

NAREA Awards

Outstanding Master's Thesis Award

Efficiency and Equity in Water Allocation: An Optimization Model of the El Angel Watershed, Carchi, Ecuador

Elizabeth Madeline Evans

Cornell University

Advisor: David R. Lee

The objective of this thesis is to address the problems of inefficiency and inequity in water allocation in the El Angel watershed, located in Ecuador's Sierra region. Water is captured in a high-altitude region of the watershed and distributed downstream to producers in four elevation-defined zones via a system of canals. Upstream and downstream producers face radically different conditions with respect to climate and terrain.

A mathematical programming model was created to study the consequences of addressing chronic water scarcity problems in the watershed by shifting water resources among the four zones. The model captures the nature of water use by humans, crops, and dual-purpose cattle. Its objective function maximizes producer welfare as measured by aggregate gross margin, subject to limited supplies of land, labor, and water.

Five water allocation scenarios are evaluated with respect to efficiency in land and water use and equity in income distribution.

Results reveal that although water is the primary constrained resource downstream, in the upstream zones, land is far more scarce. The current distribution of water rights does not consider these differences, and therefore is neither efficient nor equitable. Improvements in efficiency (resource use) and equity (income distribution) are associated with (1) a shift of water to the lower zone, and (2) the use of lower levels of irrigation intensity upstream. Furthermore, the scenarios resulting in the most efficient use of resources also bring the greatest degree of equity in income distribution, indicating that these may be complementary, not conflicting, goals.

Master's Thesis Award of Merit

The Risk Reduction Effects of U.S. Direct Government Payments on Production and Welfare

Kathleen Rory Mullen

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Advisor: Harry de Gorter

Direct government payments to U.S. major field crop farmers totaled \$55 billion during 1998–2000. The outlays from “decoupled” production flexibility contracts, “fully coupled” loan deficiency payments, and “partially coupled” marketing loss assistance payments account for 81% of the total payments.

This thesis focuses on quantifying the increase in production and producer welfare due to the risk reduction (wealth and insurance) effects of these three payment types, and isolating these effects from the traditional subsidy effect. Coupled and decoupled subsidies generate the wealth effect. The insurance and subsidy effects

lead to increased production only with coupled support where producers are at least partially compensated for low prices.

An expected utility maximization framework consistent with decreasing absolute risk aversion is developed to analyze the risk reduction effects under output price uncertainty. The production and producer welfare impacts are assessed through modeling responses to changes in expectations (price, variance, and income) due to each policy, given a calibrated coefficient of relative risk aversion.

An empirical analysis of the Kansas wheat sector shows decoupled payments have significant impacts on production decisions through the wealth effect. The increase in production and producer welfare due to the insurance effect of fully coupled payments is greater than the increase due to the subsidy effect. The impacts of partially coupled payments lie between those of decoupled and coupled payments. For the total package of policies, the increase in production and producer welfare from the risk reduction effects is greater than the increase from the subsidy effect.

Master's Thesis Award of Merit

Factors Affecting Consumer Valuation of Environmentally Labeled Forest Products

Kelly Ann O'Brien

University of Maine

Advisor: Mario F. Teisl

The recognition and acknowledgment of how personal purchasing decisions affect the environment may increase the desire to buy products advertised as "environmentally friendly." Effective and credible advertising and marketing of product deemed ecologically sound, as well as the specific environmental qualities embodied by such products, presumably weigh on the effectiveness of environmentally conscious shopping. Consumers are unable to fully utilize purchase power as a means of protecting the environment if they are unaware such options exist. The public's apparent willingness to use its purchasing power as a means to protect the environment provides an opportunity for manufacturers and policy makers to benefit.

Using a nationally representative sample of the U.S. population surveyed during the summer of 2000, this thesis explores how the disclosure of different environmental attributes impacts consumer choices of environmentally labeled wood products. The analysis is differentiated so that consumer choices and values are analyzed with respect to differences in (1) the amount of information the individual receives regarding the environmental labeling criteria, (2) the organization monitoring compliance with environmental labeling criteria, and (3) individual characteristics (i.e., demographics, such as age and education, as well as measures of exposure to the forest resource through work and play). Specifically examined is whether exposure to the forest environment through employment, forestland ownership, and leisure pursuits, such as

forest-based recreation participation, contributes to pro-environmental purchasing behavior and enhanced values for environmentally preferred forest management attributes.

