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Professional Interfaces and Impact of the Profession

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The questions I have sought to answer are: how does agricultural economics fit into the larger picture of scientific teaching, research and management; and, what are some of the influences that have flowed between agricultural economics and other disciplines? While my address will focus on the source professions, agricultural science and economics, there have been and will continue to be important links with other social sciences, e.g. political science, psychology, sociology and law; physical sciences, e.g. mathematics and engineering; and the biological sciences. No short or generally acceptable answer is likely to be found to my questions. This is because of the great diversity of skills and jobs undertaken by agricultural economists, and because it is an active and evolving discipline and profession.



There can be little doubt that agricultural economics is a well established discipline, although most of us, including myself, have difficulties in specifying what actually is or is not an agricultural economist. The discipline is represented by agencies and divisions in federal and state public services, by departments or other identifiable groups in almost all Australian universities, it has its own society with state branches, there are four professional journals and a considerable volume of other publications, and the title agricultural economist/farm consultant/farm adviser can be found on many doors in private industry. Professional activities extend beyond the more traditional areas of farm management, marketing and policy to include natural

resources, food and nutrition, rural communities, international trade, intersectoral linkages and their effects.

An interesting example of the diversity of agricultural economics is provided by the different ways in which a tertiary student can obtain a bachelor's degree with a substantial training in agricultural economics. In universities students enrol for a bachelor of economics degree and take agricultural economics subjects as optional third- and second-year subjects. The lecturer may be a member of the economics department, of an agricultural economics department, or of a school of agriculture. Alternatively, the student may be enrolled for a bachelor of agricultural science degree and take economics and agricultural economics subjects as part of the degree. Again, some of the lecturers will come from economics, agricultural economics and agricultural science departments. Another option is to enrol for a bachelor of agricultural economics degree. The different degrees have a common core of general economic theory, both microeconomic and macroeconomic, and usually a quantitative component based on statistics, regression analysis and programming. A variety of subjects varying from institution to institution and within institutions gives students a feeling for the physical, biological and institutional constraints and structure of agriculture, and they provide illustrations of the applicability of parts of the core economic theory in problem solving.

Taking a narrow intellectual point of view, agricultural economics can be viewed as a subdiscipline of economics in the same way as, say, international trade and labour economics. Particularly in Australia, agricultural economics has relied extensively on neoclassical theory. The picture of a profit-maximising producer, one among many thousands producing a homogeneous product, forms the backdrop for much of the farm management area. Much of the marketing and policy work relies on competitive partial-equilibrium models of supply and demand. Underlying most benefit-cost studies and the analyses of government intervention is the neoclassical paradigm. More recent work on intersectoral analyses and natural resources has also built on these foundations. While there have been a few critics of the paradigm, e.g. Healy (1966) and Stent (1976), in general I agree with Musgrave (1976) that there has been and still is "...a low level of controversy within the profession itself." To a large degree the assumptions of the neoclassical model provide a

reasonable approximation and simplification for many of the problems we study. As a twist we have developed special expertise to handle the uncertainties associated with agriculture's dependence on nature and fickle world markets. Also, the pervasiveness of government controls provides a fertile field of study. The techniques can provide information on distributional and equity effects as well as efficiency effects in both positive and normative settings.

A second characteristic of Australian agricultural economics has been its quantitative content and attention to the solution of actual problems. This stems in part from our historical links with agricultural science and the agricultural establishment (more on this later) and in part from a deliberate choice by our founding educators. This particular attribute has well served the employment of agricultural economists as applied economists in the past, but by now general economics programs have caught up and in some cases have exceeded this feature of contemporary agricultural economics programs.

In short, agricultural economics is heavily reliant upon general economic theory for its intellectual framework and for many of its analytical tools. Being primarily applied economists, agricultural economists make few explicit contributions to economic theory although there is nothing like a real problem to isolate deficiencies in theory and sometimes solutions to puzzles. Even so, it is clear that there is more reading of general economics texts and journals by agricultural economists than the reverse. In a similar vein, agricultural economics will draw on other disciplines, including mathematics, statistics, political science, engineering and sociology, for ideas and theory.

Agricultural economists have made important contributions to the discipline of economics. Since this symposium has a celebratory atmosphere it seems appropriate to quote a few selected glowing commentaries. In his survey of Australian economic policy of 1968 Corden noted (p. 7):

The literature of agricultural economics is, along with that of wages policy, the most impressive branch of Australian economics, though more for its usefulness and its technical competence than its originality. Most of it is positive economics, so that more is known about the rural sector of the

Australian economy than any other. The considerable group of agricultural economists also writes widely in the field of production economics, some of them applying linear programming and other mathematical techniques to Australian problems, and they keep current trends and policy issues in the agricultural sector under continuous observation.

