Abstracts of Organized Symposia

Potential Role of the Service Sector in Rural Economies

Organizer and Moderator: Stephen M. Smith (The Pennsylvania State University)
Speakers: Cathy D. Kassal (The Pennsylvania State University), Frank M. Goode (The Pennsylvania State University), and Shirley L. Porterfield (Economic Research Service, USDA)

The service sector has been proposed as a potential alternative to job losses in traditional agricultural, resource-based, and manufacturing industries. There is debate, however, on the merits, effects, and practical feasibility of this approach. The purpose of this symposium was to present and discuss several issues and supporting evidence related to this debate.

Three issues formed the main focus. (1) Are services simply passive, or do they play more of a causal role in economic growth? Evidence presented at the Northeast communities showed that manufacturing growth depended on the presence of at least a minimum service structure. (2) The second focus looked in more detail at producer services and whether or not they depend on manufacturing growth. Using national county-level data, the evidence was that where producer services did locate or expand in nonmetro counties was not dependent on manufacturing growth, and that location determinants were different for the two industry sectors. (3) The third issue was the effect of growing rural service sectors on incomes. The evidence presented showed that for the more remote rural areas, even low-wage services were advantageous for the aggregate income, although the effect on income distribution remained a question.

Additional discussion with the audience centered on the types of service industries likely to grow in rural areas, and those communities that managed to replace employment lost in other industries with service jobs.

Regional Considerations in Municipal Solid Waste Management in the Northeast United States

Organizer and Moderator: Alan Collins (West Virginia University)
Presenters: John Halstead (University of New Hampshire), Carla Dickstein (West Virginia University), David Alice (Cornell University), and George Criner (University of Maine)

Difficulties in siting municipal solid waste (MSW) facilities and increasing generation of MSW have led to significant external impacts among northeastern states stemming from MSW problems. These external impacts include: (a) negative public sentiment to urban exportation of MSW to rural areas; (b) community MSW recycling programs' impact on secondary material markets; and (c) state legislation on packaging and product recycling requirements. The purpose of this symposium was to examine regional MSW issues and current university research programs in MSW.

Halstead discussed the origins of MSW problems in the U.S. and alternative disposal methods. He presented an outline of his research on waste disposal capacities and community recycling programs in New England. Dickstein reviewed her research on the socioeconomic impacts of landfills in West Virginia. She concluded that opposition to out-of-state garbage has a rational foundation and that current West Virginia laws have expanded the role of local communities in planning MSW disposal. Alice gave details of local community efforts to compost yard waste in New York State and the extension work being done through the local government program at Cornell University. Criner examined the role of packaging in product merchandising and its waste disposal impact. He discussed state and regional efforts to limit packaging impacts on waste disposal.

Impact of Bovine Somatotropin on Milk Supply and Demand

Organizers: Harry M. Kaiser (Cornell University) and Loren W. Tauer (Cornell University)
Moderator: Loren W. Tauer (Cornell University)
Speakers: Harry M. Kaiser (Cornell University), Anya M. McGuirk (Virginia Polytechnic Institute and State University), Robert D. Yonkers (The Pennsylvania State University), and Catherine Halbrendt (University of Delaware)

Bovine somatotropin (bST) is a naturally occurring protein in the pituitary gland of dairy cows that regulates and stimulates milk production. Through advances in genetical engineering, synthetic bST can now be produced in laboratories through recombinant DNA technology and injected into cows to increase milk yields. Bovine somatotropin, or bovine growth hormone (bGH), as it is sometimes called, is currently under review by the federal Food and Drug Administration and may be approved by 1991. Milk yields in experimental herds have increased by 10% to 25% when synthetic bST has been administered. At the same time, there may be a consumer backlash to bST, as surveys indicate some negative consumer reaction to bST. The purpose of this symposium was to examine the possible impacts that bST would have on the supply and demand for milk.

Harry Kaiser examined implications of bST on national milk prices, production, profits, and net government purchases using composite estimates of adoption rates, yield response, and impact on costs. Under current policy, bST would increase milk production by 6% on average for 1990-95 compared to a bST ban. Anya McGuirk discussed the results of a recent consumer survey on bST conducted in Virginia. Depending upon the price effect, bST could decrease fluid milk consumption by as much as 14%. Robert Yonkers provided several observations on the impact of bST on production and reviewed Kaiser's presentation. Catherine Halbrendt provided a perspective on consumer backlash to bST and reviewed McGuirk's presentation.

