6 April 2012

Elegy, ode or panegyric: Australian agricultural economics in the last quarter of the twentieth century

David Godden

Department of Agricultural Economics, University of Sydney

44th Annual Conference, Australian Agricultural and Resource Economics Society
University of Sydney, 23-25 January 2000

Acknowledgments

This paper sought to be more than simply my own reminiscences of Australian agricultural economics in recent decades. I therefore depended on obtaining information from many colleagues who have generously provided the information on which this paper is based. Further comments, especially by completing the surveys (see Appendix) would be most welcome.

William Faulkner: "The past is not dead and gone; it isn't even past."

William Deane: The past is never fully gone. It is absorbed into the present and the future. It stays to shape what we are and what we do."

both quoted in Tony Stephens (1999), "Waiting for the dinosaurs to die", *Sydney Morning Herald* 24 July, p.47.

1. Introduction

The Australian agricultural economics profession has begun its fifth decade. During its first four decades, it has seen the agricultural sector shrink from about 14 per cent of GDP in 1955-56 to about 3 per cent of GDP in the mid-1990s.[1] From its own intellectual resources, and borrowing freely from overseas, the profession has explained the reasons for this shift in its client base to farmers, policy makers and successive cohorts of students. Agricultural economists as a group[2] have strongly favoured a deregulated economy, arguing against agricultural marketing schemes in the 1950s-90s, and in favour of freer markets beyond agriculture, and particularly in labour markets. The profession has also been sceptical of other forms of government intervention, whether it is investment in infrastructure such as irrigation schemes or management of professions such as competency standards. Those agricultural economists who have remained in the profession have continued these crusades, arming successive cohorts of agricultural economists with techniques, skills and attitudes to battle the forces of darkness. The first quarter-century of the profession is recorded in Gruen (1986, 1998).

The dawn of a new millennium[3] is as good a time as any to take stock of the state of the profession. Despite its undoubted successes – whether through luck or skill – there are warning signs that the profession's fifth decade may not be as felicitous as its fourth. The profession is challenged by old disciplines seeking new horizons (e.g. geography), new disciplines – ecological economics, social science,[4] social ecology – and professionals in areas such as farm management and agribusiness who might formerly have called agricultural economics "home". Continuing financial pressures on its traditional homes – the universities educating its neophytes and the government departments and quangos employing many of its graduates – suggest the desirability of appraising the profession's present and its possible futures. This appraisal is conducted below as a standard economic analysis of a typical microeconomic problem. The framework utilised is that of induced institutional innovation, and the analysis proceeds wherever possible by hypothesis testing using empirical data. Where the standard Popperian model is dysfunctional, data-free opinions are freely reverted to.

2. The Profession

[1] Notwithstanding attempts by "near-economists" to include all "value adding" activities up-stream and downstream of agriculture to final consumer as "part" of agriculture, thus attributing to "agriculture" 50% or more of GDP. If only they thought to include all value adding activities on rural exports *after* these products left Australia, in which Australia's food and fibre industries might get to at least 100% of GDP.

[2] if the collective noun is a "marshall" of economists, then a "draft (draught?) of agricultural economists?

[3] as agricultural economists are largely numerate, this is obviously 1 January 2001 CE.

[4] See Bureau of Rural Sciences: "The social sciences explore individual and group behaviour and interactions. They cover a range of disciplines including psychology, sociology, public policy, demography, geography, political science, anthropology and history*." The footnote is "Economics is a social science but is outside the scope of the work of the Social Sciences Centre although we do work with economic research agencies where a multidisciplinary approach is required." [http://www.brs.gov.au/social_sciences/index.html accessed 12/01/2000]

Defining the Australian agricultural economics profession appears to be deceptively simple; but it is not. In professions which require registration for a practice certificate – e.g. law, medicine – or where there are dominant trade unions – e.g. political parties in politics – defining the profession simply requires access to the appropriate list of members. Since agricultural economics has deliberately adopted a laissez-faire attitude to membership as well as economics in general (cf. Sturgess 1993), defining the profession cannot be simply based on AAES/AARES membership. An interesting question, not able to be answered in this paper, is "where have all the agricultural economists gone?"[5]

Who is counted as an *Australian* agricultural economist has several dimensions. Is it sufficient for an agricultural economist to be an Australian citizen? Was an individual trained in Australia as an undergraduate or a postgraduate student? Has the individual worked in Australia for a "significant" period of time? Does the individual self-identify as an "Australian agricultural economist" or with the Australian agricultural economics profession – and if so, how do they so identify? How do we count individuals who work for extended periods outside Australia.[6] In an era of globalisation, the question hardly matters, if it ever did. But it is necessary to consider, however, even if only to place bounds on the present paper.

Who is counted as an Australian *agricultural* economist also has several dimensions. Are all individuals who have agricultural economics degrees – at either undergraduate or postgraduate levels – ipso facto agricultural economists? For those who began as agricultural economists but who have largely (or completely) become general economists,[7] have they ceased being *agricultural* economists and, if so, when? Were economists who never trained in *agricultural* economics, but who had undertaken important work in or relevant to agricultural or resource economics, or who had trained agricultural economists ever *agricultural* economists?[8] How nearly are resource economists to agricultural economics – both those who have done so in Australia over a long period of time, or overseas;[9] but, then what about resource economists who have never been near agricultural economics?

It seems easiest to determine who counts as an Australian agricultural *economist*, since it clearly implies economics training. However, until the mid-1980s, an Australian undergraduate agricultural economics degree was a New England exception, not an Australian rule. Many well-known agricultural economists had limited exposure to economics in their undergraduate degrees, and became economists through postgraduate training.[10] Some agricultural science graduates who undertook limited undergraduate economics training but never did postgraduate work practised as agricultural economists, especially in farm management. In the public service, significant agricultural economics units were managed by non-economists.[11] Further, with increasing specialisation, new related disciplines have emerged such as agribusiness which may

[5] on a rough estimate, as many as 2000 bachelors graduates in agricultural economics (including agricultural science graduates specialising in agricultural economics) could have graduated from the universities of New England and Sydney alone in the period 1950-2000. Even allowing for mortality, this number is approximately treble the Society's current membership.
[6] e.g. Jock Anderson, Alan Randall
[7] e.g. John Freebairn, David Throsby
[8] e.g. Clem Tisdell, Bob Gregory
[9] e.g. Jack Sinden as an immigrant in this class, and Alan Randall as an emigrant.
[10] Almost too numerous to mention. Clearly this covers the first two generations of agricultural economists – the founders (e.g. Keith Campbell) and the first generation they trained in agricultural science schools (e.g. Jock Anderson, John Dillon, John Longworth, Warren Musgrave).
[11] e.g. Charles King, a veterinarian, Chief of the Division of Marketing and Agricultural Economics in the NSW Department of Agriculture from 1947-70 (cf. Gruen 1986, 1998).

be taught within agricultural economics[12] or separately, especially in former Colleges of Advanced Education.[13] While farm management issues have continuing importance for those agriculture departments and consultants with continuing emphasis on farming, and with its own Australian Farm Management Society,[14] the discipline has largely disappeared as an academic discipline except in the former CAEs.[15] The development of resource economics as a specialised training occurred at La Trobe, Queensland and Sydney,[16] with resource economics units as optional courses in agricultural economics (e.g. New England, Sydney) or taught in agricultural or natural resource science or studies degrees (e.g. Western Australia, Queensland (?), New England, Melbourne).[17] The resource economics niche is increasingly under pressure from ecological economics (cf. Costanza and King 1999), with some practitioners forming an intersecting set. Rural sociology seems to have largely disappeared, especially in close intellectual proximity to agricultural economics,[18] but has been replaced by human/social ecology.[19] Regional development is also a developing focus.[20]

Having described who agricultural economists are, agricultural economics may be defined as the sum total of the journal articles, conference papers and books they write, the enquiries in which they participate, the teaching they do and the students they supervise, and the public debates in which they engage.[21] This definition is unsatisfactory, at least for those without an encyclopaedic knowledge of the economics literature. The scope of agricultural and resource policy has been defined with reference to the farming sector; its natural resource (including externalities), factor and produced input and service input markets; the downstream industries that assemble, store, handle, transport, process, export, wholesale and retail its products; and the interactions of these industries with the rest of the economy (Godden 1997, Figure 1). The

[12] e.g at New England, "agribusiness" still taught within the Agricultural and Resource Economics discipline in the School of Economic Studies despite creation of a separate School of Marketing and Management. (Internet search 1999)

[13] e.g. Bachelor of Business (Agribusiness), School of Natural Rural Systems Management, University of Queensland – Gatton College; Bachelor of Agribusiness, School of Business, Southern Cross University; Bachelor of Business (Agricultural Commerce), University of Sydney – Orange Agricultural College (now Faculty of Rural Management); Bachelor of Agribusiness (Farm Management) and Bachelor of Agribusiness (Marketing), Muresk Institute of Agriculture, Curtin University of Technology; Bachelor of Applied Science (Agribusiness), Department of Food Science and Agribusiness, Dookie College, Institute of Land and Food Resources, University of Melbourne; Bachelor of Systems Agriculture (Agribusiness), Faculty of Environmental Management and Agriculture, University of Western Sydney Hawkesbury. A discontinued Bachelor of Business (Agribusiness) with specialist agribusiness courses remaining in the Bachelor of Business (Marketing), Caulfield campus, Monash University. (Internet search 1999)

[14] cf. section 5.3 below.

[15] e.g. Bachelor of Agribusiness (Farm Management) , Muresk Institute of Agriculture, Curtin University of Technology; Roseworthy (farm management within Bachelor of Agriculture), Muresk, Gatton, Melbourne Colleges, UWA, Orange. (Internet search 1999)

[16] Bachelor of Agricultural and Resource Economics (no intake since 1997????9), La Trobe University; Bachelor of Natural Resource Economics, Faculty of Natural Resources, Agriculture and Veterinary Science, University of Queensland; Bachelor of Resource Economics (commencing 2000), Faculty of Agriculture, University of Sydney.

