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THE AUSTRALIAN AGRICULTURAL ECONOMICS PROFESSION: AN APPRAISAL OF SOME CURRENT TRENDS*

FREDOUN Z. AHMADI-ESFAHANI and KYLIE A. BONNOR
*Department of Agricultural Economics, The University of Sydney,
New South Wales 2006*

Using the results of the first part of their 1994 membership survey, Ahmadi-Esfahani and Brakey (1996) examined the structure, conduct and performance of the Australian Agricultural and Resource Economics Society qualitatively. This paper extends that analysis by appraising some current trends in the Australian agricultural economics profession quantitatively. It concentrates on the second part of the survey to address a number of fundamental questions. A comparison of the US and Australian agricultural economics professions is made. The implications of the analysis for the product mix of the Society are explored.

Introduction

In a recent article, Ahmadi-Esfahani and Brakey (1996) presented the results of a central component of their 1994 membership survey investigating the organisational structure of the Australian Agricultural and Resource Economics Society (AARES). According to their analysis, while demand for the product mix of the Society appears generally strong, supply constraints are impinging on its performance.

The other component of the survey which was, in part, motivated by Just and Rausser (1989), sought to examine the current state of the Australian agricultural economics profession and to test whether or not the broad audience was effectively served by the product mix. More specifically, the second part of the survey asked members to describe quantitatively: how they devote their time across various activities;

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how the basis, type and length of analyses performed has changed over the course of their careers; different sources of conceptual thinking; sources of reports and forecasts, and outlets for completed analyses and how they have changed with career length; the difference between actual and ideal coursework emphasis at university; sources of effectiveness; the perceived current allocation of emphasis and desired emphasis by the *Australian Journal of Agricultural Economics* (AJAE), *Review of Marketing and Agricultural Economics* (RMAE) and AARES Annual Conferences.

While the qualitative research gave the AJAE and the RMAE strong support, members posed a number of concerns about both publications. They indicated that the AJAE was 'too theoretical', lacked 'relevance'; they wanted 'more resources' [resource economics], improved 'readability', 'agribusiness issues', 'more Australian issues', 'less mathematical modelling' and 'improved frequency and timeliness' (see Ahmadi-Esfahani and Brakey 1996, p. 200 and Appendix 1). With respect to the RMAE, members desired 'more policy', 'more marketing', 'more resources', 'more viewpoints', 'more international', more non-neo-classical', and 'more business' (see Ahmadi-Esfahani and Brakey 1996, p. 200 and Appendix 2).

Additionally, the overwhelming majority of respondents to this initial survey (80 per cent) thought it desirable to maintain both the AJAE and the RMAE as the publications of the Society (see Ahmadi-Esfahani and Brakey 1996, p. 202 and Appendix 3). Since reporting this finding, it was curious to note the decision at the 1996 Annual General Meeting in Melbourne to amalgamate the two publications to form the *Australian Journal of Agricultural and Resource Economics* (AJARE) in 1997. In view of the fact that financial considerations predominated the controversy surrounding this decision, the fundamental issues of how to optimally balance the inputs and outputs of the Society and how to better serve the diverse membership and broader readership are still to be addressed. We seek to make a contribution to this debate.

The purpose in this article is to report and analyse the results of the latter, and more quantitative, component of the 1994 Ahmadi-Esfahani and Brakey survey and to explore its implications for the Society. To that end, methods, data and procedures are first discussed. The results of the survey are then analysed and the trends in the United States and Australia are compared. Policy implications of the analysis are explored prior to concluding comments.

Methods, Data and Procedures

The methods used are similar to those embodied in Just and Rausser (1989). Namely, we undertook to replicate the statistical profile work reported for the American Agricultural Economics Association (AAEA) for the Australian Society. Accordingly, a database was formed using

responses from a sample of 106 (out of 535) surveys obtained by mail from a cross-section of members. This yielded a response rate of 20 per cent, which was considered reasonable, given the length and complexity of the survey. While the questions did not have a uniform response rate, follow-up responses were sought to reduce potential bias. Most questions required respondents to answer in percentages to facilitate empirical analysis.

Ordinary least squares (OLS) regressions were employed to quantify the desired percentage changes in emphasis by the AARES media, changing approaches with professional maturity, ideal coursework emphasis, and linkages among professional groups through professional media. The results reported further below are based on different numbers of observations within and across tables, with different degrees of freedom. The limited available data, most notably from industry members, did not allow replication of a table in Just and Rausser (1989) which explained the degree of influence and power in industry and government.