Abstracts of Selected Papers

"Ex-Vessel Price Determination in Seasonal Fisheries." Cathy R. VVessells (University of Rhode Island) and James E. Willcn (University of California at Davis)

This paper presents a framework for analyzing factors which determine ex-vessel prices in fisheries where the production period is relatively short and large amounts of perishable supplies must be processed quickly and placed into inventories which provide supplies for the remainder of the marketing year. We show that there are at least two sets of markets in such fisheries; namely, an inventory allocation market and an inventory dissipation market. These markets are shown to be linked and together determine the processors' willingness to pay for the raw product in the harvest period, or the ex-vessel price.

"Impact of American Lobster Imports From Canada Upon the U.S. Ex-Vessel Market.*" Hsiang-tai Cheng and Cristanna M. Cook (University of Maine)

All imports of American lobsters are from Canadian Maritime provinces, which accounted for over 40 percent of the U.S. live lobster market through 1988. The impact of Canadian exports upon the U.S. ex-vessel price varies by season as a result of differences in domestic landings and Canadian export patterns. No significant impact of Canadian exports upon the U.S. ex-vessel price was found when U.S. landings were high. Significant impact of Canadian exports were found for the period when U.S. landings were normally at their annual low. The patterns of U.S. landings and Canadian exports to the U.S. also reveal that the two lobster industries have evolved to harmonize marketing to a considerable extent.

"Economies of Pond Size for Hybrid Striped Bass Growout." F. F. Wirth, C. M. Gempesaw II, and J. R. Bacon (University of Delaware)

The objective of this study is to evaluate the relationship of pond size and hybrid striped bass growout profitability as an alternative source of farm income in the Middle Atlantic region. A dynamic, comprehensive Monte Carlo simulation model (AQUASIM) along with stochastic dominance techniques were used to analyze the economics of hybrid striped bass growout from phase II to the market production stage for eight farms categorized by pond sizes. Four scenarios were assumed to examine the effects of pond-size dependent changes in feed-conversion efficiency and fingerling survival rates on discounted after-tax net present values and probabilities of economic survival and success. The impacts of changing survival rates and feed-conversion levels show that large-sized ponds are not necessarily the most profitable.

"Conjoint Analysis of the Mid-Atlantic Food-Fish Market for Farm-Raised Hybrid Striped Bass."

F. F. Wirth, C. K. Halbrendt, and G. F. Vaughn (University of Delaware)

Conjoint analysis was used to examine buyer preferences toward farm-raised hybrid striped bass. Purchase price was found to be the most important attribute in the product-preference rating for the wholesale and retail market segments. Product form contributed the most to restaurants' preference rating. Fish size also was an important attribute to all market segments. Depending on the market segment, a 2- to 3-pound, filleted, available year-round, competitively priced fish will gain the widest market acceptance.

"The Incidence of Tourism-Induced Fiscal Stress." Steven C. Deller, Alexander Mul hoi land, and Stephen Reiling (University of Maine)

The research reported in this manuscript examines the incidence of tourism-induced fiscal stress in rural Maine communities. Simple analytical methods are employed to assess the statistical relationship between measures of tourism, local fiscal stress, and the status of local public services. The results, in general, imply no relationship between higher levels of tourism and fiscal stress, but a positive relationship was identified between tourism and the stress level of certain public services. Thus, the results suggest that tourism may contribute to the revenue base at a sufficient level to offset strains placed on public services.

"Comparison of Nonlocal Market Orientation of Rural Services and Manufacturing Businesses." Stephen M. Smith (The Pennsylvania State University)

Using data from a 1989 survey of 693 service and 240 manufacturing businesses in nonmetropolitan Pennsylvania, the level of sales outside the county, the state, and to metropolitan areas was examined. The results showed that rural services strongly contributed to the local economic base, but less so than manufacturing. Metropolitan areas were the primary markets for one-fourth of the service businesses vs. 42% of the manufacturers. For out-of-county and out-of-state sales, the figures were 50% and 18%, respectively, for service establishments, vs. 83% and 53%, respectively, for manufacturers.