[17] The push into resource economics may be seen negatively or positively. Negatively, as mere academic imperialism, or as a desperate attempt to retain students and relevance with a declining agricultural sector. Positively, the traditionally close connections of agricultural economics with agricultural science provided a template for a discipline which married social and biological (and physical) sciences.

[18] one-semester course available at UNE in Discipline of Sociology in School of Social Science, Centre for Rural Social Research, Charles Sturt University (Wagga). (Internet search 1999)

[19] Bachelor of Applied Science (Social Ecology) or the Bachelor of Arts (Social Ecology), Faculty of Environmental Management and Agriculture, University of Western Sydney Hawkesbury; Faculty of Architecture and Planning, University of Melbourne. (Internet search 1999)

[20] e.g. Rural Social and Economic Research Centre, Central Queensland University; undergraduate courses in Geography and Planning, School of Human and Environmental Studies, UNE. (Internet search 1999)

[21] In the early stages of this work, Geoff Edwards commented that "to paraphrase someone, agricultural economics is what agricultural economists do". This, of course, is famously circular – which is odd. Logical fallacy is an infrequent companion of Geoff's – error perhaps, but fallacy rarely.

increasing focus on natural resources and environmental issues, independently of their impact on agriculture, has been an expanded dimension of agricultural economists' activities. Defined through its focus on these economic activities, the agricultural economics profession is thus that loose collection of individuals interested in analysing the economic relationships of these activities.

The Australian agricultural economics profession is, however, more than simply that collection of individuals interested in the economic processes identified in the preceding paragraph. Australian agricultural economists do not simply analyse these processes, but do so in a particular way. The Australian agricultural economics profession is – occasional dissenters notwithstanding[22] – a predominantly *neoclassical* economics profession. The key tenets of this neoclassicism are that individuals are utility maximisers, firms are profit maximisers, utility and production functions are sufficiently well-behaved to be either estimatable or to give rise to demand and supply relationships that are estimatable. Australian agricultural economics is, like its overseas counterparts, especially interested in *quantitative* neoclassical economics. Further, Australian agricultural economics is very strongly in the Popperian tradition of epistemology—that nothing can be known for certain, and that intellectual endeavour comprises the proposing of hypotheses which are tested against available empirical evidence.[23]

Major influences

Two interactions of major importance to the profession are those between economics and agricultural economics within Australia, and between agricultural economics in Australia and North America (principally the USA). In the former, the principal direction of *personnel* movement has been from agricultural economics to economics.[24] These individuals' degrees of retained interest in *agricultural* economics varied considerably, but in all cases there was a significant reduction in their involvement with agriculture. A similar bureaucratic shift occurred at the beginning of the period when some agricultural economists were recruited into the nascent Industries Assistance Commission.[25] The direction of *intellectual* influence during the period was strongly in the opposite direction. This influence is perhaps best illustrated by the impact of Gregory's (1976) partial equilibrium explanation of the effect of the development of the Australian mining sector on Australian agriculture via the exchange rate.[26] This argument was subsequently extended into a general equilibrium framework (Warr 1978) and ultimately into a computable general equilibrium framework using ORANI (e.g. Higgs 1986). This theme of work was subsequently reflected in ABARE's work in the 1980s on the effects of northern hemisphere agricultural protection in a general equilibrium context, and its 1990s work on the enhanced greenhouse effect in a global computable general equilibrium framework.

The effect of US agricultural economics on the Australian profession has been profound. Because of its sheer size, and the even larger size of the American economics profession, American agricultural economics has dominated Australian – and international - agricultural economics since the 1950s. A principal mechanism of this dominance has been the size and quality of output in the American agricultural economics journals. The written mechanism has been supplemented by a constant stream of Australian postgraduate students in the US which had

[22] e.g Stent (1976, 1995).
[23] Epistemology: theory (or theories) of knowledge; cf. section 8 below.
[24] By the beginning of the period, significant academic shifts had included Gruen (to ANU), Throsby (Macquarie), Parish (Monash). During the period, additional significant academic shifts included Freebairn (Monash, Melbourne), Quiggin (James Cook). K. Anderson followed Jarrett in retaining an agricultural economics presence within economics at Adelaide.
[25] e.g. Ron Duncan, Roger Mauldon.
[26] Other general economists who had a marked influence on and/or involvement in Australian agricultural economics included Peter Lloyd, Peter Warr, Peter Dixon, Alan Powell, Clem Tisdell.

begun with K.O. Campbell at Chicago in the late 1940s, and continued thereafter. This traffic had a minor influence on the US profession – e.g. through the occasional lifting of the American Agricultural Economics Association's PhD prize[27] – and employment of some Australian agricultural economists in US schools.[28] Australian agricultural economists have indirectly affected the US profession through the international research network.[29] A further mechanism has been the large numbers of Australian agricultural economists undertaking sabbaticals in the US. A more recent mechanism has been employment of American agricultural economists in Australia.[30] Despite the slightly greater plurality of the American economics profession, the American agricultural economics profession is dominantly neoclassical,[31] and this influence is reflected in the Australian profession. By contrast, the influence of the European – principally British[32] – agricultural economics profession has been small,[33] with a small number of Australians undertaking postgraduate training in the UK and small numbers of academics undertaking sabbaticals there, and even smaller numbers in Germany.[34] In recent years, small numbers of British agricultural economists have been employed in Australian universities.[35]

3. The Economic and Political Context

The evolution of the Australian agricultural economics profession in its second quarter century was partly a function of the world around it. The nature of this world – global, Australian, professional and local – played an important part in the profession's evolution. What it became was, in part, a function of what it did.

The 1975-2000 period opened in a period of global instability. The USA had withdrawn from Vietnam, retreating from a war which had scarred a generation of service personnel and non-combatants. The US's financing of its participation in the Vietnam War, and the first oil price shock of 1973, destabilised the global economy. Moderate levels of inflation occurred in the developed world, and hyper-inflation in many developing countries. The first enlargement of the then European Economic Community had occurred, and it was clear there would be further enlargement. Increased oil prices dramatically changed the economic influence of oil producers, especially those in the Middle East, and were set to affect the British economy. Japan's post-war economic transformation had been secured, and the Asian tigers (Singapore, South Korea, Hong Kong) were beginning to stir. China had endured its Cultural Revolution, its revolutionary leaders were passing,[36] and it was about to commence its controlled passage to a more market-based economy.

---

[27] possibly as many as six times (Piggott 1999 pers comm), including John Dillon, John Freebairn, Nick Piggott, Bob Myers.

[28] e.g. Julian Alston, Alan Randall, Brian Wright

[29] e.g. World Bank (Jock Anderson, Will Martin, Ron Duncan, Derek Byerlee), ICRISAT (Jim Ryan), IRRI (John Flinn), CIMMYT (Derek Byerlee, Jim Longmire), IFPRI (Phil Pardey) etc.

[30] e.g. Steve Beare at ABARE, Greg Hertzler, Laura McCann at UWA

[31] see section 8; the impact of K.O. Campbell's having undertaken postgraduate work at the University of Chicago in the 1940s, and his influence on training the first generation of Australian-educated agricultural economists (e.g. Parish, Dillon, Throsby) cannot be underestimated. Compare Gruen's (1986, pp.8,9) comments that "Chicago in those days was not as monolithic as it has become since" and that he found Chicago politically stimulating because of "its brand of conservative economics."

[32] probably because of that fine English tradition of not learning "foreign" languages but expecting "foreigners" to speak English.

[33] cf. Gruen (1986 fn. 19) "In the decade after World War II … For would-be agricultural economists a choice of an English over a U.S. course of further training would have been bizarre – given the research work being done in the two countries."

[34] whose profession has high numbers of English speakers.

[35] e.g. Donald MacLaren (Melbourne), Iain Fraser (La Trobe), Michael Burton (Western Australia); John Kennedy (now La Trobe) and John Wicks (now consulting) were recruited into UNE's APMAA project in the early 1970s.

[36] Chou En-Lai died in January 1976and Mao Tse-Tung in September 1976.

The global economic and political upheavals of the early 1970s were preceded domestically by the election of an Australian Labor Government in 1972, the least propitious time in at least a decade for the achievement of its ambitious social and political programme. This Government sought to be more independently assertive abroad (e.g. by withdrawing Australian service personnel from Vietnam)[37] and to re-orient domestic society and economy.[38] The legitimacy of this government was never accepted by the defeated Coalition, especially by the then Country Party, and the inability of the new government to control the Senate[39] led to a double dissolution election in 1974.[40] Its lack of government experience and thus political management expertise, its inability to manage a hostile Senate, and its inability to comprehend the deteriorating global economy or manage the domestic consequences, led inexorably to its overthrow.[41] Poor decision-making by the Government, coupled by manipulation of replacement Senators by two States, emboldened the Coalition to threaten to block Supply in late 1975 and the Governor-General was induced to dismiss the Government in November 1975. After Labor's dramatic 25% tariff reduction in 1974? in an attempt to seize control of the political and economic agenda, the subsequent Coalition Government reverted to the economic dogmas, such as protection all round, of its predecessors.[42]

The global economic turmoil of the mid-1970s was reinforced by the second oil price shock of 1978 and stagflation in the Western economies. These conditions provided the opportunity for a successful challenge to the Keynesian orthodoxy of the post-war years, represented politically by the Thatcher and Reagan ascendancies in the UK and USA respectively. Consequently – or coincidentally – the Western economies entered a long economic boom in the 1980s partly fuelled, like earlier global booms, by heavy US military spending to challenge the evil empire of the east.[43] Although the boom was punctuated by the stock market crash of 1987, sufficient had been learned from 1929 that the prevailing market economics orthodoxy did not preclude the publicly managed and/or financed bailouts that were necessary to maintain financial confidence.[44] In agricultural markets, the determination of the US Government to challenge agricultural protection in the European Communities intensified competition in global markets.