To address the underlying research questions, first the difference between members' ideal distributions and their perceived actual distributions across these categories were regressed against the extent to which each member's job responsibilities are academic research, extension research, other extension, teaching, industry, government research and other government activities. The estimated coefficients are reported in Table 1. A negative coefficient suggests that the members would prefer less emphasis than at present. The rows labelled 'all respondents' show the average percentage difference between ideal and actual distributions for the sample.

Then the different bases for analyses, types of analyses, and sources of effectiveness were regressed against the extent to which each member's time is devoted to academic research, extension research, other extension, teaching, industry, government research, and other government. The results are reported in Table 2. The associated dependent variables were the averages of the different time frames. Therefore, positive percentages imply that members migrate toward that base for analyses or type of analyses over their careers, while negative values imply that members move away from that base for analyses or type of analyses over their careers. The 'all respondents' column is the average across the sample.

Similarly, the ideal percentages for each of economic theory, econometrics/statistics, operations research, applications, and case studies were regressed against the extent to which each member's time is devoted to academic research, extension research, other extension, teaching, industry, government research, and other government activities. Additionally, the difference between ideal and actual coursework emphasis percentages were regressed against the independent variables just mentioned and are reported in Table 3. The 'all respondents' row gives the average values across the sample.

Finally, Table 4 was formed by regressing the percentage of activity associated with each of trade journals, AARES conferences, *AJAE*, *RMAE*, other economic journals, other agricultural economic journals that may be accessed, personal experience, and lay interchange for sources of conceptual thinking, sources of reports and forecasts, and outlets for completed analyses against the percentage of time devoted to various professional activities.

Various statistical tests including Durbin-Watson, Breusch-Pagan and NR^2 tests were performed on all OLS regression results. The test results are not fully reported here due to limited space, but will be available on request. Unsurprisingly, low raw moment R^2 reflect the limitations of cross-sectional data. While some regression results (for example, those reported in Table 2) are likely to have stemmed from misspecified models, the tests failed to provide conclusive evidence indicating the presence of autocorrelation or heteroscedasticity in the majority of cases. Generally speaking, most regression results appear robust and plausible.

Estimation Results

Table 1 suggests that, for the *AJAE*, all respondents as a group would prefer more current events assessment, problem definition, application of existing models, slightly more individual viewpoint and less new model development and descriptive analysis of problems. All groups wanted more current event assessment, while only academic and extension researchers wanted more development of new models. For the *RMAE*, the membership would prefer less application of existing models, development of new models, and problem definition, while they would prefer more current event assessment, descriptive problem analysis and individual viewpoint. This suggests that the membership of the Australian Society would like the *RMAE* to be even more applied and less focused on modelling than at present. For the AARES Annual Conferences, all respondents as a group wanted more new model development, problem definition, current event assessment, descriptive analysis of problems, and less individual viewpoint and application of existing models. However, it should be noted that the only professional groups that wanted more new model development were those involved in academic research and other extension. More groups would prefer less.

In summary, the membership feel that the *AJAE* is too focused on modelling and should include more current events, individual viewpoint and problem definition, the *RMAE* should be more applied and the AARES Annual Conference should have wider appeal with more new model development, current events and descriptive problems.

Table 2 appears to indicate that all respondents on average tend to rely more on collected and internal primary data sources than on understanding and experience over the course of their careers. This

trend is most apparent in extension research, teaching, and other government. In contrast, those involved in other extension and industry tend to rely more on understanding and experience over the course of their careers than on collected and internal primary data sources and published secondary data sources. Academic research professionals use more secondary data analyses over time than any other profession, teaching professionals use more primary data analyses over time than any other group, and other extension professionals use more understanding and experience over time than other professionals.

For the type of analyses, over time all respondents on average rely mostly on descriptive problem definition, formal original frameworks, and heuristic application, and far less on gut intuition and formal other frameworks. The use of formal original frameworks is particularly important over time for those in teaching, while heuristic application of principles grows particularly important for those in other extension, other government, academic research and industry. Teaching, extension research and other extension professionals have the greatest impact on type of analyses. Extension research and other extension professionals conduct more analysis using heuristic application, gut intuition and descriptive problem definition over time than any other professional group. Teaching professionals use more formal original frameworks over time than any other professional group.