Leontief in his presidential address to the American Economic Association in 1970 observed (p. 5):

An exceptional example of a healthy balance between theoretical and empirical analysis and of the readiness of professional economists to cooperate with experts in the neighboring disciplines is offered by Agricultural Economics as it developed in this country over the last fifty years. A unique combination of social and political forces has secured for this area unusually strong organizational and generous financial support. Official agricultural statistics are more complete, reliable, and systematic than those pertaining to any other major sector of our economy. Close collaboration with agronomists provides agricultural economists with direct access to information of a technological kind. When they speak of crop rotation, fertilizers, or alternative harvesting techniques, they usually know, sometimes from personal experience, what they are talking about. Preoccupation with the standard of living of the rural population has led agricultural economists into collaboration with home economists and sociologists, that is, with social scientists of the "softer" kind. While centering their interest on only one part of the economic system, agricultural economists demonstrated the effectiveness of a systematic combination of theoretical approach with detailed factual analysis. They also were the first among economists to make use of the advanced methods of mathematical statistics. However, in their hands, statistical inference became a complement to, not a substitute for, empirical research.

Closer to home Ross Parish in his 1969 Presidential address to the Thirteenth Annual Conference of the Australian

Agricultural Economics Society (p. 1) began with:

Members of this Society should contemplate the present state of the agricultural economics discipline and profession in Australia with pride and gratification, ... the growth of agricultural economics has helped to correct certain weaknesses - particularly in microeconomics and econometrics - in the Australian economics profession as a whole.

These are fine sentiments that give one's heart a glow. But they were made some twelve or more years ago. For several reasons I think they are less true today than then. Our growing emphasis on economic theory and techniques has come at the expense of attention to institutional and technical details. To some extent agricultural economists have lost touch with farm management. The hiving off of farm management to farm management associations and the paucity of farm management type papers in the journals and annual conferences has left a gap in our skills for which we once were renowned. John Dillon in his Presidential address to the Australian Agricultural Economics Association in 1972 observed (p. 78):

I do not see such developments as constituting any disadvantage to agricultural economics in its farm management interests so long as sufficient economists keep a foot in both camps.

I fear that insufficient economists have kept an interest in farm management and that we risk a take-over by the various business schools.

Second, our microeconomic paradigm has been largely restricted to either of the extreme positions of perfect competition for the analysis of farmers and consumers and monopoly for the analysis of marketing boards. Between farmers and consumers we have left an enormous gap of business involved in processing, storing, transporting and distributing food and fibre. Nowadays some two-thirds of the consumer's food dollar goes to the off-farm sector and only one-third to the farm sector. In turn, the farmer spends over a half of his gross receipts on off-farm products and services. Many of our jobs are in the off-farm sector. Changes in the organisation and operation of the farm sector have efficiency,

distributional and equity effects on farmers. Yet, as a profession, our knowledge of this important off-farm sector is limited.

Because firm concentration is relatively high and because of the importance of product heterogeneity, it seems to me that we will have to dig long and hard into noncompetitive theory if we are effectively to analyse the off-farm sector. I see little future in pursuing the Bainian structure, conduct, performance model. General economic theory is developing interesting possibilities in the areas of conjectural variations - if you like, a model of rational expectations of oligopolistic behaviour - and contestable markets. Applied general economic analyses of deregulation may give guides and there are other groups of applied economists in manufacturing industry, transport, etc., with relevant expertise.

Corporations with large staffs raise different problems of coordination, labour management, and financial opportunities and management than does the family farm. It seems likely that if we want to contribute analytical techniques for analysing businesses in the off-farm sector and to provide graduates for these organisations, some major changes in our curriculum and methods of analysis will be necessary.

Finally, in terms of our previous role as leaders in quantitative techniques it seems that the econometricians and operations researchers have left us floundering in the dust. Fortunately, there are several of our profession who are well versed in recent developments in new techniques and in evaluating rapid developments in the computer age.

All is not gloom. In recent times members of the agricultural economics profession have made substantial contributions in other aspects of the economics profession. The Bureau of Agricultural Economics has served as a successful prototype for the Bureaux of Transport Economics, Industry Economics and Labour Market Research in the federal sphere. Many agricultural economists can be found throughout these and other parts of the public service. The growing consulting industry has found agricultural economists good staff for its expansion into developing country agriculture and other projects as well as the traditional Australian farm scene. Perhaps one of the most impressive achievements of the profession has been its penetration of the farmer lobby groups. This has resulted in a significant improvement in

agricultural policy debates in conjunction with the Green Paper, Farm Focus and Balderstone reports. Agricultural economists have found ready markets for their skills and are having increased impacts on general economic as well as agricultural policy.

