



# **REGAE NEWS**

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## ***Coordinator's Comments***

Welcome to the latest edition of *REGAE News*. In *REGAE News* Nos. 7, 8, 9 and 10, we have had a continuing forum on the compulsory use of Benefit-Cost Analysis for research proposals. In this issue, we have a reply from David Pannell to the various comments on his initial contribution. This does not signal the end of the debate. There is plenty of opportunity for anyone to contribute to that or other debates on issues relating to research evaluation.

Details of the workshop REGAE is holding in conjunction with the Annual Conference of the Australian Agricultural and Resource Economics Society (AARES) are provided below. We look forward to as many people as possible attending the workshop and participating in the discussions.

One of the drawbacks from the current informal structure of REGAE is that we tend to drift along with only a few active contributors. I believe that REGAE needs an injection of new blood if it is to remain alive. Some new Branch representatives need to be appointed, so please give careful consideration to taking a more active role if you want REGAE to survive.

*John Brennan, Coordinator*

## ***Recent Publications***

*Guidelines for Economic Evaluation of R&D*, Report Prepared for the Grains R&D Corporation and the Rural Industries R&D Corporation by the Centre for International Economics, Canberra, 1997 (57 pp.).

This publication is an outcome of the joint Grains Research and Development Corporation (GRDC) and Rural Industries Research and Development Corporation (RIRDC) workshop in July 1997. The report is prepared on the basis that one standardised procedure for each evaluation is unlikely to be appropriate, and that guidelines are required to determine the focus and complexity of the approach used in the evaluations.

Copies are available from the GRDC at:

Grains Research and Development Corporation

PO Box E6

Kingston, ACT 2604

Phone (02) 6272 5525

Fax (02) 6271 6430

## CONTINUING FORUM

### ***Compulsory Use of Benefit-Cost Analysis for Research Proposals***

In *REGAE News* Nos. 7, 8, 9 and 10, we have had a continuing forum on the compulsory use of Benefit-Cost Analysis (BCA) for research proposals. In this issue, we have reply from David Pannell to the responses to his initial contribution.

### **Reply by David Pannell, University of Western Australia**

I am pleased to have provoked the debate which has occurred in these pages over the past year. I have also received many personal comments on the issue, most in agreement. It seems a good time to respond to some of the arguments that have been put forward in favour of compulsory BCAs. Most of my comments relate to the response from GRDC (issue 9). In summary, my reply is (a) there undoubtedly *are* benefits from the current system of compulsory BCAs, (b) they are not as big as claimed, (c) there are also costs, which are substantial and have been neglected, and (d) I stand by (and further explain) my comments about the low quality of information generated in the compulsory BCAs.

***The Benefits of BCAs:*** I agree that it *can* make a positive difference if scientists are involved in a full BCA. However, I believe it is often the case that benefits attributed to BCA would be generated just as well using a partial approach, and that this alternative is likely to be less costly in terms of the relationship between scientists and economists (see below). GRDC makes much of the "enhanced focus by scientists on the importance of their research to the grains industry." The same enhancement could have been achieved without requiring BCAs, but instead requiring information on scale, impact and adoption.

***The Quality of Information Generated in BCAs:*** The most alarming point in the GRDC's response was their claim that, "From the BCAs presented in the 1997-98 Full Proposals, there seemed little problem in identifying the impact, scale and adoption and in many cases these were well justified." At best, this is wishful thinking. Just because scientists provide the information and a more-or-less plausible story about it, it certainly doesn't mean the information is accurate. Scale can usually be estimated with tolerable accuracy, but anyone who claims to predict adoption accurately without considerable work is either dishonest or completely ignorant of the adoption literature. Then there is impact. To repeat from my original piece, placing meaningful dollar values on predicted outcomes of biological research is much more difficult and prone to error than many seem to realise, including many directly

involved in conducting BCAs. The difficulties include:

- Even if we can reasonably well foresee the biological outcomes of research, it is still difficult to infer the economic value. For example, benefits are often affected by (a) biophysical interactions between enterprises, (b) substitution between enterprises, and (c) derived values of intermediate products. In most BCAs, the approaches to these issues are simplistic, but in fact they need to be considered in some detail to obtain reliable estimates of research benefits.
- In many cases, the outcome of research is information rather than a new technology. The practical difficulty of estimating the value of information is very considerable. It depends, for example, on each farmer's perceptions or beliefs prior to the research, the extent to which the research modifies each farmer's perceptions or beliefs, the sensitivity of profit to changes in management, the extent to which the information is relevant or accurate for different farmers, and the farmers' other constraints. Most BCAs of this type of research are based on heroic assumptions about the value of information generated. Most are not based on a sound conceptual framework for valuing information, and most grossly over-estimate the value.
- Even apart from differences in adoption, on-farm benefits of a given agricultural research outcome vary widely. They vary between different farming regions due to differences in climate and soils, between different farmers due to differences in their experience, skills, risk attitudes, perceptions, wealth and resources, and between different paddocks of any given farm due to differences in soil type, topography, soil fertility and weed burden. The issue of aggregation is completely ignored in virtually all BCAs done for GRDC, because it is time consuming and difficult.

If the aim is to improve scientists' understanding of their potential contributions to the farming system, these complexities can be sidestepped to some extent. But if GRDC wishes to actually *believe* the benefit-cost ratios in its full proposals (as they seem to imply in their comment), they are going to be sadly deluded. The issues can be dealt with, but not in a lowly resourced process with very tight deadlines. Standardisation is much touted, but it does nothing to overcome the difficulties outlined here. Indeed, it serves only to sweep them under the carpet.

***The Costs of BCAs:*** The process has costs as well as benefits. One cost is the obvious one of time spent doing the analyses. However, to my mind, the most important cost is the considerable damage done to the cause of scientist/economist collaboration. This is always hard to establish, but it suffers greatly when scientists feel that, due to economists, they have had thrust upon them requirements to participate in over-simplistic and rather mechanical analyses, based mainly on guesswork. It is true that not all scientists react so negatively, but many do. I do believe strongly in the potential value of research evaluation, but not in the current GRDC system.

Shumway was concerned about the adverse impact of compulsory BCAs on the essential creative inspiration of scientists. He concluded that, "Evaluation techniques which ... demand additional effort from the scientists in documentation and accountability for the system's sake are doomed to dismal failure," (Shumway, *American Journal of Agricultural Economics*, 1981, p. 171).

Some quick comments on other responses. Bell and Ryburn (*REGAE News*, No. 10) seem to have missed something. Contrary to their apparent belief, I'm not saying that GRDC shouldn't commission BCAs for their own internal use. My main concern is with the damage the current system does to economist-scientist relations. Bell and Ryburn have a very top down concept of the process, in which scientists need to be managed/directed. They seem oblivious to the major source of potential benefit from a good research evaluation process: improved decision making by the scientists. "Excuses"? For what?

Black and Cook (*REGAE News*, No. 10) made a thoughtful contribution. A couple of minor comments. The fact that consultants were engaged to assess the quality of BCAs shows that *someone* in GRDC is attempting to be serious about them, but in fact this is not true in the panels where the actual funding decisions are made. Finally, as a side issue, I note their hypothesis about the increasing magnitudes of benefit-cost ratios as you move from basic research, to applied research to extension. It is an understandable guess but, in fact, the available empirical evidence shows exactly the reverse trend.

### ***Pre-Conference Workshop on Research Evaluation at AARES Conference***

Sponsored by REGAE, the aim of this workshop is to review recent developments in research evaluation, and explore ways in which improved coordination between agencies involved can be achieved for both ex-ante and ex-post evaluations.

**When:** Sunday, 18 January 1998

**Location:** Room ES2, Faculty of Economics, Business and Law Building, University of New England

**Cost:** \$20 per person (to cover room hire and afternoon tea). Registration is being coordinated with registration for the AARES conference.

### **Draft Program**

2.00 - 2.10 Welcome and introduction John Brennan

2.10 - 3.10 Research Evaluation in the CRC's

- Quality Wheat CRC (*Gordon MacAulay/John Brennan*)
- Sugar CRC (*Mal Wegener/Lisa Brennan*)
- Weeds CRC (*Randall Jones*)
- Meat CRC (*Garry Griffith*)
- CLIMA (*Amir Abadi*)
- Rice CRC (*Jeff Davis*)

- Forum session

3.10 - 3.25 ACIAR research evaluation model Godfrey Lubulwa

3.25 - 3.45 *Afternoon tea*

3.45 - 4.00 RIRDC Evaluation issues Jeff Davis

4.00 - 4.30 Adoption estimates in economic analyses Ross Kingwell

4.30 - 5.00 REGAE in 1998 and Beyond - Branch representatives, Future activities

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