmental management contexts. Its application can identify operators which exhibit unusual production behaviour (an unusual mix of inputs for an unusual level of outputs), and hence identify data errors or potential deliberate data misreporting.

The first application of this method in an environmental context was on Icelandic fisheries data, with the objective to observe compliance amongst a group of fishers using self-reported data of catch levels and effort. The index assigned dissimilarity scores for fishers relative to its peers, in terms of the size (scale) of operation or combination (mix) of inputs. The same technique was then carried over to a data management context, which allows for identifying farm observations which may, for example, be unusual due to their size, output or input mix (including water use) relative to other farms in the same industry facing the same seasonal conditions, or measurement error.

In collaboration with the Australian Bureau of Agricultural and Resource Economics – Bureau of Rural Sciences, a data set on water use at the farm level was used as a test trial of the outlier-detection method for part of the irrigation industry in the Murray Darling Basin. It is envisaged that this data set can be used to make inferences about the population of irrigators (at a regional and basin level), which is potentially useful in examining natural resource policy options. The methodology can assist in detecting outliers in the data that may not otherwise have been found and which have biased interpretation of the data.

This collaborative on-going work has the potential to improve the quality of agricultural data and our understanding of resource use in the Murray-Darling Basin, which is fundamental for better management of natural resources.

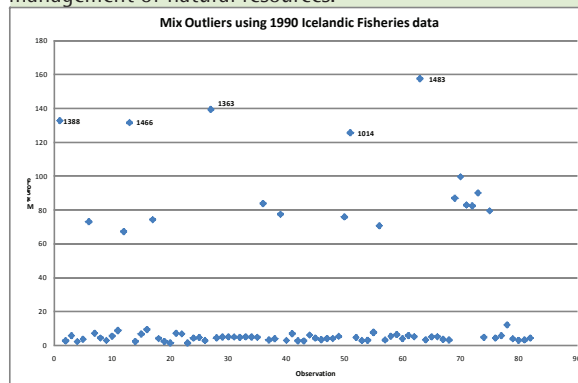


Figure 1: Example of results of mix outlier from Icelandic fisheries data

Chinese Exchange Student Joins UNSW Team



Na Li will visit from China

Na Li, a Phd student from Hohai University, will be joining the UNSW environmental economics team for six months from September 2010, working with Professor Kevin Fox and post-doctoral fellow Dr Lisa Lee on water management issues. Her research area is mainly focussed on inter-basin water transfer projects. She gained practical research experience while in charge of two programs while undertaking studies for her Master of Business Administration degree, and participated in the project Water Price Measurement and Compensation Mechanism in Jiangsu Intake Area, drawing up special reports. She was attracted to undertaking studies at UNSW due to the research program being supported by the Environmental Economics Research Hub.

Valuing Ecosystem Services to Agriculture

Emma Aisbett, ANU



Ecosystems are important to Agricultural production

Over the last decade there has been a very large amount of policy-focussed research related to maintaining and improving the delivery of ecosystem services from agriculture. In contrast, the value of ecosystem services to agricultural production has received very little attention.

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Environmental Economics Research Hub

Valuing Ecosystem Services to Agriculture

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The aim of this project is to assess the need for and scope possible approaches to valuing the contribution of ecosystem services to agriculture. This preliminary project was undertaken at the request of DEWHA and is funded through the Hub's 'Emerging Research Issues' budget.

The first of the project's reports identifies and explains the role of ecosystem services in agricultural production. Based on economic theory the report identifies ecosystem service flows most relevant to design of efficient policy regarding agriculture. This analysis is combined with a review of the existing valuation literature on the topic of ecosystem services and agriculture in order to identify priorities for future research. The report concludes that an increased emphasis on the value of ecosystem service flows to agricultural production would be valuable to both policy makers and land managers.

The findings of the first report motivated the use of project funds to commission Marit Kragt to produce an overview of methodologies for valuing the contribution of ecosystem services to agricultural production, and to support work by Michael Ward and Jared Dent which uses land values to estimate the cost of salinity to agricultural producers in Western Australia.

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CERF Conference held in Canberra in May



Prof John Rolfe, CQU, Prof Michael Burton, UWA, Professor Tor Hundloe and Amy White, Griffith University at the CERF Conference.

A number of Hub Researchers attended the Commonwealth Environment Research Facilities (CERF) Conference held at Old Parliament House in Canberra in May, presenting research ranging from addressing climate change, preservation of the Great Barrier Reef and converting bananas into biofuel.



Research Fellow Frank Jotzo from ANU presenting his policy paper *Adjusting Australia's Climate Target*, available on the Hub website



Tor Hundloe, Griffith University, discussing the background to his project, *Socio-economics of on-farm renewable energy*

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