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NAREA Awards

Outstanding Master's Thesis Award

Investment in Coffee Planting in Vietnam: A Real Option Analysis and Policy Recommendations

Quoc Viet Luong

Cornell University

Advisor: Loren W. Tauer

In 1991, Vietnam was barely visible in the global coffee market, with a production share of only 1.3 percent of the world's production. Nine years later, Vietnam was the world's second largest coffee producer, holding 13–15 percent of total world production. The substantial coffee supply that Vietnam added to the world market is widely considered to be the main factor leading to extremely low coffee prices in 2001, a crisis which devastated the livelihood of more than 25 million coffee-producing households worldwide, including those in Vietnam. To date, however, no research has been done to better understand and explain why Vietnam's coffee supply responded to the market in such a significant way. A better understanding of Vietnam's coffee supply response, therefore, is of considerable interest to not only the government of Vietnam, but also to the

international coffee community.

This thesis studies the coffee supply response in Vietnam by examining how Vietnamese coffee growers invest and disinvest under price uncertainty and investment irreversibility. The entry and exit decisions of Vietnamese coffee growers are modeled and estimated as real call and put options. The study finds that producers with variable costs of 19 cents per pound and total cost of 29.3 cents per pound would enter coffee production at around 47 cents per pound and exit at approximately 14 cents per pound. Accordingly, given their production costs, most Vietnamese growers appear to be efficient and can compete successfully on the global coffee market. As a result, Vietnam should not attempt the planting reduction strategy recently advocated by an Oxfam-funded study.

Master's Thesis Award of Merit

Incentives and Enrollment in the Conservation Reserve Enhancement Program: An Approach Using Actual Enrollment and Geographic Information Systems (GIS) Data

Jordan Frederick Suter

Cornell University

Gregory Poe

In addressing agricultural non-point source pollution, the U.S. Department of Agriculture spends over half of its \$3 billion conservation budget on

voluntary programs to retire agricultural land. Using the Conservation Reserve Enhancement Program (CREP) as a case study, this thesis fur-

thers the understanding of factors influencing the amount of acreage voluntarily retired by landowners, providing information that would enable policymakers to adjust incentive levels and outreach efforts to retire land in a cost-effective manner.

Whereas past research has relied primarily on hypothetical enrollment decisions in a localized study area, this study utilizes data on actual enrollment rates and incentive levels in six states. The use of Geographic Information Systems (GIS) data also makes a novel contribution by allowing more accurate estimation of eligible acreage and incentive rates in each county, rather than relying exclusively on county averages, as has been done previously.

Using GIS and Census of Agriculture data, a participation model is developed to explain the variation in acreage retired as a function of the amount of eligible land, the level of incentives offered, and average characteristics of agricultural producers in the county.

Econometric results clearly indicate that incentives do positively influence enrollment rates, while the amount of development pressure, irrigated land, and CRP acres already enrolled have a negative effect. Additionally, the use of GIS data is demonstrated to be essential for understanding the factors that influence enrollment. When aggregate level data is used in place of the field-specific GIS data, enrollment rates are not affected by incentives.

Master's Thesis Award of Merit

Environmental Conservation on Agricultural Working Land: Assessing Policy Alternatives Using a Spatially Heterogeneous Land Allocation Model

Kelly M. Cobourn

University of Maine

Advisor: Timothy J. Dalton

Multifunctionality refers to the ability of agricultural systems to produce an array of non-market goods and services in addition to market commodities. This thesis focuses explicitly on the provision of environmental benefits, through reduced soil erosion and fertilizer applications, by agricultural producers. Soil erosion and nutrient contamination from agricultural production are the foremost contributors to ground and surface water degradation in the United States. Reducing their production implies gains in social welfare, but may generate significant private losses to producers. The objective of this analysis is to quantify the trade-off between environmental improvements and producer welfare and to examine the extent to which public policy can influence that trade-off.

To address this objective, a land use allocation model is constructed using slope to reflect terrain

heterogeneity. The model is formulated as a mathematical programming problem by building upon the Takayama and Judge framework, with the objective of maximizing producer welfare subject to an exogenous land endowment and a series of production constraints. The model developed in this thesis differs from previous empirical modes in several substantive ways. First, crop and livestock production activities are explicitly modeled as either separable or nonseparable activities. Doing so gives the model the flexibility to choose the optimal degree of integration between the two. The model also diverges from previous studies by incorporating a common set of variables that affect the economic and environmental aspects of commodity production. Specifically, the spatial allocation of land use practices impacts economic and environmental outcomes via a yield damage function and differentiated rates of soil erosion.

These two aspects are expected to improve the model's predictive ability.

