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Book Reviews

DUTCH PERSPECTIVES IN ENVIRONMENTAL ECONOMIC POLICY

Environmental Economic Policy – Dutch Perspectives: Issues of Environmental Economic Policy. W.J.M. Heijman and J.J. Krabbe (Editors). Wageningen Economische Studies, 24. Pudoc, Agricultural University Wageningen, The Netherlands, 1992. Paperback, 236 pp., US\$33.00. ISBN 90-6754-205-9.

This book presents a ‘sampler’ of recent theoretical and empirical research in environmental economics in The Netherlands. The volume was elaborated from papers prepared by staff from Wageningen and other Dutch universities for international conferences in this field in 1990–91. It covers a wide range of topics, perhaps too wide to present a cohesive whole. The book lacks an introductory chapter indicating the rationale for selection of papers and placing them in a broader context of environmental policy in The Netherlands. It nonetheless provides a useful look at some important issues of current environmental policy in Europe, and illustrates economic problems and emerging analytical solutions of interest to a wider audience.

Half the articles concern environmental policy issues in the agricultural sector, an area where Dutch experience is of particular interest as illustrative of problems associated with intensive agriculture. Many articles investigate the use of ‘economic incentives’ to replace or complement the current emphasis on direct regulation – a developing trend in environmental policy in North America as well (Stavins, 1990). Much of the work reported in this book is exploratory, rather than conclusive, and the preliminary findings on policy instruments are quite mixed.

The first article by J.J. Krabbe briefly summarizes changes in Dutch environmental policy aims over the past 20 years. Past policies were intended to prevent environmental damage through regulation. The government now aims for a much more comprehensive, higher cost program to achieve ecological sustainability. Priorities are global climatic stability, preservation of tropical and European forests, recovery of pure water supplies, ecosystem protection, and spatial ordering of local environments. Greater use of new economic methods such as environmental accounting, tradeable emissions permits, and ecotaxes are being explored.

J. van der Straaten and W. Kafkamp argue that problems of pollution in eastern Europe cannot be effectively addressed through the 'polluter pays' principle. Referring to the Coase Theorem on value of negotiations and the concept of 'critical loads', they conclude that it is economically worthwhile (and cheaper) for western Europe to fund purification in Eastern Europe.

J.J. Krabbe discusses theory and criteria for sustainability. The author contrasts the neoclassical bioeconomics approach with Nicholas Georgescu-Roegen's 'new organicism' approach, which broadens the scope of economics to include explicit consideration of institutions and ecological processes, and gives attention to qualitative change. He interprets Karl-Gustav Mäler's sustainability criterion from this perspective.

J.A.C. van Ophem draws from the literature on social psychology and new home economics theory to examine household behavior in separating solid waste. He presents results from research carried out in one Dutch municipality from an experiment on separate collection of solid household waste, and suggests a number of hypotheses about incentives for participation.

J. Jantzen and J.-W. Velthuisen present an empirical simulation model for the Netherlands in which environmental and economic aspects are fully integrated. The HERMES model of the European Community was extended with an environmental satellite and explicit distinction of short and longer term effects. The current policy scenario is compared with one in which environmental and structural measures are used to promote sustainable development. Effects on environmental pollution levels, environmental costs, sectoral economy, consumption, and the macroeconomy are assessed. Macroeconomic effects of a rigorous pollution abatement program are found to be minimal. Environmental effects of price mechanisms, such as a carbon tax to steer economic behavior, appear limited.

Y.K. van Dam reviews theory and experience in use of ecological product certification and environmental product information to encourage environment-friendly production and consumption. The author suggests directions for future research: assessment of consumer wants and needs for environmental product information; consumer information processing; technical studies assessing the relationship between different environmental effects of components within a given product; and indirect effects of the provision of product information.

F.J. Dietz analyzes the choice of policy instruments to reduce eutrophication of surface water, nitrate pollution of groundwater and soil acidification attributable to excessive manure application. He describes the potential advantages of a 'nutrient policy' using economic instruments such as a nutrient surplus levy, rather than the current policy of direct regulation. He explains continued domination of the latter in terms of public choice

theory, such as rentseeking behavior, vested economic interests, and cost-shifting.

G.A.A. Wossink and T.J. de Koyer demonstrate an extension of linear programming optimization models (commonly used in farm economics) to assess the effects of environmental regulations for agriculture. Their LP model, developed in collaboration with crop and soil scientists, reflects the complex interaction of production intensity, environmental quality and farm income. An application assessing levies to reduce biocide use in crop production is presented, and highlights the importance of farmer agroecosystem knowledge.

F. Brouwer and P. Veenendaal use a non-linear net revenue maximization model to estimate the effects of selected policies designed to reduce mineral nitrogen losses in Dutch agriculture 1990–2010. Technical linkages between livestock breeding and crop growth are included, to address effects of manure provision, use and substitution. The authors draw conclusions about the effects of land availability, manure processing capacity, milk quota policies, and changing fertilizer levels on agricultural mineral losses, production and income.

