FORUM

A SUBJECTIVE EVALUATION OF RESOURCE ALLOCATION WITHIN AGRICULTURAL ECONOMICS RESEARCH: 1958–73

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INTRODUCTION

The function of economists is to evaluate the allocation of resources. Nonetheless, economists appear loath to evaluate the direction of their own efforts.[1] This is understandable for a number of reasons. *Enfants terribles* do not get chairs nor perhaps even research money. Also they may even start the controllers of the public purse asking awkward questions. Besides, the effort itself may not be worth its opportunity cost. But, since other disciplines are going through periods of self-criticism, it might behove us to do likewise.

Since any evaluation must necessarily be subjective due to lack of data on both costs and benefits, I will begin with my initial hypothesis as to the shortfalls and excesses in various areas of research effort in agricultural economics in Australia. Firstly, it was thought that there was a deficiency in the amount of resources devoted to policy questions,[2] particularly in relation to income distribution. Secondly, that excessive effort was devoted to methodology at the expense of solving actual urgent problems; and thirdly that there was a dearth of "creative" effort, again due to concentration on technique. We proceed to confront this straw man with the data.

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[1] This paper is confined to allocation within agricultural economics not to the broader questions of the productivity of research nor of the adequacy of theory. For some examples of the former see Z. Griliches, "Research Expenditures, Education and the Aggregate Agricultural Production Function", *American Economic Review*, vol. 54, No. 6 (Dec., 1964) pp. 961–974; R. Evenson, "The Contribution of Agricultural Research to Production", *Journal of Farm Economics*, vol. 49: No. 5 (Dec., 1967) pp. 1415–1425 and R. C. Duncan, "Evaluating Returns to Research in Pasture Improvement", *The Australian Journal of Agricultural Economics*, vol. 16, No. 3 (Dec., 1972) pp. 153–168. For the latter see E. K. Hunt and J. G. Schwartz, (eds), *A Critique of Economic Theory*, (Ringwood: Penguin Books, 1972), and articles by M. Shubik, "A Curmudgeon's Guide to Micro Economics", M. Bronfenbrenner, "Radical Economics in America, 1970" and O. Morgenstern, "Thirteen Critical Points in Contemporary Economics", in *Journal of Economic Literature*, vols. 8 and 10, Nos 2, 3 and 4 (June, 1970; September, 1970 and December, 1972 pp. 405, 747 and 1163.

[2] This same view is taken by Glenn Johnson in his U.S. based critique "Stress on Production Economics", *Australian Journal of Agricultural Economics*, vol. 7, No. 1 (June, 1973) pp. 12–26. John Dillon makes the same point, but includes also marketing and social criticism in his "The Outlook for Agricultural Economics" *ibid*, vol. 16, No. 2 (August, 1972) pp. 73–81.

THE DATA

The data comprises all the articles relating to agricultural economics published in the *Australian Journal of Agricultural Economics*, *The Economic Record*, *Australian Economic Papers*, and the *Review of Marketing and Agricultural Economics*. Although this does not represent the total of research in agricultural economics, we can regard it at least as a fair sample. *Farm Policy*, *Australian Quarterly* and the *Quarterly Review of Agricultural Economics* were not included because of the diverse nature of their articles. University and Departments of Agriculture publications were omitted because of the difficulties of double counting. Again no attempt was made to include material published in overseas journals. The period chosen, 1958–73, represents the life span of the *Australian Journal of Agricultural Economics*.

The articles were then classified two ways as shown in table 1. Some explanation of the categories is necessary. In the columns called "types of research", Theory refers to advances in theory, Methodology to manipulation of existing theory and Deductive Problem Solving to purely logical solutions. In the rows called "areas of research", Aggregate Production refers to articles dealing with resource allocation and other factors relating to commodities or commodity groups, in contrast to Farm Management which refers to resource allocation on farms. Initially the two were not separated but it was found necessary to start again and deal with each independently. The remainder appear self-explanatory, although, as with all taxonomic systems, the categories inevitably overlap. Even so, many of the articles were difficult to classify because they comprised mixtures of the classes. Where this happened, the article was put in that category where its major emphasis lay. Thus the data must be regarded as an impressionistic view of the scene rather than an exact pictorial representation. We go on to look at the picture which emerges.

RESULTS

The results are presented in table 1. It can be seen that the major emphasis on the *type* of research has been on actual problem solving, followed by approximately equal emphasis on description, methodology, policy and then much smaller devotion to theory and review articles. With regard to specific *areas* of research we see that by far the greatest concentration has been on marketing, farm management, research technique and aggregate production. These constitute 65 per cent of the total. These are followed by education, growth and development, welfare, public investment, growth and trade in approximately equal amounts, adding a further 22 per cent to the total. Thus we see that 87 per cent of research effort has been in these ten areas.

