Farmer groups: a measure of their effectiveness

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ABSTRACT

From 1993 to 1995 changes in sheep and beef cattle farmer learning styles; their beliefs about group interactions and their beliefs about the farm system were measured in three groups located in the upper North Island. The groups were each part of a group farm monitoring programme involving scientists from the Whatawhata Research Centre. Using a survey questionnaire, the study sought to identify ways of improving the delivery of technology to group members. Most group members expressed a preference for logical learning experiences (50% of those surveyed) followed by problem solving (32%), action (12.5%), and social interaction (5.5%). Belief maps which illustrate group interactions identified problems in group cohesion. Farm system belief maps identified distinct categories of farm system components, viz.: performance related technologies; relatively non-complex technologies; relatively complex technologies. Over time, beliefs about stock policies became more closely related to farm performance indicators such as profit.

Keywords: group farm monitoring; learning styles; belief maps.

INTRODUCTION

Farmer groups involved in technology transfer are widely established in New Zealand sheep and beef cattle farming. These groups operate in a variety of forms and include Meat Research and Development Council (MRDC) Monitor farms (Rhodes and Aspin 1993), Farm Improvement Clubs (Baker 1993) and Group Farm Monitoring (Webby and Sheath 1991).

Group farm monitoring (GFM) involves farm monitoring programmes as outlined by Webby and Sheath (1993). In the context of farm monitoring, technology transfer and farmer learning is encouraged.

The group process is likely to change farmer learning styles and beliefs, which in turn influences their attitude towards the use of technology (Paine 1993). However, the overall effectiveness of the group process on individual members has not been fully evaluated or understood. This paper reports findings from a study that sought to determine the influence that GFM had on group members' perceptions of the farm system. Three GFM programmes were studied over a period of two and half years using a combination of survey techniques as outlined by Paine (1993).

DESCRIPTION OF PARTICIPATING GROUPS

A descriptive profile of each group is provided in Table 1. Groups varied in terms of physical location, size and mix of professional support services. Other differences between groups include the type of farm system operating on monitor farms, the technology issues discussed, and changes in farm performance during the GFM programme.

SURVEY

The study covered the responses received from sixty-two group members of three farmers groups located in the

TABLE 1: Group descriptions

	Group A	**Group B**	**Group C**
General	- Location: West of Hamilton -Size: 21 members -Duration: Dec 1989 to June 1995	-Location: West of Te Kuiti -Size: 30 members -Duration: March 1992 to June 1995.	-Location: South of Taumarunui -Size: 30 members -Duration; March 1992 to June 1996
Monitor Farm	-Size: 500 ha -Ewes: 2,600 -Cows: 165 -Lambing: 100%	-Size: 373 ha -Ewes: 1750 -Cows: 120 plus 140 grazers -Lambing: 120%	-Size: 340 ha -Ewes: 1800 -Cows: 180 -Lambing: 90%
Technology Issues	-Lambing date -Stock numbers -Finishing cattle -Water and subdivision	-Feed supply and demand - Increasing lambing to above 140%	-Sheep performance -Liveweight gains in young cattle -Pasture quality
Change in Monitor Farm	-Lambing delayed 2 weeks. - 400 less ewes -Steers 80 kg heavier at 2years	- 12 tonne increase in farm production.	- Two tooth ewes 7 kg heavier at mating - Cattle 80 kg heavier at 18 months -Lambing delayed 4 weeks

upper North Island. The groups were first surveyed by a three part questionnaire in May 1993 during routine group meetings. A follow-up survey using the same questionnaire was completed by group members in group B at their last meeting on 30 May 1995. Groups A and C received their questionnaire by mail in November 1995. Members who had not returned the questionnaire after 4 weeks were contacted by telephone. As a result the survey achieved a seventy-one percent response.

SURVEY METHODS

1. Learning styles

To identify how best to present technology to the groups, this study sought to describe the learning styles of members. Using the method described by Kolb (1984), a learning style inventory was used to categorise each group member. Kolb classifies learners into four categories according to their preferred style of learning. A learning style refers to an individual's preference to gather and use information to build knowledge. The categories can be summarised as those individuals who prefer to learn by taking action, social interaction, logic, or problem solving.

2. Group interactions

This part of the survey sought to further understand the group process and social interactions within the group. Group members represented their beliefs about the group using a relative distance scale which compared group components. These people components include the individual respondent as the principle component "me", the consultant in the group, the scientists in the group, the group as a whole and the monitor farmer. This part of the questionnaire also asked the respondent to relate the profitability of their farm to these components. Using principal components analysis, similar to the Galileo methodology (Parminter *et al.* 1997) for scaling respondent's beliefs (Woelfel and Fink 1980), scales of respondent beliefs about group inter-relationships were prepared.

