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INFORMATION NEEDS OF ORGANIC FARMERS

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SUMMARY

Information is a key input into all conventional and organic farming systems. Organic production systems are low-input and intensive, requiring a thorough and detailed knowledge of the farming system and of organic production methods.

This paper compares the processes involved in information flow into organic and conventional farming systems and argues that the adoption-diffusion model of technology transfer is even less appropriate for organic producers than conventional. Models of a participatory or interdependent nature are likely to be more useful. It is argued that the viability of the industry is likely to depend on the development of methods of information flow which are appropriate for both producers and their systems.

Key Words: organics, management, learning, participatory methods

Introduction

Information is a key input into decisions made in all farming systems. Information enters farming systems in a variety of routes, which differ from farmer to farmer and between farming systems and industries. This paper investigates information flow into organic farming systems and compares this process with that of conventional farming systems.

Information, Knowledge and Learning

Information is a resource that can be used by a farm manager as part of solving a management or technical problem (e.g., research findings), or to help the farm remain profitable (e.g., market information). Information is, therefore, generally sought by a farm manager to solve a problem. Information may be made available by outside agencies who want to influence the farm manager's behaviour.

However, a manager's behaviour will change only if he/she is convinced that the information is of relevance in improving their situation. Learning, "the process people use to make sense out of and gain some control over the ever-changing world" (Wilson & Morren, 1990, p27), involves combining new information with previous experience to enhance knowledge. Thus, information received may result in an increase or change in the manager's knowledge of the farm system and the external environment. Given this background, information from outside the farm can lead to an improvement in the performance of the system.

Agricultural Extension

Information flow to farmers has traditionally been facilitated by a process known as agricultural extension. There are many definitions of extension, which reflects the existence of a number of conflicting models that have developed over time. For example, Roling (1988) sees extension as providing information to assist individuals to clarify and achieve their own goals. Greer and Greer (1996) in contrast define extension as "a form of participatory approach to achieving behaviour change" (p. 2). Agricultural extension and consultancy in New Zealand features a broad spectrum of practices, including the two above (Walker, 1993).

Farmers and growers seeking information can obtain it from: farm and horticultural consultants; industry associations (e.g., association publications, conferences); farming and horticultural

publications; other growers via personal or group discussions; rural service agencies such as stock and station agents; commercial representatives such as seed or fertiliser firms; Government Departments, universities and research institutes.

Organisations wishing to provide information to farm managers can do so via seminars, discussion groups, field days, workshops, newsletters, videos or the internet, and mass media such as radio, television or magazines and newspapers.

Technology Transfer

Technology transfer is considered one element of agricultural extension. It involves the transfer of research findings to farmers and the aim is to encourage innovation: the application of new technologies to farming systems to improve profitability of the systems and the industry as a whole. It is here that the information seeking behaviour of farmers and the information transfer behaviour of extension agents may overlap. It is also an area of conflicting theories over the best approach.

An early model was the Linear Diffusion Model (or Adoption/Diffusion model) (Rogers, 1962). Under this model research scientists develop technology, which is transferred to managers by extension agents. The new technology is first adopted by innovative farmers and growers (early adopters) and later by the broader farming community. This method is effective for technologies with widespread application and/or which were simple to apply. It is however, a top-down approach which is unresponsive to user needs.

Typically less than 50% of managers adopt new practices promoted using the linear diffusion model. This is due to considerable variation between farmers and between their farming systems. An innovation or new practice may not suit an individual farmer's management style, goals and objectives or financial situation. Alternatively the extension methods used may be inappropriate or may not reach the entire farming community (Greer and Greer, 1996).

More recent models of technology transfer used in New Zealand include: the Farming Systems Research and Development Model (a systems approach where farm systems are studied, another basically top-down process); and the Interdependency Approach (farmers, researchers and extension agents work together to define farmers' technology and other information needs, research outputs sought, and methods of implementation)(Greer and Greer, 1996).

Changes in New Zealand science in 1992 leading to increased privatisation of science research have also had significant impacts on the process of technology transfer (Journeaux and Stephens, 1997; Morris, et al., 1995). Consultancy services have been fully privatised and research institutes are carrying out a high proportion of client-funded research, which is not freely available to farm managers as in the past. These changes were part of market reform and deregulation that affected all parts of the New Zealand economy, and have particular significance for organic farm managers.

Information needs of organic farmers

The information needs of organic farm managers differ from those of conventional managers in ways that appear to have a significant influence on the application of current models of extension and technology transfer for organic systems. Marshall (1991) observed that conventional farming systems rely more on purchased physical inputs than do organic systems, which rely to a greater degree on inputs of knowledge (information). He goes further to claim that:

... organic farming relies on self-regenerating "inputs"(including know-how and ecosystem service flows) to a significantly greater degree than mainstream farming systems which rely to a greater extent on non-self-regenerating inputs (including agricultural chemicals). While the likelihood of being able to gain enforceable property rights over non-self-regenerating inputs resulting from research is high, this is less likely to be true for self-regenerating inputs resulting from research.(p. 286)

Applying this to the New Zealand situation suggests that formal research into organic production is less likely to be carried out unless funded by industry.

Kloppenburger (1991) points out that there may not be a uniform farming knowledge, particularly for sustainable agriculture. Agricultural knowledge and skills are built up over long periods of time in specific locations and involve complex interactions. This reduces the relevance of much research currently undertaken that is claimed by some to be applicable to organic systems. Partial solutions cannot often be successfully grafted onto organic production systems.