In Australia, the Coalition interregnum 1975-83 was succeeded by the Hawke and Keating Labor Governments. Partly by coincidence[45] and partly from conviction, the Labor Government substantially deregulated the financial sector and commenced labour market deregulation in key industries such as the waterfront. The Government widened the purview of the Industries Assistance Commission to include service industries (and merged it with the Inter-State Commission); this purview was further widened with the further merger of the Industry Commission with Bureau of Industry Economics and Economic Planning Advisory Council to create the Productivity Commission in the mid-1990s. In the early 1990s, the Commonwealth and States agreed to a review of national competition policy (Hilmer), and subsequently to the implementation of a National Competition Policy.

---

[37] This assertiveness had begun while in opposition – e.g. Whitlam's visit to China in 1971 which was denounced by the Coalition Government which had its fury eviscerated by news of President Nixon's dialogue with China.

[38] In 1972, for example, 40% of Sydney and Melbourne were unsewered (source).

[39] There was not a half-Senate election in December 1972.

[40] Even in 1999, a Liberal Prime Minister addressing a national conference of his Party continued to belittle the 1972-75 Labor Government despite the more recent Hawke and Keating Governments.

[41] It is intriguing that having never accepted the political legitimacy of this government's election, conservative politicians – up to a quarter of a century later – still feel compelled to demonise this government (e.g. Howard 1999, Greiner 1990) although this is partly mirrored by Labor politicians who criticise the Menzies era.

[42] There was little change in the average rate of manufacturing industry assistance 1974-84 (Godden 1997, Figure 13.4).

[43] Shades of Tolkien's Mordor, a cult-classic of the preceding decade.

[44] US Savings and Loans, major banks; this pragmatism was repeated in the 1990s with bailouts of leveraged financial institutions.

[45] the exchange rate crisis of 1983, and the Campbell enquiry into financial markets/institutions commissioned by the preceding Coalition Government.

Deregulation of the financial sector – particularly of exchange rate markets – had major implications for agriculture. Floating exchange rates accelerated the impact of macroeconomic conditions and policy on the agricultural sector, and directly exposed exporting firms – and, indirectly, farmers – to greater financial risks.[46] The High Court's *Mabo* and *Wik* decisions generated enormous political heat, but have had little practical impact on land ownership. Land rights decisions or legislation at the State (e.g. South Australia) and territory (Northern Territory) level have had greater impact on land ownership. Further, once the National Farmers' Federation had accepted the philosophy of deregulation (NFF 1981), agriculture became a relatively soft target for a Federal Government keen to demonstrate some progress in microeconomic reform. Additionally, corporatisation – often used as a first step in microeconomic reform – distanced government from negative consequences of unpalatable decisions. Regular IAC enquiries into wheat marketing, and the Commonwealth-States commissioned Royal Commission into Grain Storage, Handling and Transport, provided an impetus towards partial wheat industry deregulation which was continued into the 1990s. The collapse of the Wool Reserve Price Scheme in 1990 led painfully to the full privatisation of the wool stockpile in 1999. The Australian Wheat Board was privatised on 1 July 1999, and it is intended to deregulate the dairy industry on 1 July 2000. Despite National Competition Policy's having been convicted by rural and regional Australia as a major cause of economic and social disruption in non-metropolitan Australia, the Productivity Commission argued that, far from having a negative impact, there was an overall beneficial impact of competition policy reforms on non-metropolitan Australia.

The continued relative decline of the farm sector – although by about the mid-1980s this appeared to have bottomed out to about 3% of GDP – resulted in a similar decline in the demand for services by agriculture.[47] Even if the absolute demand for agricultural economics services in agriculture had remained static, increased demands from other sectors – particularly natural resources and the environment – shifted the relative demand for agricultural economists away from narrowly-defined "agricultural" activities. Even within agriculture, the eventual deregulation of statutory marketing – by IAC/IC/PC attrition (e.g. wheat), by happenstance (e.g. demise of wool's reserve price scheme), by exhaustion (e.g. dairy), or in the 1990s by the advent of national competition policy – shifted the relative demand for agricultural economists' services.

The rise to dominance of the free market/small government ideology typified by Reagan and Thatcher had little impact on agricultural economics and economists since this ideology broadly accorded with the public stance of many if not most of the profession.[48] However, the accompanying emphasis by deregulationist governments on "entrepreneurial" activity – and not just in agricultural markets but in institutions of governments such as agriculture departments and quangos such as universities – jolted agricultural economists in their own backyard, and in ways discomfiting to them. Thus, for example, there was increasing demand for agricultural R&D funds from "non-traditional" research providers (such as former public servants who had privatised themselves as agricultural consultants), and in areas such as marketing where agricultural economists did not necessarily have a comparative advantage, and perhaps not even the necessary skills. Reductions in the size of government were difficult to resist, especially since farming itself was in relative decline, and agriculture departments were unable to resist the trend – indeed, in some cases, they seem to have been especially singled out. The aggregations of government departments, nationally in 1988 and subsequently at the State level, also muted

[46] Farmers seduced into borrowing in international currencies became directly exposed to exchange rate risks.
[47] except where technological change had shifted the most efficient location of farm service supply from farm to related sectors.
[48] notwithstanding the constant refrain that neoclassical (agricultural) economics is "value free".

the importance of agriculture since, and both political and bureaucratic levels, the interests of agriculture were more directly competing for attention with those of other national resource industries.

4. The Literature

Perhaps as a reflection of their professional insecurity, agricultural economists have regularly reflected on their profession and its future. Campbell (1985), Gellatly (1985), Miller (1985), Freebairn (1985), Anderson (1985) and Standen (1985) reflected on various aspects of the development of agricultural economics in Australia. Many of their insights remain relevant today, even their criticisms of the current state of the profession despite most of their being in significant positions to influence the development of the profession in the last quarter of the twentieth century.[49] Gruen (1986, 1998) reminisced on his involvement in Australian agricultural economics 1947-72. McColl (1990) provided a snapshot of Australian agricultural education, including agricultural economics, in the second half of the 1980s. Presidents of the Society have frequently used their presidential addresses to make ex cathedra statements about the state of the Australian profession. Ahmadi and Brakey (1996) examined the Society itself using an industrial organisation framework, partly based on surveys of members and past presidents, and examination of the Society's files. Apart from the last-mentioned, few of the papers – apart from Anderson (1985) – use a structured economic framework to evaluate the reasons that the profession developed in the way that it did.[50] Despite the neoclassical credentials of the commentators, must use a combination of institutional analysis and reminiscence. The present paper seeks to examine the development of the Australian agricultural economics profession within a formal framework of induced institutional innovation.

5. Method—Induced Institutional Innovation

Ruttan (1978, pp.340-341) proposed that institutional structure could be modelled as the outcome of the interaction between the "demand" for and "supply" of institutional change. Demand and supply are not continuous relationships between price and consumption or production respectively, but are relationships among the benefits and costs of particular institutional structures. Forces for institutional change arise from changes in the benefits and costs of existing institutional structures. Forces for change may arise endogenously in an institution or industry as a consequence of "search" (i.e. research and development, including marketing) for improved technologies, changed demand for products, or improved institutional relationships. Change may also arise exogenously to an institution or industry following technological, demand or institutional change in other institutions or industries, and may be expressed *inter alia* in changes in factor or output prices. Exogenous institutional change may also arise from changes in government's willingness to supply particular services, fund particular activities (e.g. education) and any particular conditions government may attach to such funding, or in its demand for inputs (e.g. university educated workers).

Induced institutional innovation in agricultural economics in the period 1975-2000 has the characteristics outlined below.[51]

---

[49] Despite Freebairn's (1985) comments that agricultural economics is an essentially applied discipline which had contributed little to economic theory, at the same symposium Miller (1985, p.70) invented the "Walrus/Pareto paradigm".

[50] Using tongue-in-cheek econometrics, Anderson (1985, p.93) linked the size of the profession to an index of real farm income and the share of agriculture in GDP.

[51] I have attempted to collect relevant information for both sections 5.1 and 5.2 (see requests for information in the Appendix). A very small amount of information has been incorporated in section 6.

5.1 Educational sector

5.1.1 Universities generally. Following election of the Federal Labor Government in 1972, there was a rapid expansion of national government expenditure on education building on previous growth in the 1960s. Previous expansion of the university sector was augmented with development of the colleges of advanced education (CAEs). The rapid expenditure growth came under pressure with 1970s stagflation. The "binary" system of universities and CAEs came under ideological pressure from the national Labor Government of the 1980s, leading to the Dawkins "reforms" of 1988 and the unified national system which either created new universities out of CAEs, or led to former (parts of) CAEs being amalgamated into existing universities.[52] The introduction of HECS[53] in the early 1990s, and the subsequent introduction of three HECS "bands", reversed the abolition of university fees by the Whitlam Labor Government.[54] There was considerable emphasis on improving the efficiency of both teaching and research, especially through attempts (not always successful) to introduce performance indicators for both activities. There were unsuccessful attempts to establish a quasi market in university undergraduate places via a voucher system by the Howard Coalition. Ironically, and irrespective of the voucher scheme, the degree of bureaucratisation in universities increased monotonically throughout the 1990s.[55] Concomitantly, there was increased emphasis on entrepreneurial behaviour by universities which some institutions/individuals adopted with alacrity while others clung to the remnants of a gentler university society uncorrupted by such sordid influences.

