

Forum

A Response to the Forecast of Doom

P. L. Nuthall*

Hardaker and Anderson (1982) conclude that very few Australian farmers have utilized central computer based recording systems because they do not believe the benefits outweigh the costs (perhaps including the misery of filling out forms?). They concur with the farmers' views through arguing that recording schemes obviously provide historical information, whereas decisions involve the future, and that the control aspects of cash recording aren't particularly important as there is little opportunity to influence the direction of many farms anyway. In essence, it appears they believe that simple manual systems are adequate and consequently agricultural economists should devote little time to developing computer based systems despite the advent of the micro-computer.

The discussion presented below is designed to put the other side of the story, with particular emphasis on the New Zealand scene. Stress is laid on the importance of micro-computers as being a new force on the management scene.

It might be true that Australian farmers are not convinced that recording schemes are of benefit, but it is also true that this is not the case in other parts of the world. Shadbolt (1982) reports that some 1,500 English dairy farmers record cash transactions through a computer based scheme operated by the Milk Marketing Board. One British micro-computer software group (Farmplan) reports (pers. com.) that they have approximately 350 farmers using their recording system (after three years). In the U.S.A., Michigan State University operates a number of computer based recording and analysis programmes (as do a number of other Land Grant Universities). Mill (1978) reports that 1,500 farmers use the Michigan accounting program and Harsh (1978) notes that in 1974 12,885 computer analyses, using a wide range of programs, were carried out for farmers. In 1976 this had increased to 21,012 analyses and in 1978 to 24,075 analyses. The trend is clear, indicating that if the programs actually required by farmers are developed and made available in the right form they will, in fact, be used. This is logical. Farmers do have decision problems and, provided information designed to assist in making these decisions can be provided in a suitable form, then they will, potentially, use the information. Whether the potential is realized will depend on the ease of use and cost of the recording and analysis systems.

These convenience and cost factors are crucial. The micro-processor revolution is the key element in ensuring these convenience and cost requirements are met. The micro-computer means the farmer has at his disposal the ability to record and analyse his own data just when he needs to and at his own speed in his own office. No longer does he have to be adept at filling in forms, to hold off making decisions until the data has been mailed, processed and returned. The micro-computer does not mean, however, that data collection and collation is no longer necessary. What it does mean is that with well designed software the whole process is simplified and relatively convenient. Furthermore, with

* Lincoln College.

micro-computer costs decreasing, the cost of recording and analysing on the farm is decreasing and, indeed, has already decreased to the point where many farmers have considered it worthwhile to purchase a machine. (Survey information indicates there are at least three hundred micros on New Zealand farms now.) This trend is clearly evident in other sectors of the economy as well. For example, it is reported¹ that 30 pharmacists in the Christchurch area alone have purchased micro-computers for record keeping purposes.

Recent evidence indicates New Zealand farmers do, in fact, believe the micro-computer revolution will provide them with the means to record and analyse their data in a cost effective and convenient manner. The Lincoln College introductory workshops (six to date), designed to introduce farmers to the use of the machines, have all been booked out. When asked at the end of each course whether they would invest in a micro-computer the answer was invariably "most definitely", though a significant percentage did note that they would delay the investment until a larger range of fully tested software was available. Similar courses and seminars held at other venues up and down the country have also been very well attended. (Reports from other countries indicate a similar situation.) A mail survey (unpublished, 1981-82) of 1,200 farmers (country wide and across all farm types) elicited the fact that 60.9 per cent of the 71 per cent responding believed micro-computers could be of some use (33.5 per cent), useful (17.9 per cent) or very useful (9.5 per cent) on their farm. It must be recognized, however, that many of these farmers are probably not well informed on the costs and benefits of using these machines together with the crucial software. In the same survey, when asked how long it would be before they would purchase a micro-computer, the farmers responded: 0.5 per cent after 1 year, 2.6 per cent after 2 years, 4.1 per cent after 3 years, 2 per cent after 4 years, 5.9 per cent after 5 years (15.1 per cent over 5 years) and 31.1 per cent beyond 5 years. All this evidence clearly indicates farmers in New Zealand believe micro-computer based recording and analysis schemes need, at least, to be looked at very seriously.

Whether or not the promise is going to eventuate can obviously only be judged after a number of years. No doubt many farmers, due to their type of farming, their particular objective function, resource base, and lack of willingness to learn new skills will never invest in a micro-computer-software combination (except, perhaps, for general educational and recreational reasons). However, there are still large numbers of farmers, faced with the need to make decisions to which there are not self evident answers, who will seek help in one form or another. While it is patently obvious that records are historical they are clearly the basis on which the present, and future, are judged. Evidence suggests that at least New Zealand farmers believe this truism. The mail survey referred to above extracted the information that 25 per cent of the respondents updated a detailed cash book at least monthly and, furthermore, compared the actual outcome with their period by period forecast budget (45.3 per cent said they calculated an annual whole farm budget). Fifty-one per cent of this sample also said they kept paddock records (11.5 per cent in a specialist paddock recording system compared with a general diary). The figures presented earlier on English and U.S. computer based recording schemes also indicate that it is likely many farmers keep manual records in those countries as well, as it can be assumed that the number using computerized systems is only a small percentage of all farmers keeping records.

¹ *The Christchurch Press*, 14 October, 1982.

Whether or not all these farmers that currently keep records (and hopefully use them in decision making) will turn to computer based systems is going to depend on the cost and convenience factors associated with micro-computers (and eventually terminal based systems). If agricultural economists (and specifically the farm management wing), and their programmer colleagues, all working very closely with farmers, can produce appropriate software that utilizes the special features of computers compared with manual systems, there is every chance that large numbers of farmers throughout the world will use computer based management aids and will, furthermore, obtain positive economic benefits from this use. The challenge is there. If it is not met it will be taken up by others, including the many farmers that are already involved in developing their own systems. This cannot be ignored.

References

- HARDAKER, J. B. and ANDERSON, J. R. (1982), "Why farm recording systems are doomed to failure", *Review of Marketing and Agricultural Economics* 49 (3), 199-202.
- HARSH, S. B. (1978), *A Progress Report on Telplan Activities*, Agricultural Economics Staff Paper 78-58, Michigan State University, East Lansing.
- MILL, S. J. (1978), Computer use in agriculture in the United States of America. Mimeo, Queensland Department of Primary Industry, Brisbane.
- SHADBOLT, N. M. (1982), Agriculture and computers in the United Kingdom. Mimeo, Ministry of Agriculture and Fisheries, Christchurch.