For sources of effectiveness, what is immediately apparent is the increased importance of descriptive problem definition for those involved in other extension, industry, government research and other government activities. Also evident is the comparatively lower reliance on gut instinct for those involved in academic research and extension research. Teaching professionals find formal original and other frameworks more effective over time than any other group, other extension professionals find gut intuition and descriptive problem definition more effective over time than other professionals, and extension research professionals find heuristic application more effective over time than other professionals.

The overall results displayed in Table 2 reveal that the membership rely the most on descriptive problem definition and the least on gut intuition as career length increases for type of analyses and sources of effectiveness. Collected and internal primary data sources are a more important basis for analyses than understanding and experience over time.

According to Table 3, the results for ideal coursework emphasis are not uniform across professional groups. Those involved in industry and other extension activities would clearly prefer to be taught less economic theory, econometrics/statistics and operations research relative to applications and case studies. Members involved in government research and academic research would prefer graduates with greater exposure to economic theory and applications relative to other skills.

TABLE 1
Desired Percentage Changes in Emphasis by AARES Media

Professional Group	Application of Existing Model	Development of New Model	Definition of Problem	Current Events Assessment	Descriptive Analysis of Problems	Individual Viewpoint
AJAE						
All respondents	1.95	-1.46	2.59	14.07	-1.47	0.32
Academic research	-10.44	8.74	5.94	4.28	-2.33	0.25
Extension research	55.72**	49.73	5.89	13.88	-33.85***	8.61
Other extension	9.53	-26.34	-5.33	32.56**	-0.14	-11.06*
Teaching	-12.39	-8.36	-5.18	2.12	11.03	-0.73
Industry	-23.28**	-11.20	8.07*	37.69***	3.88	5.39*
Government research	-5.86	-11.64*	6.26**	4.84	7.96***	0.05
Other government	0.37	-11.12	2.47	3.09	3.14	-0.29
Degrees of Freedom	55	55	55	55	55	55
Raw Moment R-sqrd	0.30	0.22	0.20	0.43	0.59	0.13
RMAE						
All respondents	-7.81	-1.44	-1.62	8.65	0.53	2.53
Academic research	9.44	-0.72	-0.99	3.03	6.81	-4.15
Extension research	6.98	5.18	-2.04	-8.15	1.01	-1.93
Other extension	-1.86	1.14	-10.76	19.53	-3.04	-1.41
Teaching	-32.01**	-3.74	-1.36	12.73	-6.12	16.20***
Industry	-18.53**	-1.60	1.86	28.26***	-1.78	2.56

Government research	-13.46	-7.97	3.86	5.30	7.65**	1.76
Other government	-5.23	-2.38	-1.90	-0.16	-0.79	4.72
Degrees of Freedom	49	49	49	49	49	49
Raw Moment R-sqrd	0.25	0.09	0.06	0.31	0.14	0.21
AARES Conferences						
All respondents	-14.04	3.07	4.64	6.85	4.50	0.00
Academic research	-6.53	4.63	2.33	11.83	-1.95	-0.64
Extension research	40.59	-3.83	-32.92	-27.65	0.69	33.60
Other extension	-54.19	36.20	38.61	10.34	29.40	-50.99
Teaching	-50.19***	-1.23	13.59**	11.89	7.08	10.84
Industry	-19.57**	-3.62	4.92	35.19***	1.06	2.80
Government research	-4.58	-6.55	2.09	3.88	1.55	-2.61
Other government	-3.84	-4.14	3.84	2.45	-6.31	6.97
Degrees of Freedom	44	44	44	44	44	44
Raw Moment R-sqrd	0.33	0.08	0.27	0.42	0.06	0.15

* = 10% significance; ** = 5% significance; *** = 1% significance

TABLE 2
Changing Approaches with Professional Maturity
(Effects of Years since Last Degree on Percentage of Effort and Emphasis)