"A New Approach to Siting Noxious Facilities within Old Political-Regulatory Paradigms: Some Insights from a New England Landfill Siting Process." Stephen K. Swallow, Dennis Wichelns, James J. Opaluch, and Thomas Weaver (University of Rhode Island)

The plethora of results from "not-in-my-backyard" (NIMBY) opposition motivates politicians to seek new methods for siting locally undesirable land uses. Motivated by an ongoing process to site a new landfill

in Rhode Island, this paper suggests an economic approach for a siting process when regulators prefei a centralized approach. The paper develops the new approach in a manner consistent with earlier economic approaches that directly address the NIMBY opposition's demand for compensation. The new approach extends the scope of economic advice by also addressing public concerns regarding resources of state-wide importance.

"Group Homes for the Developmentally Disabled; Are They LULU's?" Donald J. Epp and Sheldon R. Gelman (The Pennsylvania State University)
The economic impact of locating small group homes in single-family residential neighborhoods was assessed. Sales within 750 feet of nineteen homes, which occurred twenty-four months prior and subsequent to licensing, were examined using a computer-assisted mass-appraisal model with additional variables for location relative to the group home. Findings confirm earlier studies that refute the notion that such homes adversely impact real estate values of adjacent properties. Thus, there is no evidence of a property value basis for communities considering group homes a LULU.

"An Analysis of Farm Financial Stress and Farm Exits in the 1980s." Jerome M. Stam (USDA/ERS)
During much of the 1980s concern with financial stress in agriculture was often stated in terms of increased farmer exits from farming because of bankruptcy, foreclosure, or other involuntary reasons. An estimated 200,000 to 300,000 farm businesses failed for financial reasons between 1980 and 1988. Exits from farming in the 1980s were slowed by a variety of federal and state programs and policies. Farm numbers declined by 266,600 during 1980-89, compared with 1.7 million during the 1950s, 1.0 million during the 1960s, and 510,000 during the 1970s. When adjustments are made in farm numbers because of the 1974 change in farm definition, the average annual decline for 1980-89 was almost the same as for 1970-80.

"Farm Adjustments to Financial Stress: Results from a Longitudinal Analysis." Susan Bentley (USDA/ERS) and William E. Saupe (University of Wisconsin)
An index of farm household viability was constructed for a sample of Wisconsin operators followed in 1982 and 1986. The operators were placed in four categories based on the change in their viability status (e.g., remained viable in 1982 and 1986; viable in 1982 but not in 1986; etc.). These groups of operators differed significantly in their financial and personal characteristics. We examined the adjustments made by these operators during the financially stressful 1982-86 period and compared the financially stressed groups to operators who had invoiuntarily left farming during that time. Data were obtained from a panel of

farm operators in eight southwestern Wisconsin counties initially surveyed in 1982 and again in 1986 (n = 434).

"Agricultural Adaptation to Urbanization: Farm Types in Northeast Metropolitan Areas." Ralph E. Heimlich and Charles IX Barnard (USDA/ERS)
This paper delves beneath metropolitan averages using data on individual northeastern farms classified into three types. A conceptual framework of agricultural adaptation to urbanization is presented from which a metro farm typology is deduced. The study shows that metropolitan agriculture can be characterized by a small number of adaptive farms accommodating themselves to an urbanizing environment, a substantial group of recreational farms, and a large group of traditional farm operators who have increased costs without compensating increases in revenues. The importance of each type to metro agriculture is assessed, and implications for preserving farming and farmland are drawn.

"The Profitability of Sustainable Agriculture in the Mid-Atlantic Region: A Case Study Between 1981 and 1989." James C. Hanson and Dale M. Johnson (University of Maryland), Steven E. Peters and Rhonda R. Janke (Rodale Research Center)
A long-term whole-farm analysis measures the profitability of conventional and low-input farming systems. Data from a nine-year agronomic study of alternative farming systems at the Rodale Research Farm, Kutztown, Pennsylvania, is incorporated into the FINPACK financial analysis program to analyze the factors of profitability, liquidity, and solvency on a representative commercial grain farm. Risk is also analyzed.

