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## SYMPOSIUM

### CONTEMPORARY AGRICULTURAL ECONOMICS IN AUSTRALIA

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It seems to me that there are three major aspects of agricultural economics research which we might fruitfully examine in this symposium: (i) the nature of the research which has been and should be undertaken; (ii) the organisation required for effective research; and (iii) the financing of such research.

#### SOME OBSERVATIONS ON RECENT RESEARCH

If I were asked to diagnose the major deficiency of agricultural economics research in Australia in the past decade, I would say that it lacked analytical orientation. I realise that this is a rather serious indictment, because to my mind, the essence of research is the attempt to confirm or deny hypotheses about the nature of reality. In the absence of clearly-formulated hypotheses or models, it is arguable whether what is done is research in the strict sense at all. Many field surveys have been undertaken in this country simply with a hazy idea of getting "the facts about a specific region". Too often when these studies have been completed, we have witnessed (to paraphrase Lionel Robbins) the disconcerting spectacle of research workers rediscovering the crashing truisms of agriculture and economics and "leaping from the bath, so to speak, with Archimedean enthusiasm running naked through the city recommending them stridently to all and sundry".<sup>1</sup>

I realise that the agricultural economists of the nineteen-twenties were wont to argue that a descriptive survey was often a useful preliminary to more intensive analytical investigation.<sup>2</sup> But in our case these descriptive surveys have rarely been a conscious step in a broader programme of research. Few of these surveys can be said to have been followed up by a more intensive investigation.<sup>3</sup>

Nor do I believe that the class of research project I have been speaking about represents purposive applications of what has sometimes been called the "shot-gun" approach. It is true we have had the multi-purpose type of survey, but this is an entirely different type of thing. The multi-purpose survey is perhaps well illustrated by the terms of reference of the Joint Dairying Investigation Advisory Committee in 1946 which obliged the Committee in the surveys it sponsored to get information which would enable it to recommend a price based on cost

<sup>1</sup> L. Robbins, "Robertson on Utility and Scope", *Economica*, Vol. XX, No. 78 (May, 1953), p. 111.

<sup>2</sup> E.g., J. D. Black (ed.), *Research in Farm Management—Scope and Method*, Social Science Research Council Bulletin, No. 13 (1932).

<sup>3</sup> I do not refer here to return visits to a given sample of farms at a later date, but to new detailed investigation of unsolved problems which become evident as a result of the initial (reconnaissance) survey.

of production and also to get data which could be used to improve managerial efficiency in industry.<sup>4</sup> This pot-pourri of mixed objectives still persists in a significant number of surveys conducted in this country. The view that useful information on such divergent matters can be gained by means of a composite survey appears to be quite widely held.<sup>5</sup>

My own doubts about these multi-purpose surveys are based on several grounds. Leaving aside a vague feeling I have that no survey schedule of reasonable length can possibly provide any depth of information on more than one problem of any significance, I would doubt whether an investigating authority can efficiently and satisfactorily from the same data make intelligent recommendations about prices based either on economic or normative standards, and at the same time draw significant conclusions about methods of improving farm organisation and management. I would question whether nation-wide samples of even a thousand farms contain sufficient homogeneity as to yield meaningful conclusions on aspects of efficiency on the individual farm, given the traditional methods of analysis applied in such studies. Those familiar with farm management literature will be aware of the controversy which has raged over the years on the question of the validity of the so-called comparative method of farm management analysis. The consensus of opinion seems to be that if this technique is of any value at all it is when it is applied to a group of homogeneous farms in a small geographic region.

### THE NEED FOR MORE ANALYTICAL RESEARCH

There is then, in my opinion, an urgent need for a clearer definition of the purpose of much of the work being undertaken in this country in the name of agricultural economics research. Research workers should be clear what they are trying to determine, and design their field work, their research methods, their techniques of collecting data, their questionnaires and their modes of analysis with that objective uppermost.<sup>6</sup>

One of the great strengths of the research tradition in agricultural economics has been the high proportion of empirical investigations. But unfortunately this emphasis on empirical studies can also be the genesis of a major weakness. I believe I was responsible in some measure for getting detailed field investigations under way in the N.S.W. Division of Marketing and Agricultural Economics in 1950. To-day I find it necessary to question seriously the heavy reliance placed on the so-called

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<sup>4</sup> Joint Dairying Investigation Advisory Committee Report No. 1 (November 29, 1947), p. 3.

<sup>5</sup> E.g., Anon., "Pricing Rural Products", *Bank of New South Wales Review*, No. 26 (August, 1956), p. 9.

<sup>6</sup> Most of the discussion in this paper concerns research in agricultural production economics, the major field of research in Australian agricultural economics, to date. This emphasis is due partly to the mode of recruitment of research workers and partly to the dependence of Australian agriculture on overseas, and in many cases governmentally-regulated, markets. Discussion of desirable improvement in research procedure in production economics should not be taken to indicate that I believe it is desirable that there should be such exclusive interest in this field in future.

survey method in Australian agricultural economics research. This is particularly the case when there is evidence of lack of imagination in the design and analysis of the surveys.

There is a widespread faith in what I might call the transferability of survey questionnaires. When one finds masses of questions transferred almost verbatim from the questionnaire used for a survey of sheep farming to one used in (say) a dairy survey, one feels bound at least to ask the question whether this does not represent the acme of uninspired research procedure. I am not referring here of course to the basic descriptive information necessary to identify farm characteristics, but to the core of the enquiries. Coupled with this tendency to routinise research enquiries is the tendency to seek information on a multiplicity of items rather than depth of knowledge on any one. For instance, quite a number of the economic surveys conducted in the past two years have contained an appendage on agricultural extension, which clearly could not be expected to contribute anything of value on this important matter.

I would submit then that the most urgent need in Australian agricultural economics research is to apply creative imagination—a more analytical frame of mind if you like—to the design and execution of research projects. The quest should be for a better formulation of significant research problems, more penetrating hypotheses and more effective methods. If this is achieved I believe we can hope to add more to the corpus of our knowledge of the structure and working of the Australian agricultural economy than we can if we persist with present procedures.<sup>7</sup>

In making these remarks, it would not be proper if I did not mention those individuals who have succeeded in breaking new ground in research procedure in this country. Very often they have done this work as an afterthought or a by-product of the generalised surveys to which I have already referred. The work of Parish and Dillon in

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<sup>7</sup> Black and Stewart in their report on research in agricultural economics in India suggest that as a nation becomes conscious of its economic problems and sets forth to deal with them, the economic research which it undertakes as a basis for such action commonly goes through four stages. These are defined as follows:

- (i) assembling the facts as to the economic situation;
- (ii) analytical description (classifying the data and trying to discover significant differences and relationships);
- (iii) recording and measurement of economic change (initially periodic censuses developing later into shorter-period reporting of data of current change);
- (iv) planned purposive research (research planned from the outset to determine the existence or non-existence of specific economic relationships and to measure them).

The authors state that in their judgment, research in the economics of agriculture in India has now reached the stage in its evolution where clearly more of it needs to be of the fourth type, planned purposive research. J. D. Black and H. L. Stewart, *Economics of Agriculture for India* (New Delhi: Government of India, Ministry of Food and Agriculture, 1954), pp. 4-6.

One could interpret the evolution of Australian agricultural economics in similar terms, and simply say that stage (iv) is long overdue here.

deriving marginal productivity estimates for the South-west Slope of N.S.W. is an example of this type.<sup>8</sup> When these workers did get down to estimating production functions, they found, as might be expected, that there was a great deal of needed data which they should have collected. How much more efficient and more incisive such work would probably have been, had the entire project been planned and executed with the clearly defined objective of making marginal productivity estimates?

In making these suggestions for improvement, I think I have avoided a pitfall which Sir Samuel Wadham expressed the hope that members of the Australian Agricultural Economics Society would avoid. He wrote:

I have never known whether I deserve to be called an agricultural economist, because my concept of an economist is one who is much more interested in the processes of investigating economic problems than I am, and further, one who is often so wrapped up in building up an academic facade around the problems that he becomes less interested in the problems themselves.<sup>9</sup>

I am not anxious to improve research methods for the sake of the methods, but rather to enable us to gain better insight into the burning problems of the day. If anything I am on Professor Wadham's side. I am simply saying that too ready reiteration of the research procedures in common use is one factor which is retarding progress towards more precise knowledge of the Australian rural economy.

### RELATIONSHIPS WITH AGRICULTURAL SCIENTISTS

One factor which has tended to strengthen the emphasis on field investigations, especially those devoid of any real analytical content, is the suspicion which some agricultural administrators entertain towards normal methods of economic analysis and the distrust with which they regard any analysis not based upon "on-the-spot" enquiry. Too often the "arm-chair analyst" is deprecated, the implication being that if one wished to know the effect of currency depreciation on the Australian farming industries, one should go and ask a sample of farmers! Since we must perforce work closely with natural scientists, to whom inductive logic is the essence of scientific enquiry, we can expect always to have to face this difficulty in some form. The important thing is not to let it dominate our own thinking.

The relationship between agricultural economists and technical agriculturalists is not merely important because of the dominance of the agriculturalist in the administrative scene. It is very important in that field of agricultural economics known as farm management where the economist and the technical worker meet most directly. This important field of study which often dominates agricultural economics research in

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<sup>8</sup> J. L. Dillon, "Marginal Productivities of Resources in Two Farming Areas of N.S.W.", *Economic Monograph*, No. 188, Economic Society of Australia and New Zealand, New South Wales Branch (May, 1956).

<sup>9</sup> S. M. Wadham, (personal communication). The same criticisms have been made before, see L. A. Salter, "The Content of Land Economics and Research Methods Adapted to its Needs", *Journal of Farm Economics*, Vol. XXIV, No. 1 (February, 1942), p. 243.

other countries does not seem to have made much impact in this country.<sup>10</sup> At the practical level, one perceivable explanation is that interest in farm management flourishes where profit margins are more narrow and achieved more precariously than in this country. If you contrast the stall-feeding of cattle in the Mid-West of the United States with the situation on Australian pastoral properties, you will see what I mean. In a research context, we lack the necessary detailed input-output information which is a major by-product of financial and cost accounting services in other countries. Given the acknowledged shortcomings of cost accounting in agriculture, the dilemma is to find an alternative, more economical and more fruitful way of securing vital data on farm production functions. Apart from the abortive farm record project in N.S.W. in the mid-forties I do not believe we have seriously sought a solution, and certainly we have not found one.

I feel that any real progress in what I might call the farm management approach in agricultural extension depends not only on the training of extension officers (which we are now taking better care of, at least at the University level), but more importantly on a higher ratio of extension officers to farmers. No matter how much we desire to enhance the efficiency of management in Australian primary industries, I do not believe that any public agency can afford to give the highly specialised attention to individual properties which is the hallmark of effective farm management extension at least in the initial stages. While I appreciate the power of some of the newer techniques like linear programming at the individual farm level<sup>11</sup>, I doubt the political feasibility or indeed the justification for an extension service to farmers orientated towards such detailed objectives. In the nature of the case, the ultimate planning and decision-making must be made on the individual farm in the light of resources available. In the absence of a much larger farm advisory service than exists at present, I believe, for the reasons I have outlined, that farmers desiring detailed farm management advice must look to farm management consultant services operated by private enterprise or perhaps in some cases by universities and agricultural colleges, but definitely financed by the farmers themselves.

### CRITERIA FOR CHOICE OF RESEARCH PROJECTS

I would next like to say a few words about the relationship of a research agency to the general public. I would think that most of us could agree that research, in order to be of value, needs primarily to be done on problems that are real and pressing—in other words, an important aspect of research is to satisfy what has been called “felt” needs. This implies discrimination and the establishment of priorities.

<sup>10</sup> I have offered some possible reasons why farm management has attracted little attention in this country in a paper entitled “The Determinants of Agricultural Efficiency”, *The Journal of the Australian Institute of Agricultural Science*, Vol. XXI, No. 4 (December, 1955), pp. 255-6.

<sup>11</sup> Cf. G. C. McFarlane and J. L. Dillon, “Linear Programming—An Example”, *Review of Marketing and Agricultural Economics*, Vol. 24, No. 1 (March, 1956), pp. 33-43.

In the establishment of such priorities, relevant criteria include the importance and timeliness of the particular projects, and whether progress is being made in the investigation of them elsewhere.<sup>12</sup> Priorities should not be determined primarily by the amount of money a particular industry is able to put up, a principle which we seem to have completely lost sight of, when we restrict the use of research funds derived from specific industries such as the wool industry, too narrowly to research in that industry. Problems of interrelationships between industries and, more important, those of depressed or uneconomic industries tend to be overlooked in such circumstances.

Some research should be concerned with anticipating and discovering solutions before problems arise in an aggravated form. The ability to anticipate the directions of economic and technological progress with the objective of planning appropriate anticipatory projects is a talent to be valued in a research worker. In addition, some part of the available research resources should be diverted to improving the "tools" of research—what we might call a "felt" need within the profession.

Freedom to do worthwhile research within the public service or alternatively, ability to secure money for desirable research projects in the universities, necessitates an appreciation by the people with whom we must deal that professional research workers should know best the most effective way of doing their work. Nobody disputes the right of administrators to decide whether a problem posed for investigation is significant or not. What I do dispute is attempts to tell the professional research worker or agency how to go about the investigation.

## **THE ORGANISATION OF RESEARCH IN AGRICULTURAL ECONOMICS**

I would now like to refer briefly to the question of research organisation and finance. While one's statement on these subjects must have regard to the existing institutional environment, it would be foolish to plan narrowly in such terms. In short, my remarks here, as indeed in the rest of this paper, are based on the view that existing arrangements are not immutable.

### **The Bureau of Agricultural Economics**

The largest and most affluent of our research institutions is the Bureau of Agricultural Economics. In view of Dr. Williams's contribution to this symposium I do not propose to survey its history or examine its multifarious activities in detail. I would however like to make one or two general comments.

To me the most disappointing feature of the Bureau's work in the past decade has been the failure to find a place for what one might broadly call fundamental research in agricultural economics, analogous to the work which the CSIRO does in the field of the natural sciences. Whether

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<sup>12</sup> See Keith O. Campbell, "The Determinants of Agricultural Efficiency," *op. cit.*, p. 258.

by necessity or design, the Bureau's resources have been heavily committed to short-term enquiries having immediate policy implications. At times there has even been evidence that the Bureau has transcended its role as an "independent fact-finding institution" and become a policy-making body.<sup>13</sup> Whatever case might be made for the *ad hoc* research, I feel that, from the point of view of agricultural economics in Australia, it is regrettable that a larger part of the Bureau's budget, which in itself makes up so large a proportion of the total funds available for agricultural economics research in this country, is not diverted to economic investigations of longer-term significance.<sup>14</sup> Alternatively, if it be argued that work of this kind should be the responsibility of the universities, then some means of putting their research work on a more permanent footing must be found.

Tied in with the overwhelmingly *ad hoc* nature of the research done by the BAE is the failure of the Commonwealth Public Service Board to recognise the need for a career service in agricultural economics affording research personnel the status and continuity that apply to other professional sections of the Commonwealth Public Service. Under the present set-up, the BAE has suffered heavy losses of experienced personnel by transfer to other Departments. It may well be that official recognition of the necessity for the Bureau to be staffed primarily with professional workers who make their career there depends in part on a clearer definition of the research role of the BAE.

One additional point I might make concerning the Bureau. I believe that the Bureau is in a uniquely advantageous position to operate as a "servicing" organisation to other agricultural economists. I am not using "servicing" in the sense that the BAE sometimes uses the term itself. I refer rather to the provision of information about the economic magnitudes that are important to the rural economy. The Bureau has made a little progress in this direction in the form of Saxon's series on prices received and prices paid by farmers, and the estimates of export income. But this is merely scratching the surface. We need farm income estimates of a more meaningful type than those produced in the White Paper, estimates of aggregate expenditure on important items of farm equipment, and information on trends in farm capital structure, trends in indebtedness, and so on. The Bureau's activities in reducing the inordinate lag in the publication of the agricultural statistics collected by the Bureau of Census and Statistics are appreciated, but they are not enough.

To do effectively work of the kind I have in mind, the co-operation of the Bureau of Census and Statistics is highly desirable. However, it needs to be realised that agricultural census schedules directed solely

<sup>13</sup> Cf. the published statements on the Bureau's role, e.g., J. G. Crawford, "Administrative Aspects of Food and Agricultural Policy," *Public Administration*, Vol. XI, No. 3 (September, 1952), p. 100; J. W. McEwen, "Foreword", *Quarterly Review of Agricultural Economics*, Vol. III, No. 1 (January, 1950), p. 3; W. McMahon, "Foreword", *ibid.*, Vol. IX, No. 4 (October, 1956), p. 157.

<sup>14</sup> I do not wish to imply that the Bureau should in any sense not fulfil its obligations to do research on issues of public policy. The Bureau, by the nature of its position in the public service, must give objective advice on vital issues as they emerge.



toward the acquisition of physical production statistics are not adequate to provide the answers required about the rural economy at the mid-twentieth century. Contrasting the present schedules used to collect factory and farm statistics is in itself a revealing exercise. If the Bureau of Census and Statistics is unable for administrative reasons to expand the breadth of its census collections, then the Bureau of Agricultural Economics might well explore the possibility of instituting large-scale sample surveys on the pattern of the U.S. Agricultural Marketing Service. If the Bureau of Agricultural Economics did nothing more than expand this type of statistical service to the Australian public it would be a great step forward and a great assistance to other agricultural economists.

### **The State Departments of Agriculture**

In recent years the State departments of agriculture have shown renewed interest in expanding their economic services. Whatever its shortcomings, the oldest of these, the N.S.W. Division of Marketing and Agricultural Economics, has certainly demonstrated that it is possible for such a section in a State department to turn out some worthwhile research with a comparatively small staff.

I believe these State research groups have an important role to play in the Australian constitutional set-up, provided that they are given sufficient staff to operate as research organisations. Even in their policy advisory functions they can serve as important checks and balances and thus help to make discussions between the States and the Commonwealth at the Agricultural Council level less disparate than they have been in the past. Such balance is essential to the continued satisfactory functioning of a federal policy-making institution.

### **Co-ordination of Research**

However, from the point of view of both research and policy formation, I wonder whether it is desirable to go as far in attempting to co-ordinate federal and state work in agricultural economics as some people seem to think is necessary. I would suggest that there is an element of randomness in first-rate research which is incompatible with detailed co-ordination. As Sir Charles Morris so sagely remarked, when he was in this country two years ago, "the wind of original research bloweth where it listeth". It is of the nature of scientific endeavour that it is largely exploratory, depending on individual insight, inspiration and hunches, arising out of the background and experience of the individual. Original research flourishes in freedom, not under the stultifying hand of the co-ordinator, no matter how good his intentions.

Let it be observed that in making these statements, I am not trying to justify unnecessary duplication of research effort. Given the breadth of the research yield yet unexplored in this country, and assuming some originality on the part of research directors, there is little need to fear duplicated effort. Moreover, as I stated earlier, the choice of research projects in any circumstance should be based in part upon a knowledge of what similar work is proceeding elsewhere.

Tied in with this matter of duplication is the phenomenon of the joint State-BAE project. There are to my mind weighty arguments why too large a proportion of state research resources should not be given over to joint projects. It seems to me that such projects, whatever their strong points, could (i) foster unquestioning conformity to traditional research methodology, (ii) relieve pressure on the State Governments to provide adequate research personnel at the State level, and (iii) absorb the time of State personnel who might otherwise do more useful independent research.

### **The Role of the Universities**

The universities are just beginning to make an impact on Australian agricultural economics research. I think we could probably all agree that it is desirable that a larger proportion of Australian research in this field be conducted in the universities. It seems to me on very general grounds that it is to the public interest to foster independent social science research in academic institutions.<sup>15</sup> This applies particularly to objective research into controversial aspects of public policy. The detachment of universities from the pressure groups that seek to affect rural life, combined with a long tradition of academic freedom, facilitates consideration of issues involving conflicts of interests and values. Unfortunately this point is not fully appreciated in Australia.

In the nature of the case, the life-blood for this type of research must come primarily from the university's own financial resources. It may horrify you to be told that the sum set aside from the general budget of the University of Sydney for research grants in all departments of the University, except Medicine and Dentistry, this year is £52,000. The entire Faculty of Agriculture will receive £2,750, and the Department of Economics about £1,000.

In these circumstances, it is clear that any large-scale research that is undertaken must be dependent upon support from outside institutions, and this means almost without exception support on the basis of specific projects. Outside support, all too often in Australia, also means research funds administered by government instrumentalities. The proportion of these research funds which the universities receive as compared with what the Government itself utilises is incredibly small. To be at all attractive to such sponsors, a university project often has to have a certain glamour and appeal, which means in many instances it is not a type of research which should have high priority in a university.

I mention these general problems of financing university research in Australia, not because I believe it is within the power of members of the conference to bring about any substantial changes, but in order to give some appreciation of the financial limitations which inhibit some of us from doing the sort of research we would like to see done in the

<sup>15</sup> The British thought this issue so important that in the reorganisation of agricultural services after the war, they left agricultural economists working in university departments when other workers were shifted to government institutions.

universities. Fortunately for most of us, some relief from this strait-jacket is provided by the enlightened administration of the research funds under the control of the Commonwealth Bank. At the same time, we are hopeful that the recent appointment by the Commonwealth Government of a committee on university finance is a good augury so far as university research as well as university teaching is concerned.

The teaching role of the universities is another important university activity of vital interest to a professional body. It is relevant to discussions of research because the nature of the training which potential research workers receive determines to an important degree the quality of future research. Fortunately, what with the recent increased emphasis on agricultural economics in undergraduate curricula in agriculture and economics, the introduction of specific courses of training for professional agricultural economists, and enlargement of facilities for post-graduate study in this field, the prospect for improvement in the future is good.

I do believe, however, that it is important to the future of the profession that some means be found of giving financial assistance to potential research workers in agricultural economics to enable them to receive post-graduate training, on the pattern of the CSIRO studentships in the natural sciences. A period of post-graduate training can be the most rewarding phase of a student's professional training, as well as bringing rich dividends to potential employers.

In our rapidly changing economy, and indeed our rapidly changing world, it is difficult to anticipate the problems in agricultural economics that we may face in the next quarter century. But we can be sure that success in meeting them, whatever they are, will depend upon the number and calibre of broadly-trained, competent individuals capable of recognising and attacking them as they arise.