5.1.2 University agricultural education. The traditional university providers of agricultural education continued peddling their wares during 1975-2000. The principal changes involved the end of the binary system in the following ways:

. amalgamations of CAEs offering agricultural education with traditional university providers. These changes included:

Gatton Agricultural College merged with the University of Queensland.
Orange Agricultural College merged initially with the University of New England along with the Northern Rivers CAE; following the divorce of that federation, OAC joined the University of Sydney and became the Faculty of Rural Management in 2000.
Riverina and Bathurst CAEs federated to form the new Charles Sturt University.
Hawkesbury Agricultural College federated with CAEs at Penrith and Campbelltown to form the new University of Western Sydney.
Agricultural colleges in Victoria (Burnley, Dookie, Glenormiston, Longerenong, McMillan) merged with the University of Melbourne.[56]

[52] This ideological pressure for the end to the binary system was not, however, exclusive to "social democratic" parties. For example, in the UK, a similar change occurred under a conservative government with conversion of the polytechnics into universities.
[53] Higher Education Contribution Scheme.
[54] At least in NSW, there are no course fees for domestic students in the TAFE (technical and further education) sector other than a flat annual Administration Charge which, for associate diplomas and above was $610 in 2000, compared to $4-6,000 p.a. for HECS.
[55] Through emphasis on nationally-monitored performance indicators in research and teaching, and competency standards for professionals. If experience at the University of Sydney is typical, performance indicators primarily emphasise pass (and thus progression) rates. An uncritical emphasis on *maximising* these indicators creates difficult-to-resist pressures for secularly declining educational standards, especially when funding is linked to performance measurement.
[56] The first Dean of the Institute appears to have wished to develop a land grant institution in the US tradition (cf. Falvey 1996).

Roseworthy Agricultural College joined the University of Adelaide.
Muresk Agricultural College joined the new Curtin University (of Technology?) as the Muresk Institute of Agriculture.

. the McColl (1990) report on agricultural education which emphasised consolidation of agricultural education in Australia, which occurred principally in Victoria, but not NSW, and following the more general post-secondary philosophy, stressed the articulation of tertiary education from TAFE to Ph.D.[57]

. demise of the School of Agriculture at La Trobe University, and absorption of its vestigial functions into business and science faculties;[58] and amalgamation of the Department of Agricultural and Resource Economics at UNE with economics, economic history and econometrics to form the School of Economic Studies.[59]

. increasing re-orientation of former CAEs to teaching "agribusiness" in place of "farm management", and increasing emphasis in the "traditional" universities to teaching resource economics together which agricultural economics.

. from the late 1970s, increasing emphasis in the "traditional" universities towards providing postgraduate training for students from developing countries; followed by a subsequent re-orientation at both under- and postgraduate levels for teaching and research in resource/environmental economics.

The above changes in agricultural economics and farm management can be understood in the context of the "exogenous" changes occurring within the university system generally, and the reduction in demand for agriculturally-specific education as the agricultural sector continued its relative decline within the economy especially with continued "corruption" in world agricultural markets. The emphasis on "agribusiness" arose from a continued reduction in the number of farms, especially a reduction in the number of profitable farms, and an increase in the management complexity of larger, generally more profitable farms. Further, the increasing recognition of the importance of input supply and supply chain management identified a role for agribusiness beyond traditional farm management. Heightened community awareness on environmental degradation and natural resource management increased demand for professionals with technical, economic, and multi-disciplinary skills in analysing and managing natural resource systems.

5.2 Demanders of agricultural economics graduates

The "traditional" employers of agricultural economics graduates were the specifically-agricultural agencies in the States and the Commonwealth. By 1975, all the States had followed the lead of NSW in both establishing a core policy group of economists in a metropolitan head office, and most had established agricultural economists in regional centres, either as "farm management" extension economists, or as analysts of regional issues such as evaluation of research findings, or analysts of more general regional problems. With the termination of the

[57] Notions of articulation vary from recognising that former study provides a means of entry into "higher" education even if formal entry requirements are not met, through to insistence that previous study in a subject area must be credited at a "higher" level (cf. McColl 1990, pp.48, 74).
[58] A somewhat odd history of the School may be found on the Web, including this gem: "In 1998, to reflect the inclusion of these new courses, the School was re-named the Department of Agricultural Sciences." [http://www.latrobe.edu.au/www/agriculture/history/history.htm accessed 12/01/2000]
[59] "The Department of Agricultural and Resource Economics was founded in 1957. It is now the premier academic centre for training and research in agricultural and resource economics in Australia …" [http://www.une.edu.au/febl/EconStud/DARE/#hist accessed 12/01/2000]

Commonwealth (later Australian) Extension Service Grant scheme in the early 1970s, state departments became less able or willing to support as strong a farm management extension focus. Increasing pressure on government budgets with the economic slowdown of the 1970s contributed to the slow attrition of economists in agriculture departments. State governments discovered the virtues of decentralising the head offices of rural-based departments to support employment in regional centres. NSW had flirted with this option in the late 1970s with the relocation of the mapping agency, and followed with agriculture, rural adjustment and western lands administration at the end of the 1980s. Victoria followed suit with an on-again off-again relocation of DARA.[60] Ultimately, the Commonwealth also "decentralised", with part of the Industry Commission moving to Melbourne, and threats of Treasury's being moved to Sydney.

The principal traditional national employers of agricultural economists were ABARE and the Department of Primary Industry. The Industries Assistance Commission, with emphasis in its work on quantitative economic analysis became another potential employer. (Agricultural) economists were occasionally employed by statutory marketing authorities,[61] and even less occasionally by RIRFs and RDCs.[62] With the major reorganisation of Federal government departments after the 1987 election, the amalgamation of primary industries and energy, and the corresponding amalgamation of the BAE and the Bureau of Mineral Resources forced a reassessment of resource economics. Because of quantitative expertise, agricultural economists moved into mineral and resources areas of the new ABARE, and it increasingly recruited outside agricultural economics (cf. ABARE History).

In the expectation that increasing commercial pressure would be imposed on utilities, some began to employ economists, including agricultural economists. For example, the NSW Electricity Commission (later Pacific Power) employed agricultural economists in the 1980sto evaluate the efficient allocation of resources within the utility. In the 1990s, Sydney Water (formerly the Metropolitan Water Board) employed (agricultural) economists.

The ideological movement towards smaller government in the 1980s resulted in continuing assessment of the "proper" functions of government. This movement was especially accelerated during the terms of Coalition governments in NSW (Greiner-Fahey, 1988-96), Victoria (Kennett, 1992-99) and national (Howard, 1996-date).[63] Some public sector (agricultural) economists took advantages of these opportunities by establishing consultancies (including sole proprietorships) focussing on a range of clients, including contracting their services back to government.

5.3 Professional organisations

While the AAES/AARES is the only professional society with "agricultural economics" in its name, the society has several competitors.[64] In the close-to-agriculture field, the Agribusiness Association of Australia and New Zealand, established in 1989, had in the mid-1990s "a membership close to 400, a majority of whom are non-academic agribusiness people" although

[60] Australian governments were less perspicacious than British governments, who had relocated *non-rural* agencies to the regions (e.g. social security to Newcastle; tax to Lancaster; and vehicle registration to Swansea). Regional location of non-rural agencies broadened the suite of employment options available to rural dwellers, rather than narrowly confining their options to rural-related agencies.
[61] e.g. meat (Bruce Standen, Mike Taylor), wool (Bob Richardson, John O'Connor), wheat (Tim Ryan, Dan Norton).
[62] rural industry research funds/research and development corporations: Jeff Davis and Jim Ryan at ACIAR; Davis subsequently at RIRDC; Violeta Espinas at AMLRDC.
[63] An apposite example is the rapid transformation of job-seeking support services from a Commonwealth Government function (Commonwealth Employment Service) through its corporatisation (Employment National ??) and competition with private sector employment agencies, towards provision by philanthropic and religious organisations 1996-2000.
[64] cf. Ahmadi and Brakey (1996) for a critical assessment of the then AAES.

[w]hether the AAANZ has gained membership at the expense of the AAES is unclear (Ahmadi and Brakey 1996, pp.202, 203). The AAANZ publishes a journal (now a Web-published journal) which includes "academic" articles. The Australian Farm Management Society, established in the early 1970s went into receivership in the mid-1990s. While the Australian Institute of Agricultural Science and Technology is primarily an agricultural science organisation, its mission statement clearly encompasses agricultural economics and related areas and, through its promotion of competency standards in agriculture, has rubbed up against the AAES/AARES (cf. Sturgess 1993).[65]

The growth of resource and environmental economics has been accompanied by establishment and growth of related societies.[66] In Australia, probably the most important is ANZSEE (Australia New Zealand Society for Ecological Economics), the local affiliate of the International Society for Ecological Economics, the publisher of *Ecological Economics*. Arising from its "transdisciplinary" nature,[67] ANZSEE tends to encompass a diverse range of individuals including influential economists. Ecological economics is partially reminiscent of that agricultural economics which arose from a combination of agricultural science and economics.[68] There is considerable mutual interest between agricultural and resource economics, and ecological economics. A principal ostensible difference is that AARES primarily acts a conduit for the analysis of agricultural and resource economics issues (e.g. by providing conferences and a journal), ANZSEE takes an activist stance in promoting "sustainability".[69] Viewed from *outside* the agricultural economics profession, however, where economics is viewed as proselytising for free market capitalism, the difference may be more apparent than real.

General economics societies, like the Economics Society of Australia, also cater for environmental and resource economists, especially those not affiliated with or not trained in an agricultural economics department.

6. Agricultural economics labour market

Based on the requests for information reproduced the appendix, an attempt was made to document the ways in which agricultural and resource economics has changed 1975-2000. To date, this endeavour has been largely unsuccessful as few organisations have collated the information in the form requested, and resources were not available to trawl through organisations' files even where access would have been granted. An indication of the way the results would have been presented is shown in the accompanying tables.