"Extension Staff Exchange." Don Cameron (Nova Scotia Department of Agriculture and Marketing)
Staff exchanges in extension can be positive and rewarding opportunities. This one-year exchange involved the Ontario Ministry of Agriculture and Food (my employer) and the Nova Scotia Department of Agriculture and Marketing. For a successful exchange you should give yourself lots of lead time to set it up, take the initiative to develop the proposal, ensure you have support at home and from the host, recognize the impact an exchange can have on you and others, and prepare for a transition period, both going and returning. An exchange allows you to gain new experiences with new relationships and to face the challenge of obtaining cooperation and motivating others.

"Island of Opportunities." Gloria Wood (Prince Edward Island Department of Agriculture)
Prince Edward Island produces one dollar of value-added food for every three dollars of farm products sold. Extension marketing home economists are compiling an information program to help entrepreneurs

begin to produce more value-added food products. The program is scheduled to begin in summer 1990.

"Economic Considerations in Soil and Water Conservation Programs." Billy V. Lessley and William L. Magette (University of Maryland), and James Wood (Wye **Research and Education Center)**
A 343-acre commercially operated cash grain farm was selected on the Upper Eastern Shore of Maryland to analyze and demonstrate various Best Management Practices (BMPs). As a working farm, rather than a University of Maryland research farm, the demonstration farm provides a "real world" look at how BMPs affect water quality and the economics of an actual farming operation. The effort has been interdisciplinary and has provided a showcase and a focal point for Maryland's Extension Water Quality Program. Tours, field days, publications, etc. have been used to provide information to farmers, officials, and the general public.

"Potential Effects of the Triple Base Option on the U.S. and Northeast Potato Industries." James D. Leiby, Hsiang-Tai Cheng, and Michele C. Marra (University of Maine)
The Triple Base Option, one of several proposed packages of program changes designed to increase planting flexibility of major program crops for the 1990 Farm Bill, would have profound impacts on the production and marketing of program crops as well as nonprogram crops. This study examines the potential effects of a Triple Base Option on the U.S., northeast, and Maine potato industries under different proportions of the projected acreage shifts that will be planted to potatoes. The aggregate effects of this plan on potato producers are found to be relatively minor, although the marginal producers may be affected significantly.

"The Importance of Wholesale Produce Markets with Emphasis on the Northeast and Eastern Canada." Richard Beilock (University of Florida), James Patterson (USDA/Agricultural Marketing Service), and Sandra Baquero and Timothy Shell (University of Florida)
The results of a three-year study of the importance of wholesale produce markets are presented. The findings suggest that a third of all produce in the U.S. and Canada are routed through these facilities. In large metropolitan areas, such as New York City and Toronto, these markets often have even greater importance.

"The Potential for Upland Cranberry Production in Northern New England." James D. Leiby and Michele C. Marra (University of Maine)
Increasing demand for cranberry products has resulted in industry incentives to expand production. Development pressure and environmental concerns limit the expansion possibilities in traditional New England production areas with traditional production technology. This paper examines the feasibility of acreage expansion into new northern New England areas with a nontraditional bog construction and production technology. Results indicate that this method of expansion would be quite profitable under almost all of the price, yield, interest rate, and construction-cost scenarios examined.

"Interregional Competition for Eggs." James W. Dunn and Milton E. Madison (The Pennsylvania State University)
An interregional competition model for the U.S. egg industry is developed. The model is used to examine the effect of a change in the marketing costs for eggs on interregional egg markets. In addition, an increase in the demand for eggs is examined. The quantity of eggs consumed is not sensitive to supply-induced changes. In contrast, the quantity of eggs supplied is quite sensitive to demand-induced changes.

"Farmland Characteristics and the Value of Development Rights in Rhode Island and Connecticut." Dennis Wichelns and Tomislav Vukina (University of Rhode Island)
Real estate appraisal data for farmland included in purchasable development rights (PDR) programs in Rhode Island and Connecticut are examined to determine the impact of parcel characteristics on the appraised value of development rights. Observed variation in the value of development rights in Rhode Island is largely explained by characteristics including distance from major cities, location of the nearest shopping mall, beach, or town center, road frontage, and scenic views from the property. The Connecticut PDR program has given high priority to obtaining development rights on farms located in rural areas, while assigning low priority to farms nearest to New York City. Public water and sewage facilities on Connecticut farms and the portion of total land that is cleared or in pasture contribute significantly to development values.