It was found that the environmental attributes of an environmentally labeled wood product are significant to the purchase decision. In addition to the level of information provided on environmental labels themselves, supplementary advertising campaigns and marketing initiatives may enhance understanding of a product's environmental friendliness. Further, because environmental management claims are not readily verifiable by consumers, the purchase decision becomes largely one of faith, to which the credibility of the certifying organization is found to be an important contributing factor.

The analysis offers important information for policy makers and firms. An examination of the level of environmental information provided and its influence on consumer choices of environmentally labeled wood products yields the information necessary to maximize a firm's marketing effectiveness. The relationship between valuation and levels of environmental attributes is significant to both policy makers and firms in that it provides guidelines for possible certification criteria. Varying the certifying agencies responsible for the environmental labeling of wood products provides information regarding the perceived credibility of particular agencies and the marketability of products certified by such agencies.

Distinguished Member Awards

This award recognizes members who have made continuous and outstanding contributions to the Association, the region, and the profession. The award recognizes members for significant recent professional achievement in the context of an overall meritorious record. Recipients must be members in good standing and receive nomination from three other members. A recipient can receive the award more than once, based on recent achievements.

Kevin J. Boyle

Kevin Boyle is currently Libra Professor of Environmental Economics in the Department of Resource Economics and Policy at the University of Maine. He is a Cooperating Professor of Wildlife Ecology, and serves on the faculty for the interdisciplinary Ecology and Environmental Science and Conservation Biology programs at the university. Kevin is also Adjunct Professor, Department of Economics, Andrew Young School of Policy Studies, Georgia State University. He received a B.S. in Economics from the University of Maine, an M.S. in Agricultural and Resource Economics from Oregon State University, and a Ph.D. in Agricultural Economics from the University of Wisconsin.

Kevin has conducted research in the area of non-market valuation, with particular emphasis on stated-preference studies and hedonic property-value studies. The applications of his research include water quality, risk assessment, land use, and wildlife management.

He has authored more than 150 research publications, including over 50 peer-reviewed journal articles and three books. Kevin teaches courses in resource and environmental economics, research methods, and environmental policy.

Kevin has been a member of NAREA since 1987, and has made continuous and substantial contributions to the Association. He has served as a member of the Executive Committee and was President of the Association in 1999. In 2001, Kevin served as Chair of the Nominating Committee for the first offering of the NAREA Award for Outstanding Public Service Through Economics, contributing considerable time and expertise in organizing this effort and publicizing the award.

Kevin has published in the *Agricultural and Resource Economics Review*, the journal of the NAREA, and he and his students consistently contribute research papers to the annual NAREA meetings.

Harry M. Kaiser

Harry M. Kaiser is currently a professor and associate chair of Applied Economics in the Department of Applied Economics and Management, Cornell University. He received a B.A. in Economics from the University of Wisconsin-Eau Claire, and an M.S. and Ph.D. in Agricultural and Applied Economics from the University of Minnesota.

Harry has taught courses in price analysis, agricultural policy, marketing, mathematical programming, and public finance. In addition to Cornell, he has taught at the University of Minnesota and the University of Agriculture in Nitra, Slovakia. His research interests are in the areas of marketing, policy, quantitative methods, and price analysis. Harry's more recent research has focused on the economics of advertising. He has written over 60 journal articles, nine books or book chapters, and over 200 research bulletins in these areas.

Harry served as editor of the *Agricultural and Resource Economics Review*, the journal of the NAREA,

for the years 1999–2001. During his term as editor, he ensured the quality and relevancy of the journal, which continually improved. Article submissions and acceptances increased from outside the region, while the journal continued to serve the needs and interests of the Association. Harry also reduced the length of the review process considerably in his tenure as editor, which made the journal an even more attractive place to submit manuscripts from potential authors.

Harry's support for the journal commenced well before he became editor. He had published nine articles in the journal, and his article co-authored with Liu, Forker, and Mount was recognized as the journal article of the year in 1990. He served on the Editorial Board (1992–94), and reviewed numerous articles. Harry also served on the Outstanding M.S. Thesis Committee (1992–94), and was chair in 1994. He was a member of the Selected Paper Committee for 1991–93. He has been an active member of the Association for 17 years.

