

## Karl M. Rich

Senior Research Fellow

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### SUMMARY

Over 14 years of progressively responsible research and teaching experience in the areas of international development, value chain analysis, animal health economics, and multi-sectoral policy analysis. High level of expertise in the development and construction of quantitative economic models to conduct numerous types of economic analyses. Significant work experience in developing countries, working with and managing multidisciplinary teams of researchers and policymakers. Strong written and oral communication skills, with publications in the *American Journal of Agricultural Economics*, *Food Policy*, *International Food and Agribusiness Management Review*, *Review of Agricultural Economics*, *System Dynamics Review*, and *World Development*.

### EDUCATION

Doctor of Philosophy (Ph.D.), Agricultural Economics, University of Illinois at Urbana-Champaign, May 2005

Master of Science (M.S.), Agricultural Economics, University of Illinois at Urbana-Champaign, Aug. 1996

Bachelor of Arts (A.B.), Economics, University of California, Berkeley, Dec. 1993

### PROFESSIONAL EMPLOYMENT

**Senior Research Fellow**, Norwegian Institute of International Affairs (NUPI), Oslo, Norway, February 2010-present.

**Associate Professor (0.2 FTE)**, Norwegian School of Veterinary Science (NVH), Oslo, Norway, March 2010-present

**Assistant Professor of Economics**, American University in Cairo, Cairo, Egypt, August 2008-December 2009.

**Agricultural Economist**, International Livestock Research Institute (ILRI), Nairobi, Kenya, June 2006-August 2008

**Postdoctoral Fellow**, International Food Policy Research Institute (IFPRI), New Delhi, India, May 2005-June 2006.

**Research Assistant (0.5 FTE)**, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, Urbana, IL, Jan. 2002-Aug. 2004, Jan.-May 2005.

**International Trade Analyst**, U.S. International Trade Commission, Washington, DC, Nov. 1998-Jan. 2002.

**Sr. Research Assistant**, International Food Policy Research Institute, Washington, DC, Jun. 1997-Nov. 1998.

### RESEARCH COLLABORATIONS, CONSULTANCIES, AND OTHER SHORT-TERM EMPLOYMENT

- *International Food Policy Research Institute*: Biofuels in India; Economics of Rinderpest control:
- *International Livestock Research Institute*: Impact of avian influenza on agricultural value chains; Economics of FMD control in India
- *Department for International Development (DFID, UK)*: Economics of commodity-based trade for livestock products
- *Asian Development Bank*: Assessment of value chains for rice and cassava in Viet Nam; Case studies of successful small business development (Making Markets Work Better for the Poor project)
- *World Bank*: Assessment of costs of compliance with disease control measures in South America; Analysis of rice value chains in Viet Nam and Cambodia
- *International Fund for Agricultural Development (IFAD)*: Development of agricultural strategy document for Ministry of Agriculture, Livestock, and Fisheries in Madagascar.

### SELECTED PUBLICATIONS

1. Rich, K.M., Perry, B.D., forthcoming, 2011. Controlling Animal Disease in Africa. Chapter in D. Zilberman, J. Otte, D. Roland-Holst, D. Pfeiffer, eds., *Human and Environmental Health and the Future of Animal Agriculture in Developing Countries*.
2. Rich, K.M., Perry, B.D., 2011. Whither Commodity-Based Trade. *Development Policy Review* 29(3), 331-356.

