



REGAE NEWS

Number 7, December 1996

**Australian Agricultural and Resource Economics Society
Inc.**

ISSN 1324-2806

Coordinator's Comment

Welcome to the bumper seventh edition of *REGAE News*. There has been another recent burst of activity in the research evaluation area, much of it to meet the requirements of the funding bodies. This has again involved a large number of people in a number of organisations. The lack of standardisation and consistency between funding bodies in their requirements is frustrating, and remains one of the main targets for future REGAE activity.

This edition of *REGAE News* contains some contributions from different organisations and perspectives, which provides an important means of communicating with others involved in research evaluation. In particular, I believe David Pannell's contribution deserves serious consideration and debate within our Group. Please consider contributing a paragraph or two in response, or on activities that you think may be of interest to others in the Group for the next edition (March 1997).

John Brennan, Coordinator

Recent Happenings in New Zealand

Primary industry consultants Nimmo-Bell & Company Ltd have been working with a number of major agricultural organisations on the development of research evaluation methodology for New Zealand. A modified benefit-cost approach, based on standard investment analysis techniques with emphasis on estimating benefits and use of risk simulation, is at the heart of the methodology.

The Ministry of Research, Science and Technology has recently circulated its latest paper on the development of an evaluation framework for the Public Good Science Fund (PGSF). The paper builds on earlier work and focuses primarily on performance indicators for PGSF goals and objectives for PGSF research strategies. That focus is designed to elucidate benefits directly attributable to the PGSF. The methods proposed are to be applied in a trial evaluation during 1997 in the areas of forestry and forest products, and land and freshwater systems.

An 18-month long project undertaken by the Foundation for Research, Science and Technology examining the quantitative and qualitative economic and other benefits of

past R & D investment in the meat industry is drawing to a conclusion. The project draws on a number of techniques in an attempt to elucidate outcomes both for the industry and for society in general. The basic premise is that a number of techniques are required because of the long-term, dynamic and sometimes unpredictable nature of the process. The report should be available for public release early in 1997.

Brian Bell, Nimmo Bell (REGAE's NZ Representative)

OPINION

Compulsory Use of Benefit-Cost Analysis for Research Proposals is Counter-Productive

David J. Pannell

Agricultural and Resource Economics and CLIMA, University of Western Australia

The use of Benefit-Cost Analysis (BCA) by the rural research and development Corporations has increased rapidly. I argue here that, for a number of reasons, the corporations should not make compulsory the use of BCAs with research proposals. My comments apply specifically to the Grains Research and Development Corporation (GRDC), but they are relevant to all of the other Corporations as well.

GRDC cites three objectives in their use of BCA for research evaluation:

- (a) to contribute to the research funding decisions of the funding panels;
- (b) to ensure accountability of the use of funds, particularly for government-provided funds; and
- (c) to improve scientists' understanding of the potential relevance and impacts of their research.

These are all very worthwhile objectives. However, for a number of reasons I believe that they are not well served by having compulsory BCAs.

1. For some types of research, BCAs are not appropriate

This is the case for research where the particular outcomes are too difficult to predict well enough for a meaningful BCA, and for research where the outcomes, even if relatively predictable, are too difficult to value. For much basic research, both of these conditions apply. Insisting on BCAs for these projects results in benefit-cost ratios which are little more than random numbers. Decisions on these projects should be (and are) based on other considerations, such as the researcher's track record, and the overall balance between basic and applied research.

2. Even where appropriate, the BCAs are generally of low quality

Given the time frame within which the BCAs are typically done for the Corporations, it is not possible even for experienced analysts to produce high quality results for most

proposals. The lack of expertise of many of the people actually conducting the analyses (whether they be biological scientists or junior economists) further compounds the problem of quality. 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.

