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Whither Agricultural Economics: A Look Ahead to the Twenty First Century*

P.L. Arcus**

1. Introduction

This paper addresses the question of where the profession of *agricultural economics* is going in the late 1990s and the early 2000s. Reference is to Canada, the United States of America, New Zealand and Australia primarily. In the developed countries, there is a change away from an emphasis on food production towards marketing especially in terms of quality and variety. Wealth generation in agriculture is increasingly hard to achieve. At the same time, there is increasing pressure on natural resources due to population growth. Against these trends, this paper discusses where the agricultural economics profession will find itself in the coming years.

2. The Profession

The profession consists largely of university trained economists specialising in agricultural aspects of the national and international economies of their countries, in government departments (responsible for agriculture particularly, but also in fisheries and forestry), in business (mostly agribusiness and farming), and in education (in schools and universities).

The profession has recently been described as one in which the word 'agricultural' is a codeword (Houck 1993). The codeword is well understood in the profession but not outside it; 'the term 'agricultural' in our titles and in our publications.... now.... carries a very broad informational load to those of us on the inside' (ibid p.395). Outside the word is too often associated with 'just farming'.

By the use of the codeword, Houck identifies the subject matter of agricultural economics as the economics of :

- farms, foods and markets
- rural people and communities
- food and farming in development and growth
- natural resources and the environment
- international trade in food and raw materials
- macroeconomic forces affecting the above
- public policy of all kinds concerning the above.

Further, he identifies the characteristics of the profession as:

- consuming but not producing basic economic and statistical theory
- wanting to solve or illuminate real world problems
- arranging and sifting masses of real world data for important systematic patterns
- wanting to inform, advise and cajole non-economists about our work

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** Economist and Principal Consultant, Arcus Consulting Limited and Adjunct Professor of Agricultural Economics, The University of British Columbia, Vancouver, B.C., Canada.

- aching to be relevant to a wide, diverse community which includes non-economists.

The professions strengths lie in being practical. We are solution-oriented and we generally succeed in devising solutions to problems.

The professions weaknesses lie in becoming too enamoured of models and historic data and losing touch with the need to address today's decisions and their consequences for tomorrow. To the extent that the profession ignores the latter in times of tight budgets, the sources of funding are affected (McClatchy 1993, Sumner 1993).

There is a tendency for the profession to fragment into three user groups: academics, government agricultural economists, and industry economists. The academics tend to set high standards of performance related to intellectual development of the field; the government economists struggle with the practicalities of economics in a political context; and industry economists struggle for survival through attempting to (correctly) anticipate future consequences of current choice alternatives.

3. Future Directions

Taking the view that the profession sells services to a market, the traditional market for those services is shrinking. The traditional market was farmers; people who husband crops and livestock as their principal source of livelihood. The profession provided public goods in the form of information, policy and advice. Their numbers are shrinking rapidly; under three per cent of the population in Canada, the US and Australia (Statistics Canada 1992 and 1993, US Department of Commerce 1992, Australian Bureau of Statistics 1994) and under four per cent in New Zealand (New Zealand Yearbook 1993). The technological improvements which have allowed fewer and fewer people producing food and fibre to service larger and larger populations in these countries and the world is not going to stop. Thus, public funding for work in this traditional market is going to decline, at least rela-

tively, leaving fewer resources for such public good activities.

There are serious consequences for academic and extension economists particularly. Fewer will be needed for training purposes and extension activities. Some government positions related to the direct servicing of farmers will decline. In New Zealand, extension services have been partially privatised; and in Canada, spending cuts (in Alberta) or static budgets (in the rest of Canada) will constrain employment in these fields. Similar developments are reported in the US (Ayer 1993). Traditional farm management work, the interest by the public sector in on-farm economic efficiency, will become a victim of this trend.

These developments reflect the fact that the public interest in increased food supplies has run its course. In North America, less than 20 per cent of disposable income is spent on food in all forms. It is therefore not surprising that the land grant college of agriculture system of teaching, research and extension is in trouble and that university programs which continue to focus on these traditional areas are suffering financially (Just and Rausser 1993, McClatchy 1993).