"Protest Bids in Open-Ended Contingent Valuation." Wessley N. Musser, David G. Waddington, and James S. Shortle (The Pennsylvania State University)
A large number of zero bids are often obtained in open-ended contingent valuation applications. A question is often included in such surveys to allow classification of these zero bids into valid and protest groups. This paper evaluates this classification procedure in a contingent valuation study of farmland preservation in Pennsylvania. The zero protest group has less-positive attitudes towards farmland preservation and lower incomes. Thus, this classification procedure may not be valid.

"Conjoint Analysis of Demand for Deer Hunting." John Mackenzie (University of Delaware)
This paper develops a conjoint analysis of demand for deer hunting as a multiattribute recreational good. Implicit costs of travel time are evaluated from a hypothetical substitutability between travel time and trip expenditures. Since deer hunting success is uncertain, the model includes the probability of bagging a deer, rather than a certain bag rate, as a trip attribute. The estimated valuations of travel time support the contention that travel time should be evaluated vis-a-vis the value of time at the recreational site rather than at the labor-leisure margin.

"Willingness to Pay for Backcountry Experiences: The Case of the Pemigewasset Wilderness." John M. Halstead, Bruce E. Lindsay, and Cindy M. Brown (University of New Hampshire)
Past systems for wilderness management provide little information on the value of wilderness to backcountry users. This paper examines values placed by backcountry users on the Pemigewasset Wilderness Area of New Hampshire. Results indicate willingness to pay between $4.82 and $5.65 per trip. Variables that affect these bids most strongly are the probability of returning to the area and the importance of a primitive camping experience. Tobit coefficient estimates differ substantially from OLS estimates, and the direction of this difference in values is not consistent. Thus, past research conducted using least squares analysis may have provided incorrect estimates of coefficients for explanatory variables.

"Price Response to Promotional Activities for Beef Bulls Using Subjective Extension Data." Malcolm Commer, Jr. (University of Maryland), Warren C. Couvillion and C. W. Herndon, Jr. (Mississippi State University)
The objectives of this study were to evaluate the relationships existing between sale price of performance-tested beef bulls and promotion, and to determine the correlation between promotion and perceived breeder quality. Linear regression techniques, using various combinations of quantitative genetic variables and qualitative indicator variables related to breeder reputation and specifically to promotion, were employed to satisfy these objectives. Regression techniques were used to further ascertain the components that affect breeder reputation and the economic importance of these factors. Inclusion of data pertaining to promotion improved the explanatory power of previous models containing only measures of genetic variables.

"The Price-Quality Relationship for Food and Household Goods." Orlen Grunewald (Kansas State University) and David J. Faulds (University of Tennessee)
This investigation analyzed approximately 11,000 brands of" consumer packaged goods sold in Belgium, the Netherlands, the United States, and West Germany over a sixteen-year period. The results indicate that the price-quality relationships are weak in all four countries. However, there were a greater number of negative price-quality correlations for food products in the United States and a greater number of positive correlations for food and household items in West Germany.

"The Relationship between the Availability of Forest Resources and the Location of Plants in the Wood Processing Industries." Frank M. Goode and Rory Fraser (The Pennsylvania State University)
This study was designed to test the commonly held hypothesis that location in wood processing industries is geographically linked to the availability of forest resources and to intermediate wood products. The statistical analysis did not support this hypothesis. In fact, for two of the three industries studied, there was a negative association between the availability of intermediate wood products and the location of new plants in the wood processing industry.

"The Returns to Agricultural Research in Maine: The Case of a Small Northeastern Experiment Station." James D. Lei by and Gregory D. Adams (University of Maine)
An aggregate state-level agricultural production function with arguments for in-state research, extension spillover of out-of-state research, land, labor, and capital. Ridge regression techniques are used to adjust multicollinearity among policy-determined variables. The estimates are then used to calculate implied internal rates of return to agricultural research for Maine. Rates of return are estimated at 82% and 118% using two convergence criteria.