3. The scientists recognise the quality problems and become cynical about BCAs

Most scientists believe that there is little validity in the BCAs conducted for most research proposals, and in many cases they are correct. It is too easy to use the BCA framework as "a method for turning preconceptions into foregone conclusions." Even if they don't cynically manipulate their assumptions, they are well aware that some others do. They are also well aware of the limitations of the biological projections they put forward themselves. The whole thing, as presented to them, seems too simplistic, and it is. For these reasons, the scientists gain little, if anything, in their understanding of the potential relevance and impacts of their research. Much worse, however, is the poisoning of the attitudes of many scientists who otherwise might have been able to benefit substantially from involvement in a high quality research evaluation.

4. The BCAs are not used for objective (a)

It is common knowledge that the regional funding panels of GRDC make little or no direct use of the BCA results presented to them. Given points 1 to 3 above, this is just as well.

5. Individual BCAs should not be used for objective (b)

It is sometimes pointed out that, if aggregated, the estimated benefits of all individual research proposals come to an implausibly large number. It is less often realised that it is not theoretically valid to aggregate the benefits of individual projects evaluated separately. Because the BCAs are (and should be) conducted on the basis of changes resulting from a single project, the aggregation of benefits SHOULD add up to more than would occur if ALL of the biological benefits from the various projects were to occur. The theoretically correct way to estimate an aggregate benefit from multiple projects is first to aggregate their biological and physical impacts and then estimate a benefit value for these combined impacts. For this reason, BCAs on individual projects should not be used in the pursuit of objective (b). For reasons of consistency, quality and theoretical correctness, analyses at (at least) the program, rather than the project, level are needed. GRDC is conducting these and should rely totally on them for objective (b).

6. BCAs are not necessary for objective (c)

In my opinion, objective (c) could be met at least as well by a different approach without the negative side effects of compulsory BCAs. This alternative approach would involve the researchers being required to provide some of the data which would form part of the inputs to a BCA, such as:

- What is the total area of relevant soil types or number of relevant farms?

- What is the current common practice on these soils/farms?
- What changes in output or input levels per hectare would result from the research?
- How likely is the research to change the current common practice?

If this alternative was used, the researchers would be exempted from those aspects of a full BCA in which they are not likely to be competent: the estimation of adoption levels and adoption rates, and the estimation of economic values of biological outcomes.

It is true that GRDC has pulled back somewhat this year, with a larger threshold budget specified before BCAs become compulsory. However, I hope that they will reconsider their whole approach to the issue and remove the element of compulsion entirely. This is not to say that BCAs should be discouraged. High quality analyses presented voluntarily by researchers in their proposal ought to count very favourably in the funding decisions of the corporations.

REGAE at the 1997 AARES Conference

After discussion, the consensus among the Branch representatives was that it was not sensible to hold another workshop prior to or after the 1997 AARES conference, following so closely on the workshops at the two most recent conferences and the Global Agricultural Science Policy conference in Melbourne this year. Our preferred position was to have a forum session within the conference itself, but that proved impossible to accommodate with the pressure of other conference sessions. As a result, no formal activity has been planned for REGAE at the 1997 AARES conference. However, there are plans to hold an informal get-together of REGAE members over lunch during the conference. Details of the time and place will be provided in the conference satchel to all who register. Please check your satchel carefully for the information.

Industry Resource Protection Projects: Process as Important as Product

Peter Coyle, David Cook and I are undertaking benefit-cost analyses of industry resource protection projects in Agriculture Western Australia. These projects involve quarantine, surveillance, detection, eradication and/or control of exotic pests and diseases. This often involves a regulatory approach, making it different from R&D on a particular crop or industry.

Given that landholder and community support are critical to the success of industry resource protection, there is a strong emphasis on involving people from outside the agency in resource allocation decisions. We aim to work with these people and project managers to clarify the expected outcomes relative to 'no project' or an alternative strategy. Transparency of analyses is important. Given the frequent uncertainty, sensitivity analysis is also important. We ask experts to estimate minimum and maximum values and reference these estimates. Readers can then gauge for themselves the credibility of the assumptions used.

A draft of each analysis is reviewed by a working group comprising Project Manager, Program Manager, Board member and one or more people working in the industry.