Dependent Variable	Academic Research	Extension Research	Other Extension	Teaching	Industry	Gov't Research	Other Gov't	All Respondents	Degrees of Freedom	Raw Moment R-sqrd
Basis for Analyses										
Secondary data	55.45***	40.42**	25.02	23.21	22.49**	37.43***	38.72***	34.68	52	0.75
Primary data	13.67	47.89***	17.59	80.58***	35.05***	30.39***	34.37***	37.08	51	0.73
Understanding	31.80***	14.62	54.51***	13.53	45.51***	34.75***	29.10***	31.97	51	0.73
Type of Analyses										
Formal original framework	34.05**	14.52	-25.93	60.54***	25.15**	28.75***	27.68***	23.54	45	0.66
Formal other framework	29.08**	29.56	-58.59	37.26**	6.63	19.19***	27.18***	12.90	45	0.59
Heuristic application	19.64	6.10	55.63	2.60	19.29**	16.48***	19.90***	19.95	45	0.39
Gut intuition	9.76	28.04**	17.81	-0.65	0.27***	16.13***	8.08	11.35	45	0.52
Descriptive problem definition	13.94	30.94	67.09	16.79	25.11***	22.14***	18.94**	27.85	45	0.52

Sources of Effectiveness

Formal original framework	26.69***	28.71	5.70	44.75***	22.34***	28.21***	24.88***	25.90	77	0.59
Formal other framework	25.60***	12.30	-6.10	32.31***	3.66	12.19***	9.41**	12.77	77	0.59
Heuristic application	15.62***	25.95**	25.52*	16.80*	9.96*	8.85**	16.53***	17.03	77	0.45
Gut intuition	7.93	11.93	26.21**	9.97	22.80***	11.82***	18.96***	15.66	77	0.51
Descriptive problem definition	23.45***	16.92	44.92*	11.63	38.26***	40.60***	28.07***	29.12	77	0.60

* = 10% significance; ** = 5% significance; *** = 1% significance

TABLE 3
Ideal Coursework Emphasis (Percentages)

Professional Group	Economic Theory	Econometrics/Statistics	Operations Research	Applications	Case Studies
All respondents	29.03	15.49	6.67	30.01	16.06
Academic research	31.03***	16.96**	4.21	38.60***	11.63
Extension research	49.39**	13.19	13.74*	1.83	30.11
Other extension	11.43	9.69	8.08	56.96**	9.99
Teaching	36.87***	28.38***	8.53*	25.97	-2.14
Industry	10.60	6.40	4.12*	29.59***	32.68***
Government research	24.74***	20.71***	6.48***	36.48***	9.97**
Other government	39.13***	13.14***	1.55	20.66**	20.19***
Degrees of Freedom	62	62	62	62	62
Raw Moment R-sqrd	0.72	0.66	0.45	0.61	0.46
Difference between Ideal and Actual Emphasis					
All respondents	2.77	0.06	3.57	3.28	7.23
Academic research	6.52	3.59	-4.22	16.62	8.15
Extension research	-3.06	-5.72	14.36	-42.51	16.02
Other extension	9.47	-0.84	7.81	49.56**	12.29
Teaching	0.45	2.57	8.14	-13.11	-3.26
Industry	-10.86	-6.35	2.41	7.65	18.47**
Government research	5.36	3.92	2.20	-4.54	-4.27
Other government	11.52	3.26	-5.69	9.32	3.19
Degrees of Freedom	64	64	64	64	64
Raw Moment R-sqrd	0.12	0.07	0.09	0.13	0.88

* = 10% significance; ** = 5% significance; *** = 1% significance

Those involved in extension research would prefer graduates with more exposure to economic theory and case studies relative to other subjects. Those involved in teaching would prefer recruits with more exposure to economic theory, econometrics/statistics, and applications than other subjects. Members involved in other government activities would prefer graduates with more training in economic theory, applications and case studies relative to other skills. Thus, the majority of professional groups would prefer more economic theory, applications and case studies relative to econometrics/statistics and operations research.

The results for the difference between ideal and actual coursework emphasis are non-uniform across professional groups. Those in academic research and other government activities want more emphasis on economic theory, econometrics/statistics, applications, case studies, and less operations research than they were taught. Members involved in teaching and government research would prefer more economic theory, econometrics, operations research, and less applications and case studies than they were taught. Respondents involved in extension research and industry would prefer more operations research and case studies than actually taught, while those working in industry would also prefer more applications and case studies. Respondents in other extension activities would like more applications, case studies and operations research than actually taught. Other government professionals demand the greatest increase in economic theory, industry professionals have the greatest impact on econometrics and case studies demanding less econometrics and more case studies. Extension researchers have the greatest demand for more operations research and other extension professionals demand more applications than any other group.

Interestingly, Table 3 reveals the current trend within the more theoretical professions such as academic research, teaching, government research, and other government activities. They appear to demand more training in economic theory and econometrics and less training in either/or operations research, applications, and case studies. In contrast, the more applied industry professionals would prefer to see less economic theory and econometrics taught along with more case studies, applications and operations research.