"The Potential for Structural Change hi the Northeast Dairy Manufacturing Sector." Mark W. Stephenson, Andrew M. Novakovic, and James E. Pratt (Cornell University)
A transshipment model of the northeast dairy sector is developed to assess the potential for structural change in the manufacturing industry. It is determined that the reduction of existing hard product processing capacity near metropolitan areas would diminish total costs. Industry-wide savings of about $60 million annually would be realized by fluid, soft product, cheese, and butter/powder manufacturers. The model points to firm-level as well as industry-level incentives to move toward a more concentrated dairy manufacturing sector in the Northeast.

"Disaster Planning in the Dairy Industry: Conceptual Issues and a Spatial Modelling Approach." Maura M. Keniston, James E. Pratt, Mark W. Stephenson, and Andrew M. Novakovic (Cornell University)
Recent disasters in California and elsewhere demonstrate the lack of and need for integrated disaster

plans for the U.S. dairy industry. A brief overview of general federal and state disaster policy is given. It is demonstrated how a spatial model of the northeast dairy industry can be used to assess and analyze potential impacts of local and regional disasters on market levels in the industry, using a radioactive release from a nuclear power plant reactor in the Northeast as an example.

"Economic Analysis of the Proposed Connecticut Dairy Income Enhancement Program.*" Ronald W. Cotterill and Larry E. Haller (University of Connecticut)

This paper analyzes the proposed Connecticut Dairy Income Enhancement Program—an initiative before the state legislature that would place a fee on fluid milk sold and return up to $1.25 per hundredweight to Connecticut dairy farmers. The paper employs a statewide survey of retail milk prices to analyze consumer impacts and uses Agrifax farm records to analyze impacts on farmers. The paper does not assess the political feasibility of the program, which is doubtful. It does, however, appear that parts of the program, other than tax financing, do complement Connecticut's current farmland preservation program and might, if adopted, improve transfer efficiency of state programs.

"Optimal Agricultural Policy with Biotechnology: Bovine Somatotropin and the Dairy Sector." Loren W. Tauer and Harry M. Kaiser (Cornell University)

A control model of the U.S. dairy sector was constructed to determine optimal policy when bovine somatotropin is released. Social welfare, defined as consumer plus producer surplus minus adjustment and net government costs, was maximized. Control variables were the milk support price and government purchases of cows. Compared to previous simulation research where government policy and adoption were modeled exogenously, the results show that policy not overly disruptive to the dairy sector is possible.

"Differential Returns to Labor in Indian Agriculture." David G. Abler (The Pennsylvania State University)

This paper studies the responses of workers to differential returns to labor in Indian agriculture. The speed at which wages for male and female hired agricultural laborers adjust to changing circumstances is estimated. Pooled time-series state data for 1968-85 are used. This period encompasses tremendous growth in the use of modern seed varieties, fertilizers, and tractors, and includes several variations in real wages. Results indicate that wages adjust quickly toward their long-run equilibrium values, about 50 percent per year. Results also suggest that the speed of adjustment is the same for males and females.

"Technology Adoption Behavior of Farmers in Swaziland." Ganesh P. Rauniyar and Frank M. Goode (The Pennsylvania State University)

The study examines the interrelationships among technological adoption practices for maize in Swaziland. Factor analysis is used. The results suggest that seven adoption practices can be summarized by three distinct indices (packages), and these indices are independent of one another. For example, usage of high yielding variety (HYV) seeds, basal fertilizer, and tractor plowing are interdependent and are represented in the first index. However, usage of top-dress fertilizer and insecticides (second index) is not conditioned by farmers' adoption of the first index. A technological package approach rather than a single practice approach is suggested.

"A Comparison of U.S. and West German Dairy Farm Production Structures." Conrado M. Gempesaw II, G. Joachim EIterich, and Rodolfo V. Tanjuakio (University of Delaware)

The production structures of U.S. and West German dairy farms were analyzed using duality-based models to provide comparative statistical information for market-oriented policy formulation. A restricted-variable profit function was specified for U.S. farms and a restricted-variable cost function was used for German dairy farms to accommodate the presence of production quotas. Empirical results show that West German dairy farmers are improving their competitive position, but U.S. dairy fanners still hold the edge in productivity and cost of production.