Farm managers considering converting to organic production need information as the basis for their plans and decisions. Graham (1994) considers lack of knowledge is the greatest inhibitor to conversion. In his conclusion he claims that an increase in the number of organic growers requires the dissemination of accurate information about the organics industry. He quotes Wattie Frozen Foods as saying that disinformation and misinformation is slowing recruitment of growers into the industry.

Saltiel, et al., (1994) state that it is likely that farmers adopting sustainable practices use information to reduce some of the risk associated with taking on new technologies.

A 1997 study of organic farming in New Zealand (Saunders, et al., 1997) reported frequent comments in focus groups concerning a lack of information. Information was lacking especially about organic management strategies and market opportunities. Organic farmers felt that there was a need for more effective transfer of technology from research already completed and also that they wanted greater involvement in the research process (pp. 32, 34). Information was lacking, therefore, due to poor technology transfer and also because the information didn't exist, i.e., current research is not addressing the problems of organic producers. The poor infrastructure for the organics industry was also seen as a factor inhibiting information availability (p. 40, 121).

Information flow into organic systems

Hassanein and Kloppenburger (1995) studied Wisconsin dairy farmers who converted to a sustainable rotational grazing system. Unable to find information on sustainable practices the farmers produced their own knowledge of their production systems and transmitted it through horizontal information exchange networks that they developed locally and regionally. Hassanein and Kloppenburger suggest that this process occurs more widely in the development of alternative agricultural practices.

Liepins and Campbell (1997) consider that organic producers in Canterbury practise information networking like that described by Hassanein and Kloppenburger. They consider that producers learn organic farming practices through a complex process involving awareness triggers, technical competencies and information networking. Producers begin with a background range of skills, interests and resources, for example, educational training and European ethnicity. These and other key awareness triggers such as organics conferences and the development of new organic markets can trigger a desire to learn more about organic production in potential and existing organic producers.

The next step in the learning process is the producers' acquisition of technical competencies. This involves producers acquiring skills through trial and error, the use of written and oral information, involvement with local producer networks and consultation of inspectors and consultants.

The final step in the learning process involves the information networking mentioned previously. The learning process does not end with this step, however, and is typically a continuous process of triggers and responses.

Liepins and Campbell (1997) report that printed information was the most common source of information used in the group of Canterbury organic producers that they studied, in particular newsletters and magazines from organic and industry associations. Information was also obtained from discussion groups, seminars, field days, conferences, consultants and informal networks. Of these sources informal networks were the most important information source. The authors suggest that the importance of printed material is due to producers having limited time and finances.

Fairweather and Campbell (1996) identified a sub-group of Canterbury organic farmers who had converted from 'old style' low-input farming. They had never fully modernised to high input methods. Due to their lack of participation in field days, etc., their existence went unnoticed. Such farmers (plus

others who had retired) were noted to be sources of information for local less experienced organic producers.

Discussion groups are becoming increasingly popular in the North Island. A number of these meet about every two months. Comprising growers, industry and BIO-GRO representatives they meet on different properties and discuss what people are doing, what works, what doesn't, etc. (Interview 3).

An Agriculture New Zealand consultant interviewed considered that there is a lot of relevant information "out there", but that growers don't seem to know how to find it. He considered part of the problem relates to poor linkages between researchers and growers. Scientists publish a paper or present their work to a scientific conference, and think that technology transfer has occurred. (Interview 2).

A representative of Heinz Wattie considered that most growers learn by trial and error (Interview 3). A Christchurch grower claimed to have learnt all he knows from trial and error over many years. Printed information and professional advice was not appropriate to his particular property and he developed his production system based on his own observations. (Interview 1).

Heinz Wattie are a major source of information and support to growers contracted to them to produce organic vegetables for export. In addition to their newsletter (currently being revamped) the company produces a manual outlining the basic facts on organics for those starting out. They advise and support new growers, helping them to become certified by BIO-GRO. Heinz Wattie consider that the lack of information currently is due to the organics industry being in its infancy (which it is from their perspective, perhaps) and that availability of information is improving (Interview 3).

BIO-GRO is primarily a certification agency, and its inspectors do not provide advice other than that relating to permitted activities. The certification process and documentation is, however, a significant part of the learning (and information acquisition) process for organic producers. (Liepins and Campbell, 1997)

These cases serve to demonstrate that different sectors of the industry have different perspectives on the role and usefulness of information and these can be observed even within sectors. For example industry members who have become involved in organics for commercial reasons, and who generally have a conventional background, seem have a different perspective on information flow and technology transfer from those with a more philosophical basis for their involvement.

Summary & conclusions

It could be argued that information is more important to organic producers than to conventional producers. The low-input, intensive nature of organic production requires a thorough knowledge of the farming system, of organic production methods and of the local climatic and economic environment. Research leading to new practices with wide applicability may, therefore, be of little relevance to individual organic systems. The linear diffusion model of technology transfer is, therefore, even less appropriate for organic producers than it is for conventional producers. The interdependency approach is more appropriate as it gives organic producers input into research and communication with researchers.

Information is currently seen by many as the main limiting factor to growth in the organics industry. Wide availability of information is therefore crucial to the continued expansion of the industry in New Zealand. However the industry must think carefully before assuming that models used in other industries are appropriate. The mere fact of different perspectives of different sectors of the industry, could restrict the widespread adoption of organic production. This problem could be overcome by the enhanced development of horizontal local and regional networks, as identified by Hassanein and Kloppenburg (1991) and Liepins and Campbell (1997).

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