It is apparent from Table 4 that, for sources of conceptual thinking, personal experience and discussion with colleagues is the most important input for five out of seven professional groups. Extension professionals also rely heavily on lay interchange. The importance of personal experience, lay interchange, and other economic journals suggests that the Society publications and conferences may not have given the members all they require for conceptual ideas. Teaching professionals rely more on the *AJAE*, *RMAE*, annual conferences and personal experience as sources of conceptual thinking than any other profession. Industry professionals rely more on trade journals as a

TABLE 4
Linkages among Professional Groups through Professional Media
(Percentage of Activity Associated with Each)

Professional Group	Trade Journals	AARES Conferences	AJAE	RMAE	Other Economic Journals	Other Ag.Econ. and Agribusiness Journals	Personal Experience	Lay Interchange
Sources of Conceptual Thinking								
Academic research	7.53*	1.09	6.96***	2.94***	30.45***	14.52**	25.47***	5.36
Extension research	2.37	-0.64	0.00	-1.19	14.06	41.28***	12.84	18.69*
Other extension	24.60**	0.42	-0.24	1.42	-1.37	0.53	25.65	37.96***
Teaching	-2.64	9.66***	8.44**	7.22**	18.73*	16.55*	36.02***	5.18
Industry	28.87***	0.94	1.55	0.41	3.61	11.24*	32.55***	17.64***
Government research	4.43	6.52***	7.40***	6.41***	11.40***	14.12***	32.98***	13.27***
Other government	11.96***	8.00***	5.56***	4.15***	13.59**	8.45	32.79***	13.29***
Degrees of Freedom	81	81	81	81	81	81	81	81
Raw Moment R-sqrd	0.46	0.51	0.44	0.44	0.48	0.43	0.67	0.47
Sources of Reports and Forecasts								
Academic research	20.54**	3.53*	4.18**	4.38***	15.34***	9.10	23.06**	2.44
Extension research	26.91	2.02	2.07	1.42	12.45	23.43	21.22	-0.83
Other extension	41.32*	-0.90	-0.97	2.25	-3.48	8.98	22.72	25.70***

Teaching	32.60*	0.21	8.05*	1.76	12.92	21.44	31.58*	8.19
Industry	26.90***	0.54	-0.16	0.02	0.91	10.22	40.11***	8.85***
Government research	25.66***	2.90**	0.68	0.60	6.18*	22.14***	27.47***	9.15***
Other government	23.23***	3.44*	2.15	3.19***	3.10	12.58*	25.44***	0.80**
Degrees of Freedom	71	71	71	71	71	71	71	71
Raw Moment R-sqrd	0.52	0.23	0.21	0.34	0.33	0.41	0.58	0.47
Outlets for Completed Analysis								
Academic research	1.40	18.67***	4.95*	4.14	27.17***	17.22	16.34	7.34
Extension research	-4.96	-1.48	-0.82	-1.15	4.07	5.65	40.08	2.46
Other extension	54.77***	-0.78	-1.45	-0.26	-7.13	18.11	65.93**	84.35***
Teaching	8.45	-3.68	7.18	4.36	39.28**	29.47	6.61	6.54
Industry	18.62***	9.60	-0.37	0.87	9.93	11.66	23.05*	14.35*
Government research	2.11	14.85***	3.78*	5.73**	11.15*	27.19***	27.16***	9.76*
Other government	10.47**	15.80**	5.95**	2.73	3.21	28.32***	17.37	15.04**
Degrees of Freedom	72	72	72	72	72	72	72	72
Raw Moment R-sqrd	0.38	0.33	0.24	0.17	0.35	0.37	0.35	0.38

* = 10% significance; ** = 5% significance; *** = 1% significance

source of ideas than any other profession. Academic and extension researchers rely more on other economic and other agricultural economic/agribusiness journals than any other professional group. Other extension professionals use lay interchange as a source of reports and forecasts more than any other professionals.