"Subsidies and Cattle Production in the Amazon: Economic Analysis and Implications for the Future." Catherine Halbrendt (University of Delaware), Emily McClain (USDA/ERS), and Jennifer Sherbourne and Conrado Gempesaw II (University of Delaware)

This study attempts to establish an economic relationship between Brazilian government policies and cattle ranching in the Amazon using a stochastic coefficient regression method. Response to credit subsidy was much more inelastic than response to world price. Forecasts showed some regions respond more to credit than others. This suggests that credit reduction alone would not slow down cattle production in the Amazon.

"Promoting Agriculture in the Urban/Rural Interface: A Case Study in Southern Maryland." James C. Hanson (University of Maryland)

Traditional farming communities surrounding major metropolitan areas are increasingly at risk as the population moves outward. This is especially true in southern Maryland where the rates of decline in farms and farm acreage, and the increase in low-density residential housing exceed state averages. Successful extension work in these situations requires mobilizing an often demoralized agricultural community and then

creating opportunities for success in this new environment. The Southern Maryland Agricultural Commission, a unique public/private partnership, has provided this leadership. The Southern Maryland Regional Farmers' Market is an example of a program that benefits farmers and urban consumers.

"Nova Scotia Agricultural College Recruitment." Steven Russell and David Arnfast (Nova Scotia Agricultural College)
A trend of stagnant and declining enrollment at the Nova Scotia Agricultural College (NSAC) provided the motivation to learn more about the attitudes and attributes of students. Surveys were conducted with 200 NSAC students and 400 high school students. The high school survey provided the most distressing results. Students indicated career choice (75%) as the most important factor in selecting a university, yet only 2% could name more than three different agricultural careers. Students also listed environment and hunger as the most important world issues. A college task force on recruitment is now developing a long-range marketing strategy for NSAC.

"Corn Acreage Response in Pennsylvania: An Application of Ridge Regression." Fengkun Zhao, Wesley N. Musser, Cathy Ann Hamlett, and Spiro E. Stefanou (The Pennsylvania State University)
Corn supply response equations have been given limited attention in production regions where corn is primarily a feed input rather than a cash grain. This paper considers such functions for Pennsylvania where most corn is used for dairy feed. Introduction of milk price into the equations resulted in serious multicollinearity. Ridge regression techniques were then implemented, which improved the estimates. Response elasticities were found to be similar to those in other studies.

"Short- and Long-Run Adjustments in Vermont Dairy Production." Ricardo E. Quiroga and Boris E. Bravo-Ureta (University of Connecticut)
This paper analyzes short- and long-run adjustments in Vermont dairy farming using a restricted partial equilibrium framework. A normalized quadratic profit function is estimated with data for three farm sizes for the period 1966-88. The model incorporates two outputs, four variable inputs, and two quasi-fixed inputs. Regularity conditions for the profit function are satisfied and the elasticity estimates have the correct signs. All long-run elasticities are higher than their short-run counterparts which confirms the Le Chatelier principle. Complementarity in production is observed in milk and livestock. Concentrate feed and forage are substitutes in the short run and complements in the long run. A complementary relationship between all inputs is observed in the long run. The optimal levels of the quasi-fixed factors (herd size and family labor) are found to be considerably larger than observed levels, which is consistent with a continuing shift towards fewer and larger dairy farms.

"Soybean Acreage Response in the Northeast." Cecil W. Davison and Brad Crowder (USDA/ERS)
Expected net returns to cropping activities are used to estimate soybean acreage response in the Northeast. Futures prices and lagged market prices constitute proxies for price expectations. Short-run and long-run elasticities on expected net returns to soybeans were estimated at 0.4 and 2.4 for the northeast region—more elastic than estimates for other regions and the United States. Soybean acreage, second only to corn in the Northeast, is more responsive to expected net returns from soybeans than to expected net returns from corn.