But there are new opportunities. Within agriculture, promising areas are international trade, food safety, environmental protection and conservation, and animal welfare. Outside agriculture, but bearing disciplinary similarities, lie health and general education.

International Trade

Canada, the US, New Zealand and Australia all produce surpluses of at least some agricultural products and have interests in international trade. A new GATT agreement was signed in April 1994. There are major changes for agricultural trade including reduced subsidies, increased market access, tariffication of quotas and a sanitary and phytosanitary measures agreement, (Hillman 1994, and GATT 1994). There will be work for economists in dealing with the implications of the agree-

ment and in dealing with the settlement of disputes which arise between members. Agricultural economists will have opportunities in this area but may be recognised primarily as trade economists.

Food Safety

Food safety has replaced food security as an issue. In recent years, there have been 'scares' about spray residues (alar) on apples in the US, about synthetic hormones in fluid milk (bovine somatotropin) in Canada, and sanitary standards in slaughter houses in New Zealand (*vis a vis* the US and the EC), among others.

The current concern for the use of bovine somatotropin (BST) to increase milk production demonstrates the issues. Research has shown that the daily injection of a synthetic form of this naturally occurring hormone of lactating dairy cows increases their milk production by up to 40 per cent in mid lactation and by between 10 and 25 per cent over the full lactation (Cyanamid 1986). However, because the material injected is produced using a bacterial gene cloning biotechnology, consumers are concerned about residues in the milk they consume. Instant media coverage, particularly from television, informs millions of people in seconds of the point of view of the presenter, for good or ill.

The dairy industry would like to use the material. The biotechnology industry wants to produce it and have the farmers use it. The economics favour the product's production and use. However, because BST occurs naturally, the problem of consumer concern cannot be addressed by the regulation of the quantity of residue. Dual labelling of milks is being considered in Wisconsin (Western Producer 1993), but whether or not this approach is a solution will depend upon the integrity of the systems of separation of milk from BST supplemented cows from that of other cows.

The role of economists in dealing with such issues is clear only to the extent that in economics is involved in producing BST and using it on dairy farms. Some concern could be given to the oppor-

tunity costs of not using the product, but the area of consumer *beliefs* is generally outside our professional purview.

Environmental Management and Resource Conservation

This is an area of great possibilities though *agricultural* economists may be known as environmental economists in this field. In this area there is a clear comparative advantage for all those with training in resource economics over others.

There is much concern, a good deal of it by special interest groups, in environmental management and resource conservation. Governments will increasingly be in need of adequate assessments of the benefits and costs and opportunity costs of alternate policy options. These evaluations will be needed to establish in some cases compensation where previously existing rights are extinguished or reduced such as in forestry in British Columbia. Other important areas are manure disposal and ground water contamination, salinity, discharge of sediments, spray damage, and chemical disposal.

The opportunities in this area are not without their challenges. Externalities are common. Resolution of social conflicts is important and new institutions need to be devised. But there are opportunities for theoretical and practical developments. As professionals well-experienced with addressing practical issues, *agricultural* economists will do well in these areas even if there is a tendency to refer to them as resource economists or environmental economists.

Animal Welfare

Urban consumers, and special interest groups, encouraged by media attention, are increasingly concerned with animal welfare issues. It is more prevalent where indoor rearing of livestock and poultry is practised. Australia and New Zealand have largely escaped this criticism though it may raise its head in international sanitary negotiations affecting those two countries. This does not appear

to be an issue for economists to address except for its international trade implications. The microeconomics of livestock husbandry will be involved but not on a large scale.

Health

Health has replaced food and shelter as the leading issue in the developed countries. This is a consequence of the successes in the physical and biological sciences in agriculture and of medical sciences in health since the 1950s as well as rising standards of living. Particularly important are increased life times and increased life expectancies.

