CHOICES IN THE MANAGEMENT OF ANIMAL PRODUCTION RESEARCH

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Summary

Several alternatives exist for the structure of organizations engaged in research, development and extension on behalf of animal industries. The system that has evolved in Australia calls for co-operation between organizations. Management by objectives of outer-directed, multidisciplinary, mission-oriented task forces offers considerable scope for solving problems of animal production in a way that will be meaningful to farmers.

I. INTRODUCTION

In Australia, research into animal production is “big business”. There are five joint Commonwealth/Animal Industry Funds which contribute to the national efforts for research, development and extension. In addition, the Commonwealth and State treasuries support these activities in CSIRO, State Departments, Universities and Colleges of Advanced Education. The private sector also finances research ranging from such subjects as chemical depilants to the hard business facts of farm management. Perspective is lent to these figures by CSIRO’s budget, which is the only relevant financial statement amenable to dissection. In 1970-71 the Organization spent $14 million on production research for the sheep and wool industry; only 1.5 per cent of the 63,000 factories in Australia employed a larger work force than that engaged by CSIRO alone on production research on behalf of the woolgrowers. The approximate annual cost per research scientist (plus support staff) was $32,500 in 1967-68 and $41,500 in 1970-71.

There is copious literature on the need (see for instance Koontz and O’Donnell 1964), techniques for (see Walters 1965), and acceptance by scientists (see Pelz and Andrews 1966) of management of research organizations. This paper touches briefly on some of the alternatives open to managers of research, development and extension in animal production.

II. A COMMON PURPOSE FOR ANIMAL PRODUCTION RESEARCH

What is the common purpose of animal production research? This is the first question confronting its managers. The Acts relevant to joint Commonwealth/Industry Research Funds and to CSIRO, as well as the recorded reasons for establishing the State Agricultural Colleges and Departments of Agriculture, have the common theme of financing or conducting research, development and