"Noninferior and Nearly Optimal Greenhouse Management Decisions." Cleve E. Willis and Michael S. Willis (University of Massachusetts)
A linear programming model of greenhouse decisions based on expected profit maximization is solved and these results are compared with two other sets of results. One set is the generation of noninferior solutions based on labor savings and expected profit considerations. The other is a set of nearly optimal solutions generated by the HSJ procedure. It is argued that for greenhouse operators typical of Massachusetts, the information contained in the nearly optimal and noninferior solutions may be worth much more than the "optimal" solution alone.

"A Diagrammatic Analysis of Defensive Expenditures in a Household Production Framework." Charles W. Abdalla, James S. Shortle, and Brian A. Roach (The Pennsylvania State University)
Household expenditures for averting pollution are receiving considerable attention as a means for measuring environmental quality changes. Several recent theoretical studies using household production models have examined the relationship between changes in defensive expenditures and the benefits of environmental improvements. The mathematical sophistication of this work makes it less accessible to many interested researchers and policy analysts. This paper provides an introduction to analysis of defensive expenditures and graphically illustrates key conclusions about the relationship between averting expenditures and environmental benefits. Most importantly, the graphical presentation should make the theory more accessible and lead to improved theoretical and empirical research.

"Taking Advantage of the Internal Flow of Nutrients: An Ex Ante Approach to Nutrient Loss Reduction on a Pennsylvania Dairy Farm." Beth Lemberg, William T. McSweeny, and Les E. Lanyon (The Pennsylvania State University) The study examined the economic attractiveness of a detailed nutrient management system to a southeastern Pennsylvania dairy farmer. The results show that the costs associated with the nutrient management system were more than offset by the resultant savings in fer-

tilizer expenditures, and that nutrient losses to the environment could be reduced substantially.

"An Approach to Modelling Farm-Level Water Quality Impacts of Pennsylvania Corn Production." Robert D. Weaver and Jason K. Harper (The Pennsylvania State University)

The problem of modelling water quality impacts of farm production decisions is considered. An integrated model of production decisions and biophysical flows is developed, and issues concerning its empirical implementation are discussed.

"Adoption of Best Management Practices for Non-Point Source Pollution Control by Maryland Farmers." Erik Lichtenberg, Billy V. Lessley, and Dan Howar (University of Maryland)

A survey of 280 Maryland farmers is used to study adoption of twenty-four best management practices (BMPs) for reducing agricultural runoff. The data suggest that there may be an inadequate recognition of water quality problems and agriculture's contributions to those problems. Adoption patterns vary across production regions and types and sizes of farm operation. Farmers who have adopted BMPs recognize their effectiveness in reducing runoff and improving water quality and also tend to believe that BMPs increase yields and profits. Cost sharing does not appear to provide a significant incentive for farmers in the state having runoff problems to adopt BMPs, suggesting that current incentives may be inadequate for implementing greater adoption of BMPs.

"The Federal Role in Agricultural Credit." John van Abbema (Farm Credit Corporation)

The Farm Credit Corporation (FCC) is a direct lender for the federal government and administers a portfolio of 63,600 loans totalling $3.8 billion. Last year, FCC lent $195 million in 2,400 loans to the industry. The Canadian government responded quickly to help farmers pass through the financial crisis of the 1980s. First came a special financial assistance program in 1981 and 1982, then an interest write-down in 1984 followed by a moratorium on FCC foreclosures in 1985. From these experiences came the Farm Debt Review Act (a mediation process) and the Rural Transition Program (assistance to exit with dignity). The farm economy is now on the upswing, land values are up, and FCC is repositioning itself to be an alternative source of mortgage credit to average-risk farmers. New initiatives at the national level and at local levels are improving FCC's service. New policies on loans to part-time farmers and in financial counselling services demonstrate the federal government's continued dedication to Canadian farmers.

"Extension in Microcosm: The Atlantic Livestock Feed Initiative." Frank Lawson (Prince Edward Island Department of Agriculture)

Using a multimedia presentation, the Prince Edward Island Department of Agriculture examines that province's livestock feed industry in 1986, describes the Atlantic Livestock Feed Initiative (ALFI) Agreement signed in 1987, details many of the extension activities afforded by ALFI, and reviews some of ALFI's achievements.