One of the primary benefits of the model is that it can be used to identify the economic factors driving landscape-level production patterns. The analysis demonstrates that the land use allocation is relatively insensitive to changes in commodity prices. Therefore, altering the level of commodity-based income support payments is insufficient to attain environmental improvements. Several hypothetical "green" policy instruments are simulated to estimate the cost to producers of reducing environmental damages. The results indicate that

limiting soil erosion to an environmentally acceptable level with either a regulatory standard or a tax reduces the average return to land by 10 percent. A program of green subsidy payments for less erosive land management practices cannot attain the same standard with less cost to producers. Overall, the inelastic response of land use change to commodity prices indicates that targeting the use of productive inputs, as opposed to commodity outputs, may be a more efficient means of encouraging agricultural producers to provide environmental benefits.

Distinguished Member Award

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 be nominated by three other members. A recipient can receive the award more than once, based on recent achievements.

Stephen Smith

Stephen Smith is a professor of agricultural and regional economics, and head of the Agricultural Economics and Rural Sociology Department in Pennsylvania State University's College of Agricultural Sciences. Dr. Smith was also director of Penn State's Center for Economic and Community Development, and coordinated the Community and Economic Development graduate program.

Dr. Smith received a bachelor's degree in international relations from the University of Pennsylvania in 1967. He served as a Peace Corps volunteer in Bolivia from 1967 to 1969, then went on to earn master's and doctoral degrees in agricultural economics from the University of Wisconsin in 1971 and 1974, respectively. In 1976 and 1977 he served as economic and resource planning analyst for the Wisconsin Office of State Planning and Energy. That was followed by nine years at the University of Idaho, where, in 1981, he received the Outstanding Faculty Award from the Associated Students of the University of Idaho. In 1986 he joined Penn State, assuming teaching and research responsibilities in U.S. and Pennsylvania

rural development and international agricultural development.

Dr. Smith's research encompasses rural and regional economic change, economic development policy, and economic impact analysis, the role of the service sector, business location, and entrepreneurship. He was among the first researchers to examine the role of service industries in rural American communities. He has written or coauthored several book chapters and more than 33 refereed papers and journal articles, and delivered invited lectures at more than 50 national and international conferences.

In 1998 and 1999, Dr. Smith was a Senior Fulbright Scholar at the Institute for Peruvian Studies in Lima, Peru. He also has worked in Spain, as well as in Chile and several other Latin American countries.

Dr. Smith is past president of the Southern Regional Science Association, and is a member of the American Agricultural Economics Association, the Northeastern Agricultural and Resource Economics Association, and the Community Development Society.

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.

Sandra Batie

Sandra Batie is the first holder of the Elton R. Smith Professorship in Food and Agricultural Policy at Michigan State University and currently conducts research on food, agricultural, and environmental policy issues at the state, federal, and international levels. Dr. Batie has been a faculty member at Michigan State University since 1993. Prior to joining MSU, she was a faculty member at Virginia Polytechnic Institute and State University beginning in 1973. Dr. Batie has taken sabbatical leaves with the Conservation Foundation, where she studied and wrote about federal conservation policy, and the National Governors' Association, where she specialized in state policy with respect to rural development and groundwater management. She has actively served on various commissions and boards at the National Academy of Science's Board of Agriculture, the Academy's Center for Central Europe and Eurasia Affairs, and the Office of Technology Assessment. She was a trustee of both Winrock International and the International Rice Research Institute, and is currently chair of the Board of Win-

rock. She is also a member of the Michigan Agricultural Environmental Assurance Program.

Dr. Batie has been very active in both national and regional professional associations. She is past president of the American Agricultural Economics Association as well as the Southern Agricultural Economics Association. She is also a Fellow of the American Agricultural Economics Association.

Dr. Batie specializes in natural resource and environmental economics with particular focus on agro-environmental and conservation policy research interests. Her current research interests include the implementation of agro-environmental water quality standards, corporate environmental management strategies in the agricultural sector, and the influence of agricultural contractual arrangements on producers' financial and environmental performance. Dr. Batie teaches a graduate course in environmental economics and conducts extension programming on food, agricultural, and environmental policies.

Journal Article of the Year for 2004

The Coordination and Design of Point-Nonpoint Trading Programs and Agri-Environmental Policies

(ARER Vol. 33, No. 1, April 2004: 61–78)

Richard D. Horan (Michigan State University), James S. Shortle (Pennsylvania State University), and David G. Abler (Pennsylvania State University)

Agricultural agencies have long offered agri-environmental payments that are inadequate to achieve water quality goals, and many state water quality

agencies are considering point-nonpoint trading to achieve the needed pollution reductions. This analysis considers both targeted and nontargeted

agri-environmental payment schemes, along with a trading program that is not spatially targeted. The degree of improved performance among these policies is found to depend on whether the programs are coordinated or not, whether double-dipping (i.e., when farmers are paid twice—once by each program—to undertake particular pollution control actions) is allowed, and whether the agri-environmental payments are targeted. Under

coordination, efficiency gains occur only with double-dipping, so that both programs jointly influence farmers' marginal decisions. Without coordination, double-dipping may increase or decrease efficiency, depending on how the agri-environmental policy is targeted. Finally, double-dipping may not solely benefit farmers, but can result in a transfer of agricultural subsidies to point sources.