NAREA Award for Outstanding Public Service Through Economics

This award was created to recognize and encourage contributions to the general public welfare. The intent is to recognize that agricultural, environmental, consumer, resource, or community development economics can be applied to solve important problems affecting the quality of life of the general public, and that such contributions may come outside the traditional, sometimes narrowly defined, contributions to research, teaching, or extension. The award may be given to anyone, including noneconomists and nonmembers of NAREA.

Bruce L. Gardner

Bruce L. Gardner is Distinguished University Professor and Chair, Department of Agricultural and Resource Economics, University of Maryland, where he has been a member of the faculty since 1981, except during 1989–1992, when he served as Assistant Secretary for Economics at the U.S. Department of Agriculture. Prior to 1981, Gardner was a Senior Staff Economist at the Council of Economic Advisers, Washington, DC, and on the faculties of Texas A&M University and North Carolina State University. He received his Ph.D. from the University of Chicago, and his B.S. from the University of Illinois.

Gardner has published four books and several influential articles, principally on agricultural policy analysis and issues. His “Commodity Options for Agriculture” contributed to the resurgence of interest in the subject in the early 1980s. His book, *Optimal Stockpiling of Grain*, and applications in “Consequences of USDA’s Farmer-Owned Reserve Program” contributed to the debate on public commodity stockpiling and its interaction with private speculative storage. Gardner’s paper, “Efficient Redistribution

through Commodity Markets,” engendered a substantial literature analyzing the efficiency of government intervention in agricultural markets. His “Changing Economic Perspectives on the Farm Problem” has been widely referenced on broader policy issues. Gardner’s publications have received notable awards including outstanding journal article (1976), quality of research discovery (1980), and distinguished policy contribution (1994) from the American Agricultural Economics Association. He was elected a Fellow of the Association in 1989.

Gardner has consulted widely on agricultural policy with U.S. and foreign governments and international organizations. He has testified many times before the U.S. Senate and House Agriculture Committees, as well as Budget and Appropriations Subcommittees. He has served on Dispute Resolution Panels under the U.S./Canada Free Trade and NAFTA Agreements. Since 1992, he has traveled to Albania, Bulgaria, Egypt, France, Hungary, India, Latvia, Moldova, Mexico, Poland, Russia, Sweden, and Ukraine on various projects for national governments and the World Bank.

Journal Article of the Year for 2001

Control of Nonpoint Source Pollution Through Voluntary Incentive-Based Policies: An Application to Nitrate Contamination in New York

(Vol. 30, No. 2, October 2001: 127–138)

Jeffrey M. Peterson and Richard N. Boisvert

A voluntary program is developed to achieve environmental goals through the self-interested choices of farmers under environmental risk and asymmetric information. Farmers behave to maximize expected net returns, and environmental quality standards are formulated through chance constraints. Because the government may not know each farmer’s soil type,

policy options must be self-selecting. The model is applied empirically to nitrate leaching and runoff from corn production in three New York regions. Asymmetric information between producers and the government would impose additional cost burdens on society, but these costs are modest in the context of other farm programs.

Achieving Efficiency And Equity In Irrigation Management: An Optimization Model Of The El Angel Watershed, Carchi, Ecuador. The objective of this paper is to address the problems of inefficiency and inequity in water allocation in the El Angel watershed, located in Ecuador's Sierra region. Water is captured in aâ€¦ Expand. 40. Water resources constraint force on urbanization in water deficient regions: A case study of the Hexi Corridor, arid area of NW China. *Ecological Economics* In Press, Corrected Proof, Available online 17 August 2006. Google Scholar. Evans, M.E., Lee, D.R., Boisvert, R.N., et al. (2003). Achieving efficiency and equity in irrigation management: An optimization model of the El angel watershed, Carchi, Ecuador. *Agricultural Systems* 77, 1â€“22. CrossRef Google Scholar. Heerink, N., Kuyvenhoven, A. and Van Wijk, M.S. (2001). The Water Allocation Model Equalization or in Indonesian it is called â€œModel Ekualisasi Alokasi Airâ€ (MEQAA) is proposed. MEQAA modeling system is inspired by the shortage of irrigation water for a quite extended period of time and the complexity of the water allocation system in the Lombok river basin. FCFS is one of the water allocation methods that have long been used and widely practiced for irrigation in Indonesia [20]. 52 watershed utilities (3486 km²) can be categorized as river system structures containing headwork nodes as in Figure 2. Each independent river can consist of one or more nodes of diversion and reservoirs. The rivers have wet and dry hydrological conditions.