6.1 Supply

<u>Undergraduate teaching</u>

[65] cf. http://www.farmwide.com.au/nff/aiast/AIAST.htm#promo
[66] The AARES only included "resources" in its name in 1995.
[67] Ecological Economics is a transdisciplinary field of study that addresses the relationship between economic and ecological systems in the broadest possible sense. Ecological Economics goes beyond conventional conceptions of scientific disciplines and attempts to integrate and synthesise many different disciplinary perspectives in order to achieve an ecologically and economically sustainable world. [http://cres.anu.edu.au/anzsee/ANZSEE.html]
[68] cf. UNE-trained, and Sydney-trained in the last 15 years, who are primarily applied economists.
[69] At the founding meeting of ANZSEE, a member of the interim executive, and later the first executive, when quizzed on that article of the proposed constitution which indicated that support for sustainability was mandatory on all members, commented that it was only words in a constitution and nobody took any notice of constitutions. Interestingly, ANZSEE's constitution is not available on its web page [http://cres.anu.edu.au/anzsee/]

Undergraduate teaching in Australian agricultural economics 1975-2000 was characterised by both continuity and change. Continuity was manifested in the form of established degrees and programmes (e.g. agricultural economics at UNE), and the delivery of agricultural economics service courses in agricultural science programmes at most institutions. Change was manifested as new degrees in agricultural economics (Sydney, mid-1980s), an increased focus on agribusiness (especially in the pre-1988 CAEs), an increased focus on resource economics in agricultural economics programmes (e.g. UNE), agricultural and resource economics taught into new programmes in new natural resource management and environmental science programmes (most institutions teaching agricultural economics), and a new resource economics degree (Sydney, 2000). A declining agricultural sector, and particularly the agricultural sector slump from the late 1980s, reduced the demand for undergraduate places in agricultural economics, pressuring the quality of student intakes. Agricultural economics was in the vanguard of marketing its programmes to attempt to offset this effect.

A snapshot of agricultural, and agricultural economics, undergraduate teaching in Australia was provided by McColl (1990). There were approximately 500 students enrolled in agricultural economics in 1990 (of whom the bulk were in 4-year undergraduate degrees), and approximately 1,500 agricultural commerce students (of whom approximately two-thirds were in associate diplomas and one-third in 3-year undergraduate degrees) (McColl 1990, Figure 3.1). Approximately one-quarter of both these categories were employed in the public sector, half in the private sector, and half in "other" (McColl 1990, Figure 3.8).

Distinction may be drawn among the types of "agricultural economics" teaching offered in Australia (cf. Table 1). The degree from New England—and, since the mid-1980s, Sydney—are applied economics degrees specialising in agriculture and, increasingly, resources generally. Prior to the mid-1980s, agricultural economics was a stream in the agricultural science degree at Sydney, and a fourth year speciality in agricultural economics is still taught in this degree. Queensland offered an agricultural economics degree 1991-98. Through most of the 1990s, La Trobe offered a degree in agricultural and resource economics, and Queensland now offers a similar degree. Melbourne and Western Australia offer agricultural/resource economics within agricultural/resource science/management degrees. Most of the pre-1988 CAEs offer a small amount of agricultural economics (including farm management) within agricultural science/management degrees and, increasingly, developing new agribusiness degrees (or renaming old degrees "agribusiness").

Advances in computing from the early 1980s enabled a quantitative discipline like agricultural economics to more easily teach established computer skills (e.g. econometrics and operations research)[70] and to adapt new software (e.g. spreadsheets) to these purposes. Developments in information technology revolutionised teaching technology. Wordprocessors (and reductions in photocopying costs) made production of lecture notes and handbook easier and cheaper, including electronic production of drawings.[71] (These changes similarly affected production of research papers.) Development of hardware and software to replace physical image overhead projection with electronic projection has also had a major impact, although reliability and flexibility of presentation for teaching remain important issues. The possibility of replacing hardcopy notes and handbooks with CD-ROM or Internet versions will continue to affect teaching.

Changes in information and communications technology, especially the Internet, have already affected distance education, and are likely to do so increasingly. These changes may allow the

[70] and to accelerate developments in more easily used software in these areas.
[71] although accompanied by a replacement of secretarial labour by academic labour in what had previously been secretarial tasks.

substitution of information technology capital for bricks and mortar capital, and for face-to-face teaching labour and student contact with electronic contact, thus changing the relative values of distance eduction and face-to-face teaching modes. These changes will force a thorough reconsideration of the benefits and costs of different education modes. Indeed, the possibility of *global* distance education will challenge both the *existence* of domestic institutions, and the *types* of programmes offered. In the case of the latter, there will be increasing questioning of specialist education (e.g. in agricultural economics) as in Australia with more generalist undergraduate degrees as in the US, particularly given the technological dominance of the US and its numerical dominance in most disciplines including agricultural economics. These changes may also challenge the existence of Australia's essentially public tertiary education system.[72]

Although always the case, increasing numbers of agricultural economics graduates are not employed in or close to "agriculture". As an example, the Department of Agricultural Economics at the University of Sydney has recently attempted to record the destinations of graduates in the first year after graduation (Table 2). Even if not all – or, in some cases, not even a majority – of agricultural economics graduates end up with a career closely related to agriculture, this should not be a cause for concern. Agricultural economics graduates who have taken units of study in resource economics are generally equipped to work in those areas. More generally, there is now a range of "specialist" degrees – of which law is a spectacular example – where graduates are never likely to work as specialists in the field (e.g. in the case of law, as solicitors or barristers). Similarly, it should not be a concern that agricultural economics graduates gain employment in fields unrelated to agriculture. Especially if agricultural economics training exposes more, especially urban, students to the nature of Australian agriculture, it is likely to be to the benefit of agriculture if these students carry an understanding of agriculture into their work and personal lives.

Postgraduate training

Gruen (1986) raised the question as to *where* to do postgraduate training in agricultural economics – North America or elsewhere. A logically prior question is *why* do postgraduate training in agricultural economics, or any other field. Postgraduate training is a prerequisite for university staff, and other public and private sector organisations that undertake research.[73] There is, however, an element of self-interest in universities' urging students with bachelors degrees to undertake postgraduate training. Further, the kinds of changes that have been imposed on universities in the past decade – and are continuing to be imposed – will, to the extent that they contribute to the general lowering of standards of bachelors graduates, require students to undertake postgraduate study to become adequately trained. As noted above, the tendency of Australian universities to move towards the US model of a generalist undergraduate degree will increase the demand for postgraduate coursework teaching.[74] The benefits and costs

[72] For example, the ability of employers to discriminate amongst the increasingly large number of degrees from some 40 Australian degree-awarding institutions would be many orders of magnitudes greater if Australian students could easily study from any globally-offered institution about whose standards little information could easily be obtained.

[73] McColl (1990, p.32) reported that "Public sector employers are increasingly seeking experienced graduates, preferably with postgraduate training, rather than taking on graduates and training them in-house". This trend was probably occurring as a consequence of the restrictions on government spending noted above, and just preceded the decade when HECS was introduced, and then substantially increased, for undergraduate study, and subsequently introduced for coursework postgraduate study. The trend was presumably exacerbated by increased employment under short term contract in the public (and also the private sector) where employers would rationally wish for the best trained employee who can hit the ground running.

[74] Absurd contemporary changes are also occurring, such as the conversion of some specialist degrees to "graduate" degrees (e.g. medicine, dentistry, veterinary science) not because it is desirable for this training to be preceded by another degree, but because the "right" undergraduate students cannot be selected for entry. The first undergraduate degree then becomes an extremely costly filter for the subsequent specialist training. Coincidentally, use of another

of different modes of university education – or, indeed, of postgraduate education – appear insufficiently discussed as does the manifest desire of employers to demand too much of undergraduate training,[75] presumably to limit subsequent in-house training costs. There is little suggestion in the Australian context that employers are willing to pay a sufficient premium for postgraduate-trained agricultural economists, particularly where the increasing dominance of contract work may raise employees rates of time preference in considering the postgraduate training investment decision.

Postgraduate training, particularly of the coursework variety, is desirable for other reasons. Even without the possible decline in standards suggested in the previous paragraph, it may not be possible for agricultural economics students to acquire all the training, or at the level, they (or their future employers) desire in an undergraduate degree. Students who mistake their initial degree, for example choosing a three year economics degree rather than a generally more quantitative agricultural economics degree, may remedy this lack by postgraduate coursework. Agricultural science students may wish for more agricultural economics than is possible within a science oriented degree. Students who, by financial or geographical limitations, cannot undertake a specialist undergraduate agricultural economics degree may seek to augment their initial degree by postgraduate study.

Of course, it should not be too readily assumed that agricultural economics bachelors graduates will necessarily go on to postgraduate training in agricultural economics. Some may proceed to postgraduate training in economics (especially for advanced econometrics, or for accounting, marketing, finance) or for related training in management, insurance, law, planning.

Overseas students, particularly in postgraduate degrees, have become an increasingly important component of postgraduate training in agricultural economics, as in other disciplines. This importance has arisen because of a generally low domestic demand for postgraduate training, especially research training, in agricultural economics, because the availability of overseas or Australian government funded postgraduate places, and because universities have been able to charge full fees for many overseas students.[76]

Finally, there has been some change in the scope of postgraduate training which, in the short term, may prove problematic but may (although not necessarily will) strengthen surviving agricultural economics in the longer term. If Australian is undertaking a slow transition away from specialist undergraduate degrees in the British tradition and is moving towards the US model of liberal arts undergraduate degrees then – to the extent that there remains a demand for agricultural economics training – this will be an increasing demand for postgraduate coursework. To date the size of each postgraduate pool in agricultural economics at individual Australian universities has proved generally too small to offer the strength of postgraduate coursework offered in US schools. Despite several attempts, no coordinated national approach has been successful in combining the strengths of individual Australian schools to offer a formal national postgraduate training in agricultural economics by some form of distance education.[77] A concomitant change is the recognition that an undergraduate degree cannot provide training in all the skills that a research economist requires, and that research degrees of the British tradition

---

undergraduate degree shifts much of the cost of selection for specialist degree entry from the specialist degree provider to the student (in the form of HECS), the university (the cost of the initial degree not met by HECS) and the higher wastage rate (met the first degree provider).

[75] see, for example, McColl (1990, p.78) where recommendations are made for additional content of undergraduate degrees without specifying what might be omitted to allow this to be achieved.