The results for sources of reports and forecasts are quite different from those obtained from sources of conceptual thought. What stands out is the near equivalence on average of the importance of trade journals, annual conferences, and personal experience/discussion with colleagues. The most important source is trade journals and annual conferences. Also striking is how much smaller the remaining six categories are in importance compared to the most important two. Extension research, other extension, and teaching professionals rely most heavily on trade journals, while industry, and government professionals rely most heavily on personal experience. Other extension professionals rely more heavily on trade journals and lay interchange as sources of reports and forecasts than any other professional group. Academic researchers and teaching professionals rely more on the *AJAE*, *RMAE* and annual conferences than any other profession. As for sources of conceptual thinking, academic and extension researchers rely more on other economic journals and other agricultural economic/agribusiness journals than any other professional group. Industry professionals rely more on personal experience as a source of reports and forecasts than any other profession.

The results for outlets for completed analyses are not uniform across professional groups. Other extension professionals rely most heavily on trade journals, academic researchers and teachers rely most heavily on other economic journals, government professionals rely mostly on other agricultural economics/agribusiness journals, while most of the analyses of industry professionals and extension researchers is reported to other colleagues. Other extension professionals use trade journals, personal experience and lay interchange as outlets for finished analyses more than any other profession. Academic and government researchers and teaching professions use the AARES publications and conferences more than any other group of professionals, while teachers also use other economic journals and other agricultural economic/agribusiness journals as outlets more than any other profession. Interestingly, no professional group finds that its top outlet for completed analysis is either AARES publications or annual conferences.

On the whole, Table 4 shows the relative unimportance of the Society publications and conferences as sources of conceptual thinking, reports and forecasts and outlets for analyses. The AARES does not appear to be providing the membership with what they can obtain from rival societies and publications. The table indicates that the Society should address improving its publications and annual conferences. The reforms should respond to the needs and desires of the members as highlighted in Table 1.

Trends in the US and Australian Professions

The results for the *American Journal of Agricultural Economics* (*AmJAE*), as reported in Just and Rauser (1989), suggested that all respondents as a group wanted more problem definition and descriptive analysis published and less individual viewpoint and assessment of current events. Academic researchers preferred more individual viewpoint, while all other groups wanted less; academic researchers also wanted fewer applications of existing models, while industry would prefer more new model development. The Australian results are quite different. All professional groups wanted more current events assessment—not less. On average, the AARES membership also wanted more individual viewpoint—not less as the AAEA membership desires.

For the American *CHOICES*, the results were uniform across professions: all wanted more application of existing models, new model development, problem definition and current event assessment, and less descriptive analysis and individual viewpoint. The coefficients were highly significant compared to those for the *AmJAE* and AAEA Annual Meetings. The conclusion was drawn that the membership wanted *CHOICES* to move more toward an academic journal (Just and Rauser 1989). This is a complete contrast to the current trends in the AARES. The AARES results reported here clearly indicate that the members want the *RMAE* (the applied AARES journal) to become even less theoretical with more current events analysis, descriptive problem definition, and individual viewpoint.

For the AAEA meetings 'all respondents' would prefer more application of existing models, new model development, problem definition, descriptive analysis of problems, and less individual viewpoint. The preference for less individual viewpoint was uniform across the major professional groups (Just and Rauser 1989). While the Australian Society members would also prefer less individual viewpoint, they would desire less application of existing models and not more. The results reported for the AAEA were largely insignificant, not unlike those from the AARES survey.

For the US survey, in terms of basis for analysis, all professional groups moved away from using published secondary data sources toward using understanding and experience over the course of their career. There is a stark contrast between these results and those of the Australian survey in terms of the signs of the coefficients. The Australian results in terms of basis of analyses are almost all positive, whilst the AAEA had many that were negative. There are likely to be far fewer members involved in industry and other extension activities in the AARES compared to the AAEA. The difference in sample size (963 for the United States compared to 106 for Australia) may explain the difference between the American and Australian results.

For the types of analyses conducted, the AAEA membership survey found that for all respondents original formal frameworks and gut intuition on average received less emphasis over time, while formal other frameworks, heuristic application and descriptive problem definition received more. This trend was most apparent in teaching and other extension activities (Just and Rausser 1989). The Australian results are very different from the US results as the former are mostly positive.

For sources of effectiveness, the US results were largely insignificant, while Australian results were highly significant with many coefficients significant at one per cent. However, overall results of Table 2 (Just and Rausser 1989) showed that professional maturity was associated with declining formal analysis with secondary data and increased reliance on heuristic application of principles. The results support emphasis on case studies and problem definition.