3. Rich, K.M., Perry, B.D. 2011. The economic and poverty impacts of animal diseases in developing countries: new roles, new demands for economics and epidemiology, *Preventive Veterinary Medicine* 101(3-4), 133-147.
4. Rich, K.M., Ross, R.B., Baker, D.A., Negassa, A., 2011. Quantifying value chain analysis in the context of livestock systems in developing countries. *Food Policy* 36(2), 214-222.
5. McDermott, J., Rich, K., Gebremedhin, B., Barrow, H. 2010. Value chains and innovation. Chapter 9 in F. Swanepoel, A. Stroebel, and S. Moyo, eds. *The Role of Livestock in Developing Communities* (Bloemfontein, South Africa: The Technical Centre for Agricultural and Rural Cooperation), pp. 151-170.
6. Kaitibie, S., Omore, A., Rich, K.M., Kristjanson, P., 2010. Kenyan Dairy Policy Change: Influence Pathways and Economic Impacts, *World Development* 38(10), 1494-1505.
7. Roeder, P., Rich, K.M., 2010. The global effort to eradicate rinderpest. Chapter 15 in D.J. Spielman and R. Pandya-Lorch, Eds., *Proven Successes in Agricultural Development: A Technical Compendium to Millions Fed*. (Washington, DC: International Food Policy Research Institute), pp. 407-436.
8. Kumar, P., Shinoj, P., Raju, S.S., Kumar, A., Rich, K.M., Msangi, S., 2010. Factor Demand, Output Supply Elasticities and Supply Projections for Major Crops of India. *Agricultural Economics Research Review* 23, 1-14.
9. Rich, K.M., Wanyioke, F., 2010. An assessment of the regional and national socio-economic impacts of the 2007 Rift Valley Fever outbreak in Kenya. *American Journal of Tropical Medicine and Hygiene* 83 (Suppl 2), 52-57.
10. Rich, K.M., 2009. What can Africa contribute to global meat demand: Opportunities and constraints. *Outlook on Agriculture* 38 (3), 223-233.
11. Rich, K.M., Perry, B.D., Kaitibie, S., 2009. Commodity-based trade and market access for developing country livestock products: the case of beef exports from Ethiopia, *International Food and Agribusiness Management Review* 12 (3), 1-22.
12. Narrod, C.A., Roy, D., Okello, J., Avendaño, B., Rich, K.M., Thorat, A., 2009. The role of public-private partnerships and collective action in ensuring smallholder participation in high value fruit and vegetable supply chains, *Food Policy* 34, 8-15.
13. Rich, K.M., 2008. An Interregional System Dynamics Model of Animal Disease Control: Applications to Foot and Mouth Disease in the Southern Cone of South America, *System Dynamics Review* 24 (1), 67-96.
14. Winter-Nelson, A., Rich, K.M., 2008. Mad Cows and Sick Birds: Financing International Responses to Animal Disease in Developing Countries, *Development Policy Review* 26 (2), 211-226.
15. Perry, B.D., Rich, K.M., 2007. The poverty impacts of foot and mouth disease and the poverty reduction implications of its control, *Veterinary Record* 160, 238-241.
16. Rich, K.M., Winter-Nelson, A., 2007. An Integrated Epidemiological-Economic Analysis of Foot and Mouth Disease: Applications to the Southern Cone of South America. *American Journal of Agricultural Economics* 89 (3): 682-697.
17. Rich, K.M., Miller, G.Y., Winter-Nelson, A., 2005. A Review of Economic Tools for Assessment of Animal Disease Outbreaks, *Revue Scientifique et Technique de l'Office International des Epizooties* 24(3), 833-846.
18. Rich, K.M., Winter-Nelson, A., Brozovic, N., 2005. Regional Externalities and Spatial Interactions with Heterogeneous Incentives and Fixed Boundaries: Applications to Foot and Mouth Disease Control in South America, *Review of Agricultural Economics* 27(3), 456-464.