3. Farm systems interactions

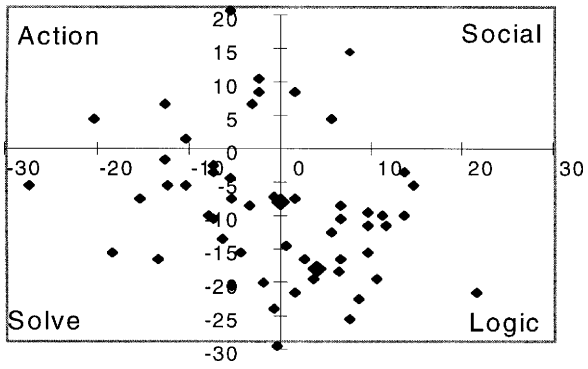
This part of the study identified how farmers viewed the farm system and how technologies were related to these systems views. Using the method explained in group interactions above, the interactions between components of the farm system were studied. The farm system components were: feed management, grazing management, stock policies, subdivision, supplements, faecal egg counting, fertilisers (not including nitrogen), nitrogen, pasture production, livestock weights, farm profitability and the principle "me".

RESULTS AND DISCUSSION

Learning Styles

The learning style position of each member in the 3 groups at the end of the study is represented in Figure 1. Of all group members, 12.5 % fell in the learn by action camp, 5.5 % in the learn by social interaction, 50 % learn by logic

FIGURE 1: End learning position of each member from the 3 groups.



and 32 % learn by problem solving. This result is made up of three scientists, two farm consultants and fifty-one farmers who completed this part of the survey. Scientist and consultants positions were similar to each other sitting two-thirds of the way down the axis between the problem-solving and logic-learning camps. Individual positions between the first and second surveys were relatively unchanged.

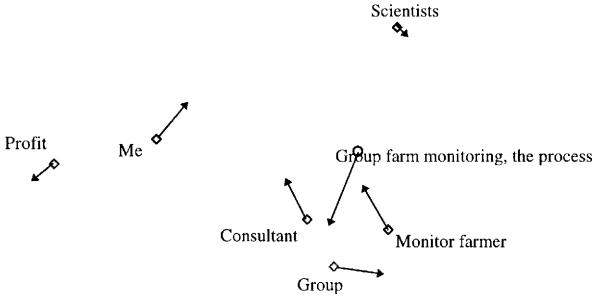
The survey results suggest that technology messages should be pitched to farmers using logical arguments that justify why the technology should be used. Details about the "what" and the "how" of operating the technology would then follow as this approach appeals to the logic of adoption.

Group Interactions

A belief map for Group B is illustrated in Figure 2. The map can be read by assessing the relationship of each component to the principle 'me' component using a 'relative distance' scale. The near components are more strongly related to the principle "me" component than distant components.

The map for Group B (Figure 2) showed that over time the group remained cohesive with no significant change in the relationships between components. In all groups, the individual (the "me" component) remained close to profit, but distant from the other components of the group (as illustrated in Figure 2). However, for Groups A and Groups C the belief maps helped to identify some areas of concern with the group process. In Group A the farm consultant role became more distant from the group

FIGURE 2: Group B belief map of group interactions with the start position of components and the extent and direction of change in these positions between surveys



process over time. This changing belief was consistent with actual experience as a sequence of three different consultants came and went during the GFM programme. For Group C, the map identified the "me" component and the "profit" component moving away from GFM over time. An observation that may explain this result was that forestry firms bought a number of farms (including those of group member's) in the area during the final year of the GFM programme. Members may well have responded to the opportunity to sell their farms at competitive prices during times of low prices for beef and wool.

Farm Systems Interactions

Farm system belief maps (Figure 3) are also read on the basis of the relative distance of each component from the principle "me". Belief maps showed that in all groups, members tended to formed three relatively stable belief categories within the main components of the farm system. The exceptions were "supplements" and "faecal egg counting "(FEC) which were distanced out on their own. We interpret the three categories as:

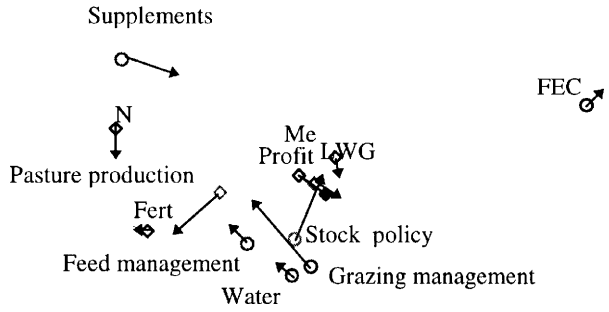
1. Farm performance involving; the individual "me", profit and the liveweight gain of livestock.
2. Relatively non-complex technologies involving; nitrogen, basic fertilisers and pasture production.
3. Relatively complex technologies involving; stock policies, feed management, grazing management, and water supply.

The belief map of Group B (refer Figure 3) identified two beliefs that were also evident in the other groups. First, the distance that FEC was placed away from farm performance indicates that members do not believe that farm performance is dependant on the practice of FEC. This also indicates that to achieve the successful adoption of FEC, messages need to link the technology intrinsically with farm performance. The second notable belief was the change in the relative position of "stock policy" to "farm performance". This change in beliefs about stock policy was most apparent in group B, but varied in its extent between each group (see Figure 3).

SUMMARY

The identification of learning styles and beliefs about technology can assist professional efforts to improve interactive communication and collective learning within farmer groups. Indicators such as group cohesiveness and beliefs about farm system interrelationships provide a useful forum to extend group learning experiences. This preliminary study also suggests that there is an opportunity to develop learning style measures and belief mapping as useful tools for facilitators of farmer learning groups.

FIGURE 3: Group B belief map of farm system interactions with the start position of components and the extent and direction of changes in these positions between surveys.



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