For the AAEA membership survey, all respondents would prefer less economic theory, less econometrics/statistics, less applications, and more case studies. The greatest changes were desired by those involved in industry, government, and extension activities (Just and Rausser 1989). The magnitudes of the percentages for the AAEA are similar to those for the AARES. For the AAEA the signs of the percentages were uniformly negative for economic theory and econometrics for the difference between ideal and actual coursework emphasis. Unlike those for the AAEA, the AARES results were not uniform across professional groups. The more theoretical groups would prefer more emphasis on economic theory and econometrics, and less emphasis on applications, case studies, and operations research, while the more applied groups desire the opposite.

For sources of conceptual thinking, professional meetings were the main input media for all professional groups. Personal experience, lay interchange, and discussion with colleagues were important sources of conceptual thinking for the US membership; however, they are far more important sources for the membership of the Australian Society. The AAEA appears to make better use of its resources than the AAES—providing meetings and journals that the membership find more useful. This may be due to the much larger resource base of the American Association than that of its Australian counterpart. For the AAEA, the results for sources of reports and forecasts were very close to those obtained for sources of conceptual thinking—professional meetings were the primary input media, *CHOICES* was the second most important medium on average, and personal experience and discussion with colleagues appears important (Just and Rausser 1989). In contrast, the Australian results for sources of reports and forecasts are quite different from the results obtained for sources of conceptual thinking.

For the AAEA, the results for outlets for completed analyses indicated that most professional groups relied heavily on the AAEA meet-

ings and the *AmJAE*. The professional media were not effective outlets for industry professionals. The importance of trade journals as an outlet for academic research, and basic economic journals as outlets for industry and government was puzzling. It was surprising to Just and Rausser (1989) that *CHOICES* was not a very important outlet for the applied professions because *CHOICES* is the AAEA's applied medium. In contrast, for the Australian Society, no professional group relies most heavily on AARES annual conferences or publications as the most important outlet for analyses. What is surprising about the Australian results is how unimportant the *AJAE* and *RMAE* are to all professional groups as outlets for analyses.

This would appear to be the most serious of departures between the two professions which continues to require immediate attention. The new *AJARE* has the potential to reverse this trend by placing higher emphasis on versatility and by encouraging members of the profession to submit more applied pieces on contemporary issues. To that end, the editors and referees should be urged to exhibit more tolerance toward heuristic applications and articles on problem definition and individual viewpoint. It appears that the profession is likely to benefit from the breaking up of the virtual monopoly of the formal neo-classical philosophy and methodology underlying the current AARES publications, in particular the *AJAE*. It is time that other schools of thought were given 'a fair go' and that the AARES publication outlets became more contestable than is currently the case.

Implications

The AARES must not resort to kit solutions to problems. It must not isolate groups of professionals by implementing uniform solutions. This is because the results of the membership survey clearly show that different professions have different preferences. The current trend within the Society is for the academic research, government research, other government, and teaching professionals to demand more training in economic theory and econometrics/statistics and less training in case studies, operations research, and applications. In contrast, the more applied professionals in industry would prefer less emphasis on economic theory, econometrics/statistics, and demand more training in case studies and applications. Similarly, those members involved in extension research would also prefer to see less training in economic theory/econometrics/statistics.

The membership feel that the *AJAE* is too theoretical and that it would benefit from greater variety. Although the *AJAE* is seen as the more theoretical journal and the *RMAE* as the more applied, members would like to see the *AJAE* contain more assessment of current events and individual viewpoint as well as more application of existing models. This suggests a perception that the *AJAE* is out of touch with the real world, that it focuses too heavily on new model development,

and could improve by containing at least one current event article every issue. Members would also like the Society to make the *RMAE* more applied—with even more emphasis on current events, individual viewpoint, and descriptive problem analysis. This also coincides with the qualitative results from the first part of the AARES membership survey reported in Ahmadi-Esfahani and Brakey (1996). The most popular responses from this earlier work are that the *AJAE* is ‘too good’ and ignores non-perfect articles which could be of interest to members, it is too mathematical and too distant from agriculture, and it fails to address current issues in a timely fashion. Similarly, the *RMAE* is seen as becoming more academic and theoretical, it needs to be less theoretical, it could be more topical and readable, and it is not sufficiently different from the *AJAE*.