[76] The last also applies at the undergraduate level.

[77] although individual schools may offer credit for units completed in other institutions.

were the emphasis was on a thesis project may be usefully augmented by formal coursework.[78] There is often little consideration of the optimal combination of postgraduate coursework and research training by apprenticeship but, rather, an assumption by particular individuals that their own training was optimal, and therefore subsequent training should perpetuate this form. Difficulties potentially arise in both forms: there appears to be greater emphasis on the research project in US Ph.D training, leading to a longer average time to completion; and the poorly-considered inclusion of coursework in British-style Ph.D training without recognition of the consequent impact on progress in the thesis which remains the sole assessment vehicle.[79]

6.2 Demand

An attempt was made to document the employment and/or recruitment of agricultural-economics trained graduates in Commonwealth (e.g. BAE/ABARE, Department of Primary Industry (and its successors), Treasury, Trade (and its successors) , SMAs, RDCs, IAC/IC/Productivity Commission, CSIRO) and for each State (agriculture/primary industry, natural resources, other) in the three snapshot years of 1975, 1985 and 1995. This proved unsuccessful. It was similarly intended to collect information on private sector employers in broad categories (farming, agricultural service industries, consulting). An indication of the type of information sought is presented in Table 3.

7. The body of the profession

An attempt was made to undertake an analysis of publications by Australian agricultural economists similar to that of Phillips (1975). Regrettably, this work could not be completed for the paper.

8. The soul of the profession

Throughout the last quarter of the century, the Australian agricultural economics profession has been faithfully neoclassical. The exceptions who have proved the rule include Stent (1976, 1995). At best, this faith has resulted in a coherent focus on research methods suitable for examining allocative efficiency problems in Australian agriculture. At worst, this dogma has resulted in an obsession with elegant answers to the wrong problem.[80] An example of the latter is the magnificent mania for CGE evaluation of the costs of greenhouse mitigation strategy, when clearly the issue has a game theoretic structure in two dimensions, against other countries and against nature.

Stent (1976, 1995) trenchantly criticised the methodology of the (Australian) agricultural economics profession. Stent (1976) explained the dichotomy between Popper – who "provided a logical methodology whereby we may approach objective truth" (p.2) – and Kuhn who argued that, even if Popper's epistemology is accepted, it does not explain the process by which scientists undertake their analysis (pp.2-3). Stent (1976) emphasised the difference between:

> . deductive ("normal") science—deducing predictions/conclusions from a set of shared assumptions (e.g. universal scarcity and Walrasian equilibrium), and comparing these predictions/conclusions against observations of the "real world"; and

[78] Of course, even in the "British" Ph.D, additional skills training including postgraduate coursework could be undertaken by the student voluntarily or demanded by the institution.
[79] This was exactly the situation the author encountered in a British university in the first half of the 1980s.
[80] The old joke of an econometrician looking for lost keys under a lamppost because that's where the light is.

. inductive science—which questions the form of the current paradigm.

Stent (1995) noted Popper's distinction between pure and applied science. Practitioners of the former always "sought through the critical testing of hypotheses, to expand the frontiers of knowledge". Applied science was, however, dismissed merely as "simply a search for power". Stent reviewed recent papers in the *Canadian Journal of Agricultural Economics*, one of whose authors claimed that there was "a distinct lack of seriousness amongst agricultural economists in following the falsificationist doctrine" (quoted in Stent 1995, p.5). The 1976 Stent rejected the Friedmaniac version of applied economics for an (agricultural) economics in which "the premises of the theory must be true" and where "the values of the paradigm must accord with my ethical values" (Stent 1976, pp.7, 15 respectively). The 1995 Stent contented himself with observing that, while "[a]gricultural economists may not be justified in calling themselves Popperian scientists":

> If the recommendations of agricultural economists can be shown, not in prospect but in outcome, to have led to the creation of a better society, however defined, then it is irrelevant whether it is a 'science' or not. (Stent 1995, p.8)

Stent (1976, p.13) identified what has become a more thorough-going critique of scientific method:

> All models of reality must be abstract, and to the extent that choices are made as to what variables are included or excluded from them they are not necessarily subjective. However, subjectivity does not necessarily entail falsity. It is a matter of philosophic debate as to whether 'reality is knowable or not—indeed it is a matter or debate as to whether there is such a thing as 'objective truth'.

Midmore (1996) reviewed the relevance of "postmodernism" to agricultural economics. Postmodernism is often explained with reference to "modernism" which, in the social sciences, is argued to have the following characteristics (Midmore 1996, p.4):

> . humanism—envisaging "a rational sovereign subject, able by use of abstract reason to distinguish a unique reality objectively through the medium of representational knowledge";
> . historicism—"which … invests great faith in progress through the application of science and reason"; and
> . elitism—"which dignifies technological experts and their instrumentalist approach, allegedly resulting in social control and domination".

By contrast, postmodernism "accepts and even rejoices in [its] diversity" of approaches (Midmore 1996, p.4).[81,82] One consequence of this emphasis on diversity is the emergence of "other, previously submerged, voices" (Midmore 1996, p.5). Echoing Stent, (Midmore 1996, p.6) argues that an important consequence of postmodernism has been "a comprehensive and vigorous review of the basic assumptions in previously complacent disciplines" although economics was argued not to have begun that programme "to any great extent". Midmore (1996,

[81] Some of this postmodern diversity includes semiotics; deconstruction (of language and texts); phenomenology ("direct investigation of the data of consciousness--without theories about their causal explanation and as free as possible from unexamined presuppositions--and to attempt to describe them as faithfully as possible", Encyclopædia Britannica 1999 Standard Edition, CD-ROM Version).
[82] Of course, as Midmore (1996, pp.7-8) noted, there has also been a diversity of economic approaches; cf. Throsby (1986).

p.15) concluded that "agricultural economics is already partly a postmodern discipline". I would argue similarly, but from a rather different perspective as outlined below.

A central element of the postmodern challenge for modernity seems to be the Berkeleyan challenge to realism. Because all we have is "sense impressions" of things, we can never ultimately know the things themselves.[83] A logical extension of this argument is that, since all we have is sense impressions and we cannot in principle *observe* an "Ultimate Truth" there is therefore no ultimate truth.[84] Since there is no ultimate truth, each person's observations of the world are equally valid.[85] Thus intellectual inquiry is not, and cannot be, a search for ultimate truth but is a series of "discourses" about each person's impressions of the world. There cannot necessarily be, therefore, a conclusion that there is one "right" or "correct" view of the nature of things such as economic phenomena.[86] To the extent that the post-modern view adopts this relativist agenda, it is equally susceptible to its own challenge to "modernism" – if there are no external references, there is no way of knowing that there is *not* a real world out there, and thus there is no way of knowing that each person's perceptions of the world *are* equally valid. The post-modern challenge is simply an *assertion* about the state of knowledge – i.e. that there is no "ultimate truth".[87]

Can post-modernism possibly have *anything* to do with the way (agricultural) economics is practised? The answer is, perhaps surprisingly, "yes". The post-modern view is – carried to its logical conclusion – that there are potentially as many views of the (economic) world as there are people (or economists) to observe it. For a "discourse" about the world to be more than a Tower of Babel, *some* rules are necessary to conduct an orderly discourse – for example, to decide on Japanese or English or Spanish as the language of discourse. It would be pointless for each individual to simply use an arbitrary language. Additionally, within a given language, there are "rules" or conventions as to what particular words or metaphors mean, even if these meanings are not precise and unchanging. There are, therefore, at least two levels of discourse – one level (meta discourse) to decide on the rules of discourse about the nature of the world, and a second level which is the discourse about the nature of the world itself or, at least, each individual's "sense impressions" of it. Similarly, in economics there is a set of rules for conducting

---

[83] Concisely expressed in two limericks:

Clearly part of an Oxbridge debate:
There once was a man who said, "God
Must find it exceedingly odd
To find that that tree
Continues to be
When there's no on about in the quad."
Cite to Lure of Limerick

To which the answer was posted:
"Dear Sir, Your astonishment's odd.
I am always about in the quad.
And that's why the tree
Continues to be.
Since observed by, Yours faithfully, God."

[84] Occam's razor is helpful here.

[85] However, in sense impression terms, we do accept that there are "wrong" sense impressions of the world. Thus, for example, some people are colour blind, and others wear spectacles to "correct" short or long sight; others may have their hearing "corrected" by a variety of aids. Further, these "sense impressions" vary with age – I certainly do not see as well as previously. Similarly, we do not *necessarily* accept that any individual's view of the world is equally valid. Thus, for example, we (generally) spend enormous effort with our children to develop their ability to distinguish between "right" and "wrong"; and we incarcerate individuals (both adults and some juveniles) who fail to act in accordance with society's rules of behaviour.

[86] An alternative view of post-modernism commences with the proposition that the modernist agenda asserts that the world is knowable and known and that, in particular, it has a deterministic mechanism, something like that of a (mechanical) clock. Thus, for example in economics, there is a set of economic relationships – such as supply and demand curves in a general equilibrium context – that exist in the world and determine how prices and quantities are set, and income is distributed. Postmodernism challenges this conception.

[87] A "naïve realist" view of the world – i.e. the view that there *is* a real world and it can be observed – has an interesting position within post-modernism. Within post-modernism, naïve realism asserts the existence of a real world which is knowable, and this view must be accepted on equal terms with the post-modern view that there is no real world.