People in the developed countries have an increasing obsession with their health. Accordingly, health services have become the number one public issue in all four countries considered and will become more so. There is widespread debate about alternative mechanisms for health service delivery.

In New Zealand, user fees have been increasingly used. A user fee for hospital use has failed. In Canada, persistent tax revenue shortfalls are threatening 'universal' public health care coverage and user fees are being debated. In the US, the insured-user pays policy is being judged as inadequate (in terms of coverage) and a compulsory pay-roll tax approach to the problem of extending health service delivery is being debated.

These kind of problems are amenable to microeconomic analysis as employed by agricultural economists. There are a lot of opportunities in an expanding field. Government will need and continue to need competent and practical advice on all aspects of health delivery well into the next century.

General Education

Opportunities in this area are less in education in the traditional sense of school and university, and more in the area of evolving source of lifelong learning. These include the traditional sources, but are moving towards educational television, con-

tinuing education programs of high schools and universities, and effective use of the broadcast and computer media.

There will be a continuing need for instruction of the young in matters related to the food and fibre supply in grade (primary) and high schools. Undergraduate instruction in the economics of agriculture and other primary industries will need to continue. But the number of graduates specialising in *agricultural* economics is likely to decline. The traditional education industry will have to make adjustments to this part of the market and look for opportunities elsewhere.

One of these opportunities is video production and television. The profession could develop a substantial market for information about the environment, food and fibre supply and natural resource management and conservation policies. Further opportunities lie in lay-person publications and "op-ed" pages of major daily newspapers (McClatchy 1993).

4. Implications for the Profession

Substantial changes are occurring in the markets in which agricultural economists do business, whether it be teaching, research, or extension in the public sector or in providing services in the private sector. These changes reflect the substantial fulfilment of the original public interest in agriculture supplying an increasing amount of food. New public interests have arisen and the profession needs to adjust.

University departments of agricultural economics will be under continuing financial and administrative pressures to move in the new directions identified above. These pressures may give rise to consolidation of activities with others on university campuses.

Changes in the names of departments will be made to reflect the new focus. The appendix provides an indication of the changes already made. Only four of eight Canadian universities retain the title 'Department of Agricultural Economics'. In the US,

nine of fifteen land grant colleges have departments with other names. In New Zealand, both universities offering agricultural programs have changed names. In Australia, only one university still has the name 'Department of Agricultural Economics'.

In universities 'agricultural economics' is thus less used than previously. Surviving titles are likely to be in the faculties of commerce and business administration, in economics, and in natural resource sciences. Agricultural economics is also likely to be affected as agricultural faculties are consolidated to fewer locations.

In government, there will be increasing privatisation of extension services and less services provided to farmers as a result. There will be an emphasis on trade, particularly in New Zealand, Australia and Canada. Agricultural economists may, however, be employed in ministries and departments of international trade rather than of agriculture. Ministries of agriculture and food will be increasingly concerned about food safety and environmental management and conservation. Specialist ministries could also develop.

In the private sector, there will be an expansion of the market for farm management extension. This will be increasingly financial in orientation with a challenge in delivery coming from accounting and other financial sector firms. There will be some opportunities for specialised consulting to government, farmers and farm institutions, although their needs are increasingly going to be met from large consulting organisations capable of reaching major data sources quickly and processing these data effectively and in delivering their recommendations in a timely manner.

Another implication of these changes lies in what they mean for the professional associations. The present debate in the American Agricultural Economics Association (AAEA) provides an example. This debate concerns the name of the association (AAEA 1993c). A survey of members conducted in spring 1993 obtained 1,100 responses. Preferred names were:

Agricultural Economics (no change)	26 per cent
Applied Economics	17 per cent
Food, Agricultural and Resource Economic	13 per cent
Agricultural and Resource Economics	12 per cent

These percentages reflect the perceptions and preferences of those of the 1993 membership of the Association who responded.