P.B.M. Berentsen and G.W.J. Giesen develop a linear programming model to quantify the consequences of four government policies (two legal requirements and two levies) on labor income and nitrogen losses on dairy farms on sandy soils. The three model farms differ in terms of farming intensity. The authors conclude that the necessary adaptations on the average farm may lead to significant decreases in farm income, and that it is much more expensive to reduce ammonia emission than to achieve the same reduction in nitrogen losses from leaching and runoff.

C.J. Jepma and M. Blom look beyond Europe to explore long-term global trends in tropical forest degradation. IDIOM, a global simulation model, deals explicitly with economic processes resulting in deforestation and logging, although it leaves out critical variables such as farm forestry production, which can be expected to increase in response to economic incentives. The model predicts a global shortage of timber supply and continued high deforestation rates in the absence of drastic policy measures to the contrary. Policy simulations suggest limited effects from controls on international timber trade or establishment of nature reserves. More important effects result from reducing population pressure, creating forest buffer zones and raising agricultural productivity.

The final chapter in the book, by W.J.M. Heijman and P.H.M. v. Mouche, is a theoretical essay which incorporates two extensions of classic business cycle models into resource economics. The first, based on the traditional post-Keynesian multiplier accelerator model, explains the business cycle for resource use through changes in effective demand. The

second, a dynamic microeconomic model based on the traditional cobweb model explains variation in the price levels of resources. Both models are described by second order linear difference equations. Special attention is given to the problem of asymptotic stability in the case of Floquetian coefficients. Relevant policy problems are illustrated.

REFERENCE

Stavins, R., 1990. *Innovative Policies for Sustainable Development in the 1990s: Economic Incentives for Environmental Protection*. Resources for the Future, Washington, DC, USA.

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DEMAND ANALYSIS, ECONOMETRICS, AND POLICY MODELS

Demand Analysis, Econometrics, and Policy Models: Selected Writings by Karl A. Fox. E. Thorbecke, S.R. Johnson and J.K. Sengupta (Editors). Iowa State University Press, IA, USA, 1992. xxxv + 345 pp., US \$49.95. ISBN 0-8138-0324-1.

Karl Fox has compiled an outstanding record for quantity and quality of research output. His career demonstrates his ability both to conceptualize and to quantify relationships of importance to the profession. This volume of selected writings focuses on Fox's work in the areas of demand analysis, econometrics and policy models. Fox's prolific and multifaceted output could easily give rise to a second volume covering his work in urban–regional economics, social system accounts and eco-behavioral science.

Fox has written a 23 page scientific autobiography to open the book. The autobiography covers four segments of his career, including college and graduate education, government service, departmental administration and research on social indicators and related topics. This story should be read by everyone thinking about a research career. It is a fascinating tale, detailing how careers unfold with some events planned, and others resulting from a willingness to grasp unexpected opportunities.

The 16 selections included are grouped into five topic areas: demand analysis for farm and food products; spatial equilibrium models; studies of the inter-action between agriculture and the non-farm economy; econometric models and policies for stabilization and growth; and, the theory of economic policy. The selections cover: (1) factors affecting farm income, farm prices, and food consumption; (2) demand and price structures for major farm and food products; (3) structural analysis and the measurement

of demand for farm products; (4) demand and supply: econometric studies; (5) a spatial equilibrium model of the livestock-feed economy in the United States; (6) spatial price equilibrium and process analysis in the food and agricultural sector; (7) some relationships between agriculture and the general economy; (8) the contribution of farm price support programs to general economic stability; (9) the study of interactions between agriculture and the non-farm economy: local, regional, and national; (10) econometric models of the United States; (11) a sub-model of the agricultural sector; (12) decentralization or regionalization of national economic policies; (13) a review of Henri Theil's economic forecasts and policy; (14) specification of structures and data requirements in policy models; (15) introduction to quantitative economic policy; (16) a policy model of world economic development with special attention to the agricultural sector.

The 16 selections include three excerpts and twelve reprints of whole chapters, sections, articles or reviews. Selection 2 appears to have been written especially for this book. The material in selection 2 focuses on the 13 demand and supply diagrams that Fox developed in 1946 and included in his dissertation and in a technical bulletin published by the U.S. Department of Agriculture. His dissertation received the American Agricultural Economics Award for Outstanding Ph.D. Dissertation in 1953. Selections 1, 5 and 8 won the American Agricultural Economics Association Award for Outstanding Published Research in 1952, 1954 and 1957, respectively.

Each topic area is introduced by one of the editors commenting on the items reprinted in that section. These comments provide a useful guide to the common themes and to the relationship of the reprinted items to the emerging literature at the time the selection was originally published. Fox also provides a brief introduction to each reprinted item. The brief introductions should be read in conjunction with the scientific autobiography. Taken together, they provide important insights for both the selection and the person who wrote it.

Books of selected writings usually have a low utility ranking when I am spending for my library. This book is a clear exception. It brings together some of the best writing by one of our most gifted colleagues. These pieces are an excellent guide to the evolution of the literature. In addition, we glean valuable insights into the person of Karl Fox and find clues for career planning.

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