"discourses" about economic phenomena. The set of rules generally taught to agricultural economics undergraduates – and probably postgraduates – is based on ideas remarkably similar to the Berkeleyan and post-modern positions. Suppose either that there is no ultimate truth or that, even if there is ultimate truth, there is no way of knowing what that ultimate truth is. This does not mean, however, that every possible view of the world is equally valid. It may be possible to categorically identify *untruth*. The Popperian version of epistemology is aimed to do exactly that. A set of rules is proposed which leads to the rejection of false null hypotheses. However, if a null hypothesis cannot be rejected, this hypothesis is not asserted to be true, but merely "not false" and becomes a tentatively reasonable explanation of "real world" phenomena. In its "purest" form, in classical econometrics, there is an elegant set of rules for rejecting null hypotheses based on the notions of Type I errors, and conventionally 95 or 99 per cent confidence intervals are selected as criteria for rejection of false null hypotheses. This classical implementation of econometrics implicitly relies on a preceding meta-discourse that (a) focuses on Type I errors, and (b) arbitrarily accepts that 95 or 99 per cent confidence intervals are appropriate criteria for rejecting false null hypotheses.[88]

The Popperian view of epistemology in (Australian) (agricultural) economics is primarily an objectivist view about economics. That is, what economists do is to observe the world, and explain the forces which apparently govern economic phenomena within this world, rejecting false null hypotheses about the state of the world. However, much Australian agricultural economics research and writing is about proselytising particular views of the world, cloaked in "conditionally normative" language.[89] For example, few studies of statutory marketing arrangements for Australian agricultural commodities conclude with "objectivist" statements that costs exceed benefits (or vice versa). Rather, these are generally interim conclusions which are then used to support arguments that, for example, statutory marketing arrangements – e.g. for wool, wheat, dairy products or dried vine fruits – ought to be terminated.[90] There is, therefore, an enormous gulf between what is taught as "appropriate" methodology to agricultural economics under- and post-graduate students, and the methodology that is widely practised in the profession.

As noted above, Stent (1995, pp.5-6) reported Fox and Kavinda as arguing that, at least in the sample of published papers they reviewed, there was a lack of commitment to the Popperian "falsificationist doctrine". Whether this neglect of the "falsificationist doctrine" is a general failing—or is simply an indication of human fallibility—is, perhaps, worthy of further study. If the former, then perhaps a consideration of professional behaviour in the context of the economics of crime (cf. Garoupa 1997) is merited, and (better) monitoring and enforcement procedures are required. The problem may be complex, however, if the profession has an *ostensible* requirement for falsificationist procedures, but in practice there is a prevalent *implicit* notion that falsificationist procedures are unnecessary in some or all circumstances, or these procedures are too costly to adhere to. In this case, formal adoption of such monitoring and enforcement would most probably lead to the neglect of these procedures as well as disregard for the falsificationist procedures that this monitoring and enforcement was designed to reinforce.

Postmodernism is important for at least two reasons. Firstly, agricultural economics graduates will increasingly interact with students trained in disciplines where an (uncritical) postmodernism has become rampant. They will need to know how to protect themselves professionally and intellectually against this challenge. Secondly, to the extent that postmodernism highlights unsatisfactory aspects of the epistemology and practice of neoclassical

[88] But cf. Bayesian econometrics.
[89] This assertion should have been informed by the completed analysis of section 7 !!
[90] In the 1960s and 1970s, this debate was constructed in terms of Marshallian surpluses but is now more likely to be conducted in terms of market failure and transactions costs.

agricultural and resource economics, teachers need to ensure that undergraduates on not over-enthusiastic in their expectations of the limits of their training.

An additional problem for neoclassical economics is its utilitarianism – its assertion that all choice can be reduced to how well off an individual feels from taking one action rather than another. Thorough-going utilitarianism founders on the problem of inter-personal comparisons of utility. The use of ordinal utility and revealed preference to escape philosophical objections to utilitarianism as practised, for example, in Pareto welfare economics founders in practice on neoclassical economists' frequent resorts to Marshallian surplus measures, or to the implicit assumption that "economic" decisions are separable from other kinds of decisions. Of course, one escape from the latter is to assert that individuals are thorough-going utilitarians, and to examine family and religious decisions, for example, in a utilitarian framework. Even thorough-going ordinalism founders on the difficulties of aggregating individual measures of welfare into a Bergsonian social welfare function.

9. Future prospects

The future of agricultural economics will the consequence of partly endogenous and partly endogenous variables. On the exogenous side, the future evolution of the Australian agricultural sector will affect the demand for those agricultural economists of an "agricultural" bent. The wide-scale dismantling of statutory marketing arrangements which, for decades, provided the bread and butter research and teaching of agricultural economists looks like coming to an end – although the ingenuity of future politicians to recycle past policies should never be underestimated. The temporary interregnum of undertaking research, teaching and policy advising on "national competition policy" is likely to be just that, although the previous caveat also applies. On the endogenous side, agricultural economists have realised that the gravy train could not continue forever, and have been assiduously reinventing themselves as various kinds of applied economists, especially in natural resources and trade. On the supply side, continuing changes to the funding and organisation of tertiary education may have a greater impact on the profession in the foreseeable future than changes to the demand for agricultural economics graduates.

References

Ahmadi-Esfahani, F.Z. and Brakey, J. (1996), "The Industrial Organisation of the Australian Agricultural Economics, Society", *Review of Marketing and Agricultural Economics*, 64(2), August, 197-215.

Anderson, J.R. (1985), Agricultural Economics in Australia: perspectives from academe, in Bearman, S. (ed.) (1985).

Bearman, S. (ed.) (1985), Agricultural Economics in Australia,, Proceedings of a Symposium to celebrate the 25th anniversary of agricultural economics at the University of New England, 23-25 September, 1983.

Campbell, K.O. (1985), Some Reflections on the Development of Agricultural Economics in Australia, in Bearman, S. (ed.) (1985).

Costanza, R. and King, J. (1999), "The First Decade of Ecological Economics", *Ecological Economics* 28(1), January, 1-9.

Falvey, Lindsay (1996), *Food Environment Education: agricultural education in natural resource management*, Crawford Fund for International Agricultural Research and Institute for International Development, Melbourne.

Freebairn, J.W. (1985), Professional Interfaces and Impact of the Profession, in Bearman, S. (ed.) (1985).

Garoupa, N. (1997), "The Theory of Optimal Law Enforcement", *Journal of Economic Surveys*; 11(3), September, 267-95.

Gellatly, C.C. (1985), Agricultural Economics in the State Government Sector, in Bearman, S. (ed.) (1985).

Godden, D. (1997), *Agricultural and Resource Policy: principles and practice*, Oxford University Press, Melbourne.

Gregory, R.G. (1976), "Some implications of growth in the mining sector", *Australian Journal of Agricultural Economics*, 20(2), 71-91.

Greiner, N. (1990), Speech to the 41st Federal Council Meeting of the Liberal Party of Australia, Brisbane, 24 October 1990.

Gruen, F. (1986, 1998) "A quarter of a century of Australian agricultural economics: some personal reflections", Discussion Paper 135, Centre for Economic Policy Research, Australian National University and *Australian Journal of Agricultural and Resource Economics*, 42(2), June, 177-89.

Higgs, P.J. (1986), *Adaptation and Survival in Australian Agriculture*, Oxford University Press, Melbourne.

Hilmer, F.G., Rayner, M.R. and Taperell, G.Q. (1993), *National Competition Policy*, Report by the Independent Committee of Inquiry, Australian Government Publishing Service, Canberra, August.

Howard, J. (1999), Closing Address at the Liberal Party's 47th Federal Council Hyatt Hotel, Canberra, 4 July.

McColl, J., Robson, A. and Chudleigh, J. (1990), *Report of the Review of Agricultural and Related Education*, volumes 1 and 2, Australian Government Publishing Service, Canberra.

Midmore, P. (1996), "Towards a postmodern agricultural economics", *Journal of Agricultural Economics* 47(1), January, 1-17.

Miller, G.L. (1985), Agricultural Economics in Canberra, in Bearman, S. (ed.) (1985).

Mylrea, P. J. (1990), *In the service of agriculture : a centennial history of the New South Wales Department of Agriculture 1890-1990*, NSW Agriculture & Fisheries, Sydney.

National Farmers' Federation (1981), *Farm Focus: the 80's*, Canberra.

Phillips, J. (1975), "A Subjective Evaluation of Resource Allocation within Agricultural Economics Research: 1958-73", *Review of Marketing and Agricultural Economics* 43(1), March, 52-56.

Plimer, I. (1994), *Telling Lies for God: reason vs creationism*, Random House, Sydney.

Ruttan, V.W. (1978), Induced Institutional Change, chapter 12 in H.P. Binswanger, V.W. Ruttan *et al*., *Induced Innovation: technology, institutions, and development*, Johns Hopkins University Press, Baltimore.

Standen, B.J. (1985), A Future View from Professional Practice, in Bearman, S. (ed.) (1985).

Stent, W R. (1976), "Critique of the Methodology of Australian Agricultural Economics", *Australian Journal of Agricultural Economics* 20(1), April, 1-18.

Stent, W R. (1995), "Sir Karl Popper 1902-1994: Falsification and Agricultural Economics", *Review of Marketing and Agricultural Economics*, 63(1), April, 3-8.

Sturgess, N. (1993) "Some Thoughts on Competency Standards", *Australian Journal of Agricultural Economics*, Vol. 37(2), August, 67-78.

Throsby, C.D. (1986), "Agriculture in the economy: the evolution of economists' perceptions over three centuries", *Review of Marketing and Agricultural Economics* 54(3), December, 5-48.

Warr, P.G. (1978), "The case against tariff compensation", *Australian Journal of Agricultural Economics* 22(2), 85-98.