19. Rich, K.M., Winter-Nelson, A., Brozovic, N., 2005. Regionalization and foot-and-mouth disease control in South America: lessons from spatial models of coordination and interactions, *Quarterly Review of Economics and Finance* 45 (2-3), 526-540.
20. Rich, K.M., Winter-Nelson, A., Miller, G.Y., 2005. Enhancing Economic Models for Analysis of Animal Disease, *Revue Scientifique et Technique de l'Office International des Epizooties* 24 (3), 847-856.
21. Rich, K.M., 2004. Animal Diseases and the Cost of Compliance with International Standards and Export Markets: The Experience of Foot-and-Mouth Disease in the Southern Cone. Agriculture and Rural Development Discussion Paper, Washington, DC: The World Bank.
22. U.S. International Trade Commission (2001). *Processed Foods and Beverages: A Description of Tariff and Non-tariff Barriers for Major Products and their Impact on Trade*, Inv. No. 332-421. USITC Publication 3455, Washington, D.C.: U.S. International Trade Commission. (Project leader).
23. Babula, R.A., Rich, K., 2001. An Econometric Analysis of Quarterly Market Relationships Driving the U.S. Durum and Pasta Markets and their Interactions. *Journal of Food Distribution Research* 32 (July): 1-19.
24. Goletti, F., Rich, K., Wheatley, C., 2001. The Cassava Starch Industry in Viet Nam: Can Small Firms Survive and Prosper? *International Food and Agribusiness Management Review* 2 (3/4): 345-357.
25. Rich, K.M., Winter-Nelson, A., Nelson, G.C., 1997. Political Feasibility of Structural Adjustment in Africa: An Application of SAM Mixed Multipliers. *World Development* 25 (12), 2105-2114.

#### **PROPOSAL DEVELOPMENT AND FUNDRAISING EXPERIENCE**

“Sustainable disease control strategies in salmon farming; decision support integrating economic, environmental and social dimensions.” Project submitted to the Norwegian Research Council by a project consortium led by SINTEF (NOK 13.6 million, member of proposal development team). Project accepted by the Norwegian Research Council, November 2010. NUPI share amounts to NOK 1.06 million over 2011-2013.

Collaborative partnership with Scottish Agricultural College and NUPI on the economics of animal health surveillance through its EPIC program, Feb. 2010-Mar. 2012, GBP 80000.

Research partnership with International Livestock Research Institute and NUPI on animal health economics and value chain analysis, March 2010-present (US\$80000 for 2011, tentatively US\$60000 for 2012).

Research contract with the Food and Agriculture Organization of the United Nations and NUPI to examine the economic benefits of rinderpest eradication, August 2010-July 2011 (US\$45000).

“Delivery and testing of a methodological package for a value-added information and management system (VAIMS) for studying livestock marketing chains and enhancing dialogue for action,” Concept note developed in collaboration between ILRI, the University of the Free State, and Stellenbosch University (€130000, co-primary investigator). Proposal accepted by SADC, March 2008.

“Learning the Lessons of Rift Valley Fever: Improved Detection and Mitigation of Outbreaks,” Proposal submitted to the Office of Foreign Disaster Assistance, U.S. Agency for International Development (USAID) in March 2007 (US\$104328, member of proposal development team). Proposal accepted by USAID.

“Avian Influenza in East and West Africa: Modeling the Spatial Spread, Evaluating the Cost-Effectiveness of Alternative Control Strategies, and Assessing the Impact on the Poor,” Proposal submitted by the International Food Policy Research Institute and International Livestock Research Institute in Oct. 2006 to the Department for International Development (UK) (US\$4.1 million, member of proposal development team). Proposal accepted by DFID.

“Enabling livestock product exports from Ethiopia: understanding the costs, sustainability, and poverty reduction implications of SPS compliance,” Proposal submitted to Texas A&M in Oct. 2006 as a subcontractor to the USAID project *Ethiopia Sanitary & Phytosanitary Standards and Livestock & Meat Marketing Program (SPS-LMM)* (US\$85200, member of proposal development team). Proposal accepted by Texas A&M.

“Promoting Pro-Poor Innovations to Raise the Competitiveness of Smallholders in Livestock Value Chains in East Africa,” Concept note submitted in Aug. 2006 to the Gates Foundation Request for Proposals GD-AG-01. Proposal was long-listed (one of 47 selected out of 1,315 submitted) for full proposal development; final proposal submitted February 2007 (US\$6.8 million, member of proposal development team). Proposal revised and accepted by Gates under the leadership of Heifer Project International, December 2007.

## **COURSES TAUGHT**

*Undergraduate level courses, American University in Cairo 2008-2009:*

Introduction to Microeconomics, Introduction to Macroeconomics, Introduction to Mathematical Economics, Comparative Economic Systems, Introduction to Agricultural Economics, Intermediate Microeconomic Theory

*Graduate and professional courses*

“Economics of animal health and surveillance,” Oslo, Norway, 1-3 November 2010. Intensive three-day course for the Nordic Society of Veterinary Epidemiology on economic tools and methods used in animal health impact assessments.

Graduate course at Mohyla Academy, Kiev, Ukraine: “Trade, regional integration and development,” 24-28 May 2010, 16-18 February 2011. Course focused on the economics and politics behind international trade and regional integration, including implications on international development.

“ICAR-ILRI Training Course on “Economic Models for Livestock Policy Analysis: Applications to Animal Disease and International Trade,” New Delhi, India, 9-13 June 2008. Intensive five-day course covered (i) theory of multi-market, partial equilibrium models and their implementation in GAMS; (ii) system dynamics models and STELLA-based programming; and (iii) applications of models to livestock markets, trade, and animal health interventions (Course repeated in context of biofuels, 27-31 July 2009).

“South Asia Initiative Training Workshop on Quantitative Methods for Policy Analysis,” Colombo, Sri Lanka, July 25-29, 2005. Intensive four-day course covering theory of multi-market models and their implementation in GAMS (Course repeated at the Institute of Social and Economic Change (ISEC), Bangalore, India, July 18-22, 2011).

## **LANGUAGES**

English (native speaker), French (fair), Spanish (basic), Norwegian (basic)

## **PROFESSIONAL SERVICE**

- Associate Editor for BMC Veterinary Research, Aug. 2011-present.
- Coordinator and lead writer for the economics component of three concept notes for the Global Roadmap for Improved Control of FMD in Endemic Settings, Jan.-May 2007 (work included an honorarium for service).
- Invited moderator for AAEA conference session “Disease Control, World Trade, and Food Stamp Programs,” Portland, Oregon, 31 July 2007.
- Served as a presentation abstract reviewer for the 2008 and 2009 AAEA annual meetings, 2008 EAAE annual meetings, and 2009 IAAE annual meetings
- Served as a Development Marketplace Assessor for the World Bank, Apr-May 2008
- Served as a discussion facilitator for the World Bank e-learning course, “Standards and Trade: Challenges and Opportunities for Developing Country Agro-Food Trade,” June 2008.
- Theme coordinator (animal health economics) for the 12<sup>th</sup> International Veterinary Epidemiology and Economics Symposium, Durban, South Africa, 10-14 August 2009.
- Invited reviewer for CAB International book *Vegetable Production and Marketing in Africa: Socio-Economic Research*, Nov. 2009 (work included an honorarium for service)

- Served as a reviewer for the *African Journal of Agricultural Research*, *Agricultural Economics*, *Agricultural Systems*, *American Journal of Agricultural Economics*, *Epidemiology and Infection*, *European Review of Agricultural Economics*, *Food Policy*, *International Food and Agribusiness Management Review*, *Pastoralism*, and *World Development*

### **COMPUTER EXPERIENCE**

GAMS, STELLA, STATA, SPSS, Mathematica, ArcGIS, GRASS, LaTeX, Microsoft Office (Word, Excel, PowerPoint)

### **SELECTED HONORS AND AWARDS**

- Best Paper Recipient, International Agribusiness Management Association Meetings, Budapest, Hungary, June 2009
- Exceeds Expectations Performance Rating (2007, 2008), International Livestock Research Institute
- Outstanding Ph.D. dissertation, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, 2005.
- Outstanding Graduate Student, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, 2005.
- Earl Swanson Dissertation Scholar, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, 2004-2005 (prize included monetary award and specialized office space).
- Passed both 2<sup>nd</sup> Year Paper Requirement (2004) and Core Examination in Microeconomic Theory (2003) with Distinction, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign.
- Outstanding (2000, 2001) and Exceeds Fully Successful (1999) Performance Ratings, USITC.