The heavy emphasis on econometrics and modelling in the AARES media isolates members involved in areas where these skills are not required or rewarded, forcing them to seek inspiration from other societies and journals. It has been argued by Just and Rauser (1989) that the weight given to mathematical modelling and quantitative economics in the agricultural economics profession has stifled creativity. The results of the second part of our membership survey reveal that descriptive problem definition, formal original frameworks and heuristic application of economic principles become more frequently used types of analyses over time than use of frameworks devised by others and gut intuition. Therefore, the importance of original frameworks implies that creativity does not appear to have been as stifled here as in the United States. However, the importance of descriptive problem definition and heuristic application suggests that many members do find the Society’s focus on mathematical or quantitative economics restrictive, providing further evidence of the need to overhaul the AARES publications and annual conferences.

Apart from addressing the AARES media, the importance of rival societies and their publications indicates the need to improve the public profile of the Society. One way of achieving this is to have spokespersons commenting on current events and current issues in the press. Promotion of Society activities and benefits, publishing the *AJAE* to a broader audience, publicity at economics conferences and ABARE Outlook Conferences are other member suggestions to rectify this situation (Ahmadi-Esfahani and Brakey 1996).

Clearly, then, there appears to be a wide gap between the current product mix of the Society and what would be optimally desired by the membership. While this gap does not entirely emanate from the policies of the AARES—the nature and structure of the academic reward system, as well as the postgraduate agricultural economics training, is also responsible for it—the leadership of the Society needs to deal with it urgently. Relaxing the set of self-imposed supply constraints identified here and in Ahmadi-Esfahani and Brakey (1996) provides an obvious point of departure to fill this gap. Major changes are necessary

to survive and to compete effectively in this diverse environment, and more change always demands more leadership.

Concluding Comments

Using the results of the first part of their 1994 membership survey, Ahmadi-Esfahani and Brakey (1996) examined the performance of the Society qualitatively. This paper has used the second part of the survey to examine the current trends in the Australian agricultural economics profession quantitatively. The results of this analysis appear consistent with the views expressed by members reported in Ahmadi-Esfahani and Brakey (1996).

The agricultural economics profession has a proud tradition of theoretical and analytical rigour. It has been the Society's tendency to focus on providing services targeted at members involved in professions where economic theory and econometric modelling are rewarded. The results analysed in this paper indicate the degree of diversity in the profession. Different professional groups have different desires and demands. For example, those in the theoretical professions such as research would prefer to see new graduates more experienced in economic theory and econometrics, while those in industry and the applied professions place more value on learning applications, case studies and descriptive problem analysis.

What is apparent from the quantitative analysis of the membership survey is that the *AJAE* and *RMAE* place too much emphasis on mathematical and quantitative economics and too little emphasis on applications, current events and individual viewpoint. The membership find that the publications and annual conferences are not important as sources of conceptual ideas, sources of reports and forecasts, and outlets for analyses. By comparison, the AAEA media are more important to the US profession as sources of ideas, reports and forecasts, and outlets for analyses than the AARES publications are to the Australian profession. The AARES does not, therefore, appear to have done as good a job as the AAEA in providing for the different needs of its members. This may, in part, be due to the much smaller size of the Australian Society.

Notwithstanding this possibility, the Society has a difficult task ahead in amalgamating its publications, as the new journal will have to keep the membership interested. The results of this analysis suggest the need to provide a journal with rigorous economic theory, econometric application, descriptive analyses, current events and individual viewpoints. It is important to respond to the needs of a diverse professional body when planning the format and content of the *AJARE* and to woo back discontented members from rival societies, while increasing the profile of the AARES.

The AARES Annual Conferences appear to constitute another effective forum to meet the diverse needs of the membership. Members

could potentially rely on these conferences as a major input in their thinking. However, the Council and local organising committees should ensure versatility in the program and, particularly with respect to invited papers, they should broaden the scope of the conference program by allowing more discussions of contemporary issues and non-conventional applications of economic principles. Debates should also become an integral component of the program.

Finally, and most importantly, to lead the Society to these and other requisite changes, the Council needs to develop a vision for the future of the profession along with strategies for producing the fundamental changes needed to achieve that vision. This calls for wider participation, discussions and debates by the membership, and communicating the new direction to those who can create coalitions that are committed to its achievement. Achieving a vision also requires motivating and inspiring by appealing to basic and often untapped professional needs, values and emotions of the membership. The current analysis, together with Ahmadi-Esfahani and Brakey (1996), may prove useful in this venture of setting a new direction for the AARES, and in institutionalising a leadership-centred culture in the Australian agricultural economics profession.

References

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