These results were discussed at the AAEA Annual Meeting in August 1993. The conclusion reached was that 'neither survey results nor interested member comments gave a clear signal to the AAEA Executive Board regarding follow-up action' (AAEA 1993b).

5. Conclusions

This review of the trends in the economies of Canada, the United States of America, New Zealand and Australia has identified several factors affecting the future of the agricultural economics profession. It has identified some opportunities for future action in the 21st century:

Continued population increases, even at reduced rates, will provide a continuing market for the outputs of agriculture and provide work for some agricultural economists.

Population increase is a major cause of many of the so-called environmental problems governments and others are now being asked to address. It is now time to address the issue of population increases in a sustainable future and to address the economics of steady-state populations.

The public interest in these countries has moved from the provision of an increasing food supply for a growing nation. This rationale is no longer a sufficient basis for continuing public funding research and development in government or in agri-

cultural universities; nor is it a useful area for further development by agricultural economists.

International trade is an area of importance for all four countries. The recently established GATT (WTO) agreement presents an opportunity for increased global trade. This is a growth area for agricultural economists.

There is a public interest in the areas of food safety, environmental management and conservation, and animal health. It is not immediately obvious that there are opportunities for economists in food safety and animal welfare issues, though they will likely be areas of increasing regulatory intervention.

The area of environmental management and resource conservation presents opportunities for applied economists. Sustainable development needs much additional work and clear thinking about the concept and its application. Agricultural economists can help.

Traditional areas of agricultural economics, such as farm management, are unlikely to be as well supported publicly as in the past.

There will continue to be opportunities in the health and general education fields. Some of the opportunities will continue in the traditional areas of the school and university systems. These will not be growth areas. Potential areas of growth are in video and computer media.

Agricultural economics as a recognisable area of specialisation may not last into the 21st century. However, agricultural economists will be likely to find opportunities for service and rewards in some of the new areas identified in this paper.

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Appendix: Major Institutions and their Relationship to Agricultural Economics

Institution	Name
Canada	
McGill University, Montreal, P.Q.	Department of Agricultural Economics
Nova Scotia Agriculture College	Department of Economics and Business
University of Alberta	Department of Rural Economy
University of British Columbia	Department of Agricultural Economics
University of Guelph (Ontario)	School of Agricultural Economics and Business
Universite Laval (Quebec, P.Q.)	Department d'Economie Rurale
University of Manitoba	Department of Agricultural Economics and Farm Management
University of Saskatchewan	Department of Agricultural Economics
United States	
Colorado State University	Department of Agricultural and Resource Economics
Cornell University (New York)	Department of Agricultural, Resource and Managerial Economics
Iowa State University	Department of Economics
Kansas State University	Department of Agricultural Economics
Michigan State University	Department of Agricultural Economics
North Carolina State University	Department of Agricultural and Resource Economics
Ohio State University	Department of Agricultural Economics and Rural Sociology
Pennsylvania State University	Department of Agricultural Economics and Rural Sociology
Purdue University (Indiana)	Department of Agricultural Economics
Texas A & M University	Department of Agricultural Economics
University of California-Davis	Department of Agricultural Economics
University of Florida	Department of Food and Resource Economics
University of Georgia	Department of Agricultural Economics
University of Minnesota	Department of Agricultural and Applied Economics
University of Wisconsin	Department of Agricultural Economics
New Zealand	
Lincoln University	Department of Economics
Massey University	Department of Agricultural Economics and Business
Australia	
Federal Government	Bureau of Agricultural and Resource Economics
La Trobe University	Department of Agricultural and Resource Economics
Monash University	Department of Economics
University of Melbourne	Faculty of Agriculture and Forestry
University of New England	Department of Agricultural Economics and Business Management
University of New South Wales	Department of Economics and Management
University of Queensland	Department of Agriculture
University of Sydney	Department of Agricultural Economics
University of Western Australia	Department of Agricultural and Resource Economics

Sources: AAEA 1991, 1993a, 1993d; AAES 1994; Anderson 1993; Massey University 1993.