Table 1: Undergraduate teaching

I t was intended to include information like the following in the table (a similar table would also have been completed for postgraduate teaching):

. degrees (e.g. agricultural economics, resource economics or some combination; agricultural/resource economics taught within an agricultural/resource science degree)
. numbers of students by degree (in total, or by year)
. destination of students on graduation

	Undergraduate teaching in agricultural economics		
Institutions(a)	1975	1985	1995
Pre-1988 universities			
Queensland	within agricultural science	within agricultural science	BAgrEcon: first year entry terminated 1998 BAgribus: first offered 2000 BNatResEcon
New England	BAgEc	BAgEc	BAgEc
Sydney	within BScAgr	within BScAgr	BAgrEc and within BScAgr
La Trobe	within		
Melbourne	within agricultural science	within agricultural science	within agricultural science
Adelaide	no agricultural economics	no agricultural economics	acquired agribusiness from Roseworthy
Western Australia	within	within	within
Pre-1988 CAEs (1)			
Gatton			
Orange			
Riverina			
Hawkesbury			
Burnley			
Dookie			
Glenormiston			
Longerenong			
McMillan			
Roseworthy			
Muresk			

Notes: 1. see text for post-1988 affiliation

Table 2: Destinations of Bachelors Graduates in Agricultural Economics, University of Sydney

	1995	1996	1997	1998
Finance (bank, insurance etc.)	8	5	7	4
Accounting				1
Stockbroking	1		2	
Non-agricultural service (nes), manufacturing, mining	11	1	2	5
Agribusiness	1	2	5	5
consulting	1			1
Lobby groups, political parties	1		1	1
Government				
Federal	2		1	1
State	3		4	
Further study	1		2	1
Temporary				2
Travelling	3	3	1	2
Unknown	18	45	11	11
Total	50	56	36	34

Source: these data were collected from graduates by staff on the Department from on-going contacts with students.

Table 3: Employers of Agricultural Economics Graduates

	1975	1985	1995
Public sector			
NSW			
Agriculture	37 all but 3 ag sc or ag econ	18 Head Office only	18 Head Office only
Natural Resources			
Other			
Private sector			
Consultant staffing based on permanent staff and pool of transitory professionals for peaks	work: mainly farm management; clients: mainly farmers; staff: mainly agricultural scientists with some agricultural economics training	work: shift to overseas focus on agricultural development, began policy analysis; staff: began employing agricultural economists	work: shift to resource economics; clientele: main client State government agencies; staff: recruiting one graduate per year, using holiday employment to assess potential employees; sub-contract to specialist 1-person consultants; no agricultural economics with postgraduate qualifications, prefer short course training

Table 4: Categorising Profession's Research – Agricultural and Resource Economics

	Theoretical	Puzzle Solving	Empirical
Q1 - Agriculture			
Q10 - General			
Q11 - Aggregate Supply and Demand Analysis; Prices			
Q12 - Micro Analysis of Farm Firms, Farm Households, and Farm Input Markets			
Q13 - Agricultural Markets and Marketing; Cooperatives; Agribusiness			
Q14 - Agricultural Finance			
Q15 - Land Ownership and Tenure; Land Reform; Land Use; Irrigation			
Q16 - R&D; Agricultural Technology; Agricultural Extension Services			
Q17 - Agriculture in International Trade			
Q18 - Agricultural Policy; Food Policy			
Q19 - Other			
Q2 - Renewable Resources and Conservation; Environmental Management			
Q20 - General			
Q21 - Demand and Supply			
Q22 - Fishery			
Q23 - Forestry			
Q24 - Land			
Q25 - Water; Air			
Q26 - Recreational Aspects of Natural Resources; Contingent Valuation Methods			
Q28 - Government Policy			
Q29 - Other			
Q3 - Nonrenewable Resources and Conservation			
Q30 - General			
Q31 - Demand and Supply			
Q32 - Exhaustible Resources and Economic Development			
Q33 - Resource Booms			
Q38 - Government Policy			
Q39 - Other			
Q4 - Energy			
Q40 - General			
Q41 - Demand and Supply			
Q42 - Alternative Energy Sources			
Q43 - Energy and the Macroeconomy			
Q48 - Government Policy			
Q49 - Other			

Source of subject listing: Journal of Economics Literature [http://www.aeaweb.org/journal/elclasjn.html#qhead, 22.11.99]

Appendix

1. Request to Academic Departments

Dear «greet»,

I am proposing to write a paper for the "New Millennium" issue (December 2000) of the *Australian Journal of Agricultural and Resource Economics* (see the call for papers in the Society's April 1999 "News & Views"). This paper will canvas developments in Australian agricultural and resource economics, picking up, in part, from where Fred Gruen left off with his paper "A quarter of a century of Australian agricultural economics: some personal reflections" (Discussion Paper 135, CEPR, ANU and *Australian Journal of Agricultural and Resource Economics*, 42(2), June 1998).

As part of this project, I would like to review developments in the training of agricultural and resource economics students since the mid-1970s. I would greatly appreciate any information you might be able to provide for your university relating to the issues outlined below. I appreciate the severe time constraints under which academics labour these days, and am loath to ask for such information. However, you and/or you colleagues are in a far better position to provide this information than I am to guess it! If you do feel able to contribute, I would be grateful for any information you can provide, even if it arrives in dribs and drabs over the next six months or so.

If this information is already available in some form – e.g. regular or occasional reports from the institution, or special reports – I would be grateful to be pointed in the direction of this material. Being sent a copy would be even better!

Should you feel that I should have requested (from you and/or others) information additional to that outlined below, I would be grateful for any suggestions for topics I might have overlooked.

The specific information I am seeking includes:

- annual numbers of bachelors, masters and PhD graduates since 1975 – if it's possible to discriminate between domestic and overseas students, this would be a bonus;
- changes to under- and post-graduate teaching since 1975 – e.g. new degree programmes, re-orientation of existing degrees (e.g. new subjects taught), new joint degree programmes or change in orientation of inter-faculty teaching, quantitative component of teaching;
- changes in focus of research degrees – e.g. increasing focus on resource economics;
- any information on the destination of their graduates (both under- and post-);
- impact of computers and information technology in teaching;
- changes to staff profile – e.g. staff numbers, age, qualifications, interests;
- changes in intra- or inter-institutional relationships – especially in the post-Dawkins period.

With my very great thanks for any assistance you may be able to provide.

Yours sincerely,

David Godden
Senior Lecturer

2. Request to corporate organisations

Dear «greet»,

I am proposing to write a paper for the "New Millennium" issue (December 2000) of the *Australian Journal of Agricultural and Resource Economics* (see the call for papers in the Society's April 1999 "News & Views"). This paper will canvas developments in Australian agricultural and resource economics, picking up, in part, from where Fred Gruen left off with his paper "A quarter of a century of Australian agricultural economics: some personal reflections" (*Australian Journal of Agricultural and Resource Economics*, 42(2), June 1998).

As part of this project, I would like to review developments in the demand for agricultural and resource economics students since the mid-1970s. I would greatly appreciate any information you might be able to provide relating to the employment of agricultural/resource economists in your organisation. I appreciate the severe time constraints under which professionals labour these days, and am loath to ask for such information. However, you and/or you colleagues are in a far better position to provide this information than I am to guess it! If you do feel able to contribute, I would be grateful for any information you can provide, even if it arrives in dribs and drabs over the next six months or so.

If this information is already available in some form – e.g. regular or occasional reports from the institution, or special reports – I would be grateful to be pointed in the direction of this material. Being sent a copy would be even better!

Should you feel that I should have requested (from you and/or others) information additional to that outlined below, I would be grateful for any suggestions for topics I might have overlooked.

The specific information I am seeking for the period circa 1975-date includes:

- changes to staff profile – e.g. staff numbers, age, qualifications, interests;
- annual (average) recruitment of agricultural/resource economists – if it's possible to distinguish between new employees at bachelors, masters and PhD levels, this would be a bonus;
- changes in new recruits' desired knowledge and skills – e.g. macro vs. micro, resource economics, computer knowledge, quantitative skills, communication skills;
- changes in demand for and/or support for existing employees to undertake additional training – whether formal education (economics or other) or skills-based (computing, communications etc.);
- impact of computers and information technology in economists' work;
- changes to the form of employment – traditional permanent public service positions vs. fixed-term contract employment; metropolitan vs. regional vs. rural location;
- changes in emphasis in the nature of work – e.g. longer-term research vs. shorter-term policy advising;
- changes to the nature of economists' work – farming vs. related industries (inputs, marketing etc.) in the farm sector; agricultural research; natural resource management (catchment management, landcare); related natural resource industries (e.g. farm forestry, aquaculture); competition for natural resources (national parks, urban encroachment, water); intersectoral interactions with rest of economy;
- changes in intra- or inter-institutional relationships – e.g. relative to other government departments (especially in natural resources) or changes relative to private sector (e.g. consultants).

With my very great thanks for any assistance you may be able to provide.

Yours sincerely,

David Godden
Senior Lecturer

3. Selected individuals

Dear «greet»,

I am proposing to write a paper for the "New Millennium" issue (December 2000) of the *AJARE* (see the call for papers in the Society's April 1999 "News & Views"). This paper will canvas developments in Australian agricultural and resource economics, picking up, in part, from where Fred Gruen left off with his paper "A quarter of a century of Australian agricultural economics: some personal reflections" (*Australian Journal of Agricultural and Resource Economics*, 42(2), June 1998).

Two proposed aspects involve reviewing developments in the training of agricultural and resource economics students, and developments in the demand for agricultural and resource economics students, since the mid-1970s. Through your institution you may already have seen one of these requests, both of which I have appended to this letter for your information [see #1 above].

I am also seeking comments on the following from senior members of the Australian agricultural economics profession. I am interested in a critical review of the profession's development rather than a sanitised eulogy.

1. the adequacy of the training for undergraduate agricultural economists in Australia, and of postgraduate training both in Australia and overseas.
2. education vs. training for agricultural economics, in particular the appropriate emphasis for theoretical, quantitative and institutional aspects of (agricultural) economics and relationships with other disciplines (agricultural and resource sciences, sociology, politics, history).
3. whether or not there is still a role for (Australian) economists trained in agricultural and/or resource economics separately from training for economists in general – and, if so, why.
4. the impact of Australian agricultural economists on domestic and international policy debates.
5. the relative impact of Australian agricultural economists in the public and private sectors.
6. the impact of agricultural economists on the development of Australian economics generally.

Yours sincerely,

David Godden
Senior Lecturer