

## FORUM

### DECISION ANALYSIS AND FARM MANAGEMENT: THE NEED FOR A NEW PERSPECTIVE

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The role of management in any organization involves decision-making, a good deal of which is shrouded in uncertainty. Management of this risky system can be considered an art and yet science can be brought to bear on the problem as well. Management scientists and particularly decision theorists have been concerned with developing an approach to decision-making which combines art and science, resulting in better decisions—"better" in that they are consistent with the beliefs, preferences and attitudes of the individual decision-maker involved.

Decision analysis provides an approach which recognizes the presence and validity of many "irrational" beliefs and preferences and their use in decision-making. By doing this it allows the individual to use his conceptions and perceptions of his situation to come to a reasoned decision. As such it provides an intuitively very appealing approach with seemingly enormous potential.

But, as with any theoretical system, there is a gap between theory (the decision model proposed) and practice (the use of that model in the real world). This gap has broadened over the years especially in relation to farm management decision-making. As Ryan [25, p. 43] points out, there are two fronts to any theoretical system: the internal structure of the theory and the fit between the theory and reality. In decision analysis the advancements have primarily centred on one front—that of expanding the theoretical base. This has been observed by Brown [1, p. 87]:

... purely theoretical developments are not holding up further applications of decision theory; the frontiers of the technology are way ahead of the application, in most cases.

There is an obvious problem here which is not apparent with many theoretical systems, and this is that decision analysis has a normative orientation. It seeks to show how people should behave given that they accept the underlying assumptions or behavioural norms. The rules derived follow logically from this base. Thus the fit between theory and reality cannot be tested in the same way as it can for positive theories. This does not mean, however, that proponents of the

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approach need only concern themselves with theory. They do still have a responsibility to carry the theory out into the real world and it seems to me that they have, to date, neglected to effectively do this.

Applications of decision analysis to farm decision-making have been based on realistic hypothetical situations rather than real ones [see for example 2, 3, 7, 9, 12, 14, 15, 16, 17, 18, 19, 20, 21, 24, 26, 28, 29]. There has been a lack of reported real-world applications of even the basic concepts, that is, applications which used decision analysis as part of an actual decision-making process. Even unpublished theses and papers at the Australian mecca for decision analysts show a similar trend [for example 4, 11, 13, 22, 23, 27] with only one recent exception [10].

Farm management economists have concentrated too much on sophistications and techniques at the expense of applying basic concepts. As Goetz [8, p. 127] observed:

. . . authors are interested in exhibiting their mathematical virtuosity to the exclusion of any interest whatever in helping managers understand or resolve the real problems of real business.

Economists have developed what Ducker [5, p. 26] describes as a “gadget bag” approach to farm management. As a result of this, students of farm management come to view decision analysis as just another technique (probably of limited real use), rather than seeing it as a broad approach to management with widespread implications. This is not to say that academics share this view. Indeed, Dillon [6] indicates that they do not. What it does show is that academics in teaching farm management and decision analysis are failing to get this view across.

The problems with teaching the theory arise because of its normative bias. For individuals to accept the approach as valid and to adopt it requires a commitment to the implied world-view, and commitment to any belief system or ideal involves an emotional response rather than merely a rational one. Courses in decision analysis at universities, colleges and farm management schools try to obtain this commitment on rational grounds. By not stressing the general approach and by not providing real-world examples, the students fail to identify with the approach being taught.

Two things, I believe, are needed. The first is for economists to “go back to basics”—to be aware of the basic concepts involved in decision analysis and to view it as an overall approach to management rather than being overawed by the complexities of formal decision analytic models. This entails applying the concepts to a wide range of real problems, both large and small. The second need concerns academics and the teaching of decision analysis. It is time they more effectively relate the approach to real-world situations, thereby providing the students (as well as economists, extension workers and decision-makers) with examples with which they can identify.

Unfortunately McCarthy and Anderson's [17, p. 142] comment that

. . . such models will only realize their full usefulness as grounds for consistent decision-making after considerable effort by extension authorities to encourage farmers to think within the framework of these models.

seems to typify the attitude of many academics. I think it is time they faced up to the reality of the lack of effective communication of the approach. It is they who have the commitment to the approach and the faith in its possibilities as well as the expertise to apply it to particular cases. It is they who should, initially at least, put the theory into practice in a useful way.

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