Agricultural economists in academia, government and industry have made important contributions to newer fields of study. Nowadays agriculture must include in its concern nutrition and food prices as well as farm prices and incomes. Commodity price changes in the 1970s revitalised the supply side of macroeconomic policy analysis and debate, and in turn macroeconomic policy and exchange rate policy are seen to have important effects on agriculture. Both general economists and agricultural economists have found this area stimulating. Provided agricultural economists keep pace with theoretical developments, their peculiar institutional knowledge can be of great assistance in analysing these general economy issues. A related issue is that of intersectoral interdependencies where general and agricultural economists have explored the effects of resources booms and manufacturing industry protection on the traditional agricultural sector.

Some other areas of major initial and continuing contributions by agricultural economists include: benefit-cost analyses of major public investments; the causes, distribution and possible policies for mitigating poverty; adjustment assistance problems and policies; assessment of the implicit value placed on environmental and other non-marketable goods and bads. A number of agricultural economists have played leading roles in the development of new areas such as urban economics, resource and recreation economics, marine economics and transport economics. Finally, we should not forget those who have made direct contributions to the traditional fields of both agricultural economics and general economics.

Let me turn briefly to consider some aspects of our relationship with the agricultural sciences. To an important extent the development of, structure of, and funding of agricultural economics can be linked with the special regard and unique position in which society held agriculture. For a variety of reasons, including the fundamental importance of agriculture whether as a provider of food, export income or great people and its atomistic structure, society has been

willing to devote large resources to agricultural sciences and special policy deals to assist farmers and their families. Partly because of these reasons there developed chemistry and agricultural chemistry, engineering and agricultural engineering, statistics and agricultural statistics, and economics and agricultural economics. While the perceived validity of these arguments may have waned, their momentum continues.

As the earlier quotations from Cordon and Leontief illustrate, we have had a special relationship with the agricultural sciences and many of us count agricultural scientists among our colleagues. In the areas of applied agricultural research and extension the reasons for having agricultural economists as part of the team are as strong as previously. The agricultural economist can provide an overall perspective not only at the farm level, which has reached its pinnacle in the farm consultant, but also further on in terms of commodity market effects, resource usage effects and effects on income distribution. Many natural scientists miss some of the subtleties of technical versus economic optima, and ultimately new technology needs to be cast in a profit-enhancing package. Perhaps a little presumptuously, some of us live in hope of a greater role for economic analysis in the selection, planning and analysis of biological research experiments. For our part, agricultural economists will need to be vigilant in choosing frameworks which are appropriate to specific problems and to avoid rushing into ones with the latest in economic jargon and wizardry.

Where research is more towards the basic and specialised end of the spectrum, whether by plant, animal, soil or agricultural economist scientist, the fruitful interaction of one discipline on the other seems likely to diminish. There certainly is a trend towards greater specialisation and narrowness of perspective in the "publish or perish" race. While some agricultural economists have taken a role of generalist I am not convinced that we either have or should have a monopoly on such positions.

An important segment of the activities of agricultural economists depends on knowledge of the underlying physical and biological features of the system under study. For example, it is difficult to imagine preparing an actual policy strategy for soil degradation without knowledge of the technical effects of alternative management strategies. That

is, I see continuation of a fruitful symbiotic relationship between a sector of the agricultural economics profession and the allied biological, agricultural and natural sciences.

I conclude with some observations about the challenges facing universities in their training of agricultural economists. First, the range of problems and issues for investigation is certain to continue expanding. Second, the range of skills used by different members of the profession is far too diverse to allow a comprehensive coverage in a course of three or four years. Third, the above two points indicate a need for a generalist education whose emphasis is on principles and modes of operation rather than on techniques. Similarly, if you like "different horses for different courses", there is a strong case for a number of alternative program structures. Some students will want and should be given the opportunity to include in their studies subjects from such disciplines as sociology, political science, labour relations, engineering, and business administration as well as the core disciplines of agriculture and economics. Fourth, in almost all cases raw graduates will require job-specific training to become fully conversant with the key physical, biological and institutional constraints of their problem context and to develop ease and competence with appropriate techniques. Finally, I am confident that the agricultural economics profession can continue to build upon its solid and enterprising achievements.

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