EVALUATION OF THE RESULTS

An evaluation of the results obtained by mere enumeration is beset with difficulties, but there is no way of measuring the productivity nor the cost of either type or area of research. One would need data on the eventual value of each sort of research. Also, at any given time there is no way of assessing the productivity of research personnel engaged

TABLE 1

Enumeration of Articles Classified by Types and Areas of Research—1958–1973

	Theory	Metho-dology	Policy	Problem Solving		Descriptive		Review Articles	Total	Per cent
				Deductive	Empirical	Models	Other			
Marketing	3	1	11	13	25	10	14	2	79	20·6
Farm Management	2	16	..	4	45	1	1	..	69	18·0
Research Technique	2	34	..	3	3	3	..	..	45	11·7
Aggregate Production	1	1	9	3	11	1	13	..	39	10·2
Education (extension and formal)	..	6	4	..	4	..	2	..	16	4·2
Growth and Development	1	1	5	2	1	2	1	2	15	3·9
Welfare	..	..	13	..	..	..	1	..	14	3·7
Public Investment	1	2	3	..	6	..	1	1	14	3·7
Supply Response	1	1	..	..	7	5	..	..	14	3·7
Trade	1	..	7	..	1	..	3	..	12	3·1
Capital (markets)	..	..	3	..	2	1	3	..	9	2·3
Research Evaluation	..	..	3	1	2	..	1	..	7	1·8
Average Cost Functions	..	..	..	..	5	1	..	..	6	1·6
Land	..	..	2	..	..	..	3	..	5	1·3
Taxation	..	..	1	1	2	..	1	..	5	1·3
Data Collection	..	..	..	..	..	..	4	..	4	1·0
Institutions	..	1	3	..	..	..	..	..	4	1·0
Location theory	..	1	..	..	2	..	..	1	4	1·0
Input—output	..	..	..	..	1	..	2	..	3	0·8
Transport	..	..	1	..	1	..	..	..	2	0·5
Farmer Organizations	..	..	2	..	..	..	..	..	2	0·5
Labour	..	..	..	..	2	..	..	..	2	0·5
Consumer Research	..	..	..	..	2	..	..	..	2	0·5
Decision Theory	..	1	..	..	..	..	..	1	2	0·5
Feedmixes	..	1	..	..	..	..	1	..	2	0·5
Human Nutrition	..	..	..	..	..	..	1	..	2	0·5
Demography	..	..	..	..	..	..	1	..	1	0·3
Technology	..	..	..	1	..	1	..	..	1	0·3
Property rights	..	..	..	..	..	..	..	..	1	0·3
Irrigation	..	1	..	..	..	..	1	..	1	0·3
Death Duties	..	..	1	..	..	..	..	..	1	0·3
Machinery Costs	..	..	..	..	1	..	..	..	1	0·3
Sub-Total	..	..	..	28	124	25	52	..	..	..
Total	12	67	68	152		77		7	383	100·0

on different sorts of research, given their kind of training and experience. Would a shift in people between the various categories lower the overall cost? There is no objective way of knowing. Thus, as we noted at the outset, we must resort to a subjective evaluation and recall our straw man.

We see that, when exposed to the chill winds of the data, our straw man tends to fall into pieces. Measured by mere numbers, policy questions show no signs of neglect, nor does there appear to have been undue emphasis on methodology. There does, however, appear to have been some imbalance between research technique (a subset of methodology) and problem solving, although this is not shown by simple enumeration. Many of the articles which are counted as problem solving constitute a mere application of a trendy technique to a trivial problem.[3] This is not meant to denigrate technique research. Often problem solving is constrained by lack of an adequate methodology. However, it is well known that professional rewards tend to come more from using fashionable techniques than from the urgency of the problem solved. The third question, that of creativity, is again not vindicated by the results if we include deductive problem solving with theory. However, it is the author's impression that there is some waste of creative ability resulting from excessive concentration on technique at the expense of creativity.

It could be argued that the period 1958–73 is not homogeneous and that trends may be occurring which create a false impression. It can be seen from table 2 that there is not much evidence for this contention with respect to research *types*. Methodology does show an increase in the latter half of the period as compared with the former but then continues at about the same level. There is a definite decline in descriptive research, but this is to be expected in any developing discipline.[4]

TABLE 2

Time Pattern of Research Types

Type of Research	1958–61	1962–5	1966–9	1970–3
Theory	3	2	4	3
Methodology	13	13	22	19
Policy	17	18	14	18
Problem Solving—Deductive	7	5	7	9
—Empirical	24	35	31	34
Total	31	40	38	43
Descriptive—Models	..	8	14	3
—Other	25	13	9	5
Total	25	21	23	8
Review Articles	5	1	2	4

[3] A trivial problem is one which is unlikely to affect the allocation of resources to a significant extent.

[4] It may be that the decline has gone too far and we, in fact, do need to continue descriptive work as a basis for model building etcetera.

With regard to research *areas* we have little to say, except to express surprise at the number of articles on marketing. Also the amount on research technique adds weight to our previous conclusions. One could complain about the lack of attention to particular areas but, given scarce resources it may be more efficient to specialize in a few areas, as has been done, than to spread ourselves thinly. Besides many areas are in the early stages of development and comparisons of the number of contributions *vis-à-vis* established areas would be invalid. It is, however, the author's experience that too little attention is paid to the urgency of the problem when projected research projects are being discussed. Perhaps politeness precludes us from asking such questions, particularly when the investment in defining the problem sufficiently so that it can be intelligently assessed is usually quite high; but it is at the cost of so much "so-what" research.

SUMMARY

We began this paper with some preliminary hypotheses as to the direction of research effort in agricultural economics in Australia. Although the methodology used was inadequate to deal with the problem it was found that these hypotheses were not borne out by the data. There was reason, however, to suspect an undue emphasis on methodology at the expense of both the solution of significant problems and perhaps also at the expense of creativity.

The basic purpose of this paper has been to stimulate thought by those concerned with research, particularly its direction. Hopefully, for once the data may speak for itself and indicate deficiencies or superfluities which may tend to continue into the future. The implicit implication of an *ex post* analysis is that the past will tend to be repeated in the future. Research, probably, is more subject to recursiveness because the practitioners become, or are, the teachers and they tend to direct their students along similar paths to their own. This may be particularly so with technique-oriented research.