

# Julia Berazneva

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## Research and Teaching Fields

Primary: Development Economics, Environmental Economics, Resource Economics.

Secondary: Applied Microeconomics, Applied Econometrics, Agricultural Economics.

## Education

Ph.D. Candidate, Charles H. Dyson School of Applied Economics and Management, **Cornell University**, Ithaca, NY, USA, May 2015 (expected).

Dissertation: *Reconciling Food, Energy and Environmental Outcomes: Three Essays on the Economics of Biomass Management in Western Kenya*. Committee: David R. Lee (chair), Jon Conrad, George Jakubson, Frank Place.

M.Sc., Development Studies, **School of Oriental and African Studies, University of London**, London, UK, 2006.

B.A., Economics (high honors), **Mount Holyoke College**, South Hadley, MA, USA, 2004.

International Baccalaureate, **United World College of the Adriatic**, Duino, Italy, 2000.

## Job Market Paper

**‘Agricultural Productivity and Soil Carbon Dynamics: a Bioeconomic Model’** (with Jon Conrad, David Güereña, and Johannes Lehmann)

We develop a dynamic bioeconomic model of agricultural households to investigate the likely effects of changes in agricultural practices on the natural resource base and on farmer livelihoods. Our theoretical modeling framework extends the traditional agricultural household model to incorporate the dynamic nature of natural resource management and to integrate biophysical processes through soil carbon management. Using an eight-year panel data set from an agronomic “chronosequence” experiment and data from household and market surveys in the western Kenyan highlands, our empirical model combines an econometrically estimated production function and a calibrated soil carbon flow equation in a maximum principle framework. We use the model to determine the optimal management of the farming system over time in terms of the application rates of mineral fertilizer and crop residues, taking into consideration initial resource endowments and prices. The optimal management strategies lead to soil carbon stocks of 20.2-40.2 Mg/ha (in the top 0.1 m) and maize yields of 3.5-4.2 Mg/ha, with discount rates of five to fifteen percent. The optimal application rates of mineral fertilizer and organic resources are, however, considerable — far higher than the current practices of western Kenyan farmers. They also depend on the initial condition of soil fertility, with more depleted soils requiring higher application rates at the outset. The equilibrium value of soil carbon is high and ranges between 108 and 148 US\$/Mg, depending on the discount rate used, which highlights the considerable local private benefits of soil carbon sequestration. Annual soil carbon sequestration rates of 630 and 117 kg/ha can be achieved on depleted and medium-fertility soils, respectively.

## Publications

Berazneva, Julia. (2014). 'Audio Recording of Household Interviews to Ensure Data Quality', *Journal of International Development* 26(2), 290-296.

Berazneva, Julia and Lee, David R. (2013). 'Explaining the African Food Riots of 2007-2008: An Empirical Analysis', *Food Policy* 39, 28-39.

Lee, David R., Berazneva, Julia and Ndulo, Muna. (2011). Africa's Dual Crises: The Food and Financial Crises and Their Effects in Sub-Saharan Africa – Introduction and Overview, *in* David R. Lee and Muna Ndulo, eds, 'The Food and Financial Crises in Sub-Saharan Africa: Origins, Impacts and Policy', CABI, Wallingford, Oxfordshire; Cambridge, MA.

Brodman, Janice and Berazneva, Julia. (2007). 'Transforming Opportunities for Women Entrepreneurs', *Information Technologies & International Development* 4(2), 3-10.

## Work in Progress

Berazneva, Julia, Lee, David R., Place, Frank and Jakubson, George. (2014). 'Allocation and Valuation of Non-marketed Crop Residues in Smallholder Agriculture: the Case of Maize Residues in Western Kenya'. *Submitted*.

'An *Ex Ante* Cost-Benefit Analysis of a Village-Scale Pyrolysis-Biochar System' with Dominic Woolf and David R. Lee.

'Estimating Shadow Costs and Source Substitution for Fuelwood in Western Kenya' with David Murphy and David R. Lee.

'Trees and the Ecosystem Services They Provide: Impacts on Small Farms in Kenya' with David R. Lee.

## Academic Experience

### Teaching Assistant, Cornell University:

AEM 7010 – Applied Microeconomics I (PhD core sequence), Fall 2014 with Prof. Jura Liaukonyte and Prof. Ariel Ortiz-Bobea.

ECON 1120 – Introduction to Macroeconomics, Spring 2010 with Prof. Steve Kyle.

AEM 2500 – Environmental and Resource Economics, Fall 2009 with Prof. Gregory Poe.

**Research Assistant** for Prof. David R. Lee, *Village-Scale Bioenergy and Pyrolysis* Project, Dyson School of Applied Economics and Management, Cornell University, 2010 – 2014.

**Research Fellow** with the World Agroforestry Center (ICRAF), Kisumu and Nairobi, Kenya, August 2011 – December 2012.

Summer Graduate School on Mathematics of Climate Change, National Center for Atmospheric Research, Boulder, CO, July 2010.

## Seminar and Conference Presentations

**2014:** Cornell University (Economics, Dyson School); AAEA Annual Meeting in Minneapolis, MN.

**2013:** Agriculture and Food Security Center, Earth Institute, Columbia University; World Agroforestry Center (ICRAF), Nairobi; AAEA & CAES Joint Annual Meeting in Washington, DC; NAREA Meeting in Ithaca, NY.

**2011:** Center for the Study of African Economies Conference, Oxford University, UK.

## Fellowships, Grants and Awards

Graduate School Research Travel Grant, Cornell University, 2013.

Andrew W. Mellon Student Research Grant, CALS, Cornell University, 2013.

‘Frosty Hill’ International Travel Grant, CALS, Cornell University, 2013.

Luther G. Tweeten Scholarship, Agricultural and Applied Economics Association, 2012.

Richard Bradfield Research Award, CALS, Cornell University, 2011.

Mario Einaudi Center for International Studies Travel Research Grant, Cornell University, 2011.

*Outstanding Graduate Teaching Assistant Award*, College of Life and Agricultural Sciences (CALS), Cornell University, 2010.

Class of 1905 Fellowship, Mount Holyoke College Alumnae Association, 2009.

Open Scholarship, School of Oriental and African Studies, UK, 2005.

Virginia Galbraith Graduate Fellowship in Economics, Mount Holyoke College, 2005.

## Professional Activities

Reviewer for *Food Policy*, *World Development*, *Agricultural and Resource Economics Review*, *Journal of Peace Research*, *Conflict Management and Peace Science*, *European Journal of Development Research*, *Africa Today*.

Member of American Economic Association, Agricultural and Applied Economics Association, Association of Environmental and Resource Economists, Northeast Agricultural and Resource Economics Association.

President of the Applied Economics and Management Graduate Student Association, Dyson School, Cornell University, 2010 – 2013.

## Miscellaneous

Languages: fluent in English, Belarusian, and Russian; working knowledge of Italian, French, Portuguese, Spanish, Swahili, and Latin.

Software: ArcGIS, Stata, Matlab, LaTeX.

## References

**David R. Lee**, International Professor, Dyson School of Applied Economics and Management, Cornell University, Phone: 607.255.7685, E-mail: DRL5@cornell.edu.

**Jon Conrad**, Professor, Dyson School of Applied Economics and Management, Cornell University, Phone: 607.255.7681, E-mail: JMC16@cornell.edu.

**George Jakubson**, Associate Professor of Economics, Department of Economics, Cornell University, ILR School, Phone: 607.255.4546, E-mail: GJ10@cornell.edu.

**Frank Place**, Senior Research Fellow, Policies, Institutions and Markets, International Food Policy Research Institute (IFPRI), Washington, DC, E-mail: F.PLACE@cgiar.org.

**Gregory Poe (teaching)**, Professor, Dyson School of Applied Economics and Management, Cornell University, Phone: 607.255.4707, E-mail: GLP2@cornell.edu.

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