Projects we are looking at include: Wild donkey control; Footrot eradication; Noogoora burr; control; Golden dodder control; Pastoral property inspections; Interstate import and export clearance.

Versions of the spreadsheet PCES, an adaptation of REVS by Neil Thomson, are most commonly used for our analyses. Improvements we propose to make in 1997 are: (a) a facility for incorporating multiple streams of benefits where these cover different periods (e.g. crop production and environmental); and (b) incorporation of probability distributions rather than point estimates where possible. A single benefit-cost ratio from a draft analysis can mislead and create unnecessary angst. Therefore, our analyses are confidential to the Industry Resource Protection Program until endorsed and released by the Agriculture Protection Board.

Another activity will be conducting workshop sessions for Regional Advisory Committees to help them prioritise among pest species and management strategies.

Peter Eckersley, Agriculture WA, Bunbury

(E-mail: PeterE@agby1.agric.wa.gov.au)

Rounding Up, in the West

1996 may be a year some staff of Agriculture Western Australia (formerly the Dept of Agriculture WA) would prefer to forget. This was the year the organisation began to implement the system of Funder Purchaser Provider (with all the associated programs of out-sourcing, redundancies and restructuring) and also began the process of regionalisation at the same time. Despite the inevitable disruptions to all staff, economic evaluation continued, albeit in "fits and starts". The agency's budget for 1995-96 was allocated in February, without a major new evaluation thrust. However, benefit-cost studies carried out in previous years were an important resource for the Resource Allocation Group of the Office of Policy and Planning. The allocation for 1996 reinforced re-allocations carried out in the previous year. I presented some of these at the REGAE workshop in February (Thomson, N. and Morrison, D., "Research evaluation and priority-setting in research-providing agencies in Australia", in Brennan, J.P. and Davis, J.S. (eds), *Economic Evaluation of Agricultural Research in Australia and New Zealand*, ACIAR Monograph No. 39, 1996).

In May, Programs were set a target of evaluating at least 30% of their budget by September. This undertaking had been built into the agency's Enterprise Bargain Agreement. The motivation among economists was high, given that a salary rise of about 4% awaited the satisfactory completion of the task. While some viewed the process a little cynically, those evaluations formed the basis of work to be refined for the 1996-97 budget allocation process starting in February 1997.

The projects evaluated in 1996 include:

- Potatoes

- Durum wheat
- Canola industry development
- Lupin breeding review
- Integrated weed management
- Milk quality
- Pasture utilization dairy
- Golden Madder control
- Emus
- Farm forestry development
- Increasing hauteur of wool
- Quality assurance for wool
- Kangaroo meat
- Lambplan
- High value meat to Japan
- Manipulating meat quality of pigs
- Ostriches
- Producing wheat for premium markets
- Quality assurance for table grapes
- Breeding verticordia species for overseas markets

If anyone is interested in the methods and background to any of these analyses they could contact me (Phone: 09 368 3720; E-mail: nthomson@infotech.agric.wa.gov.au) and I will direct them to the analyst.

On a general note, two things have not happened that probably should have:

- (a) There has been no attempt to upgrade REVS from the version REVS_2C.XLS (1995);
- (b) REGAE (WA) has not completed the guidelines for benefit estimation, promised at the February 1996 meeting of REGAE.

We have no immediate plans to look at the first point just yet, but the second point is being worked on as you read this message; something should eventuate in the new year. Also in the new year the Agency will be progressing evaluation, to apply the public benefits test, under national competition rules. So far, the effect of price fixing in the chicken meat industry been assessed, using economic surplus methodology. Questions about how Agriculture WA is evaluating National Competition Policy, can be directed to Brad Plunkett (09) 368 3434 or Dave Feldman.

Neil Thomson, Agriculture Western Australia

(Phone: 09 368 3720; E-mail: nthomson@infotech.agric.wa.gov.au)

 [AARES Home Page](#)

 [REGAE Page](#)

*Copyright © Australian Agricultural and Resource Economics Society, 1999
Last revised: December 09, 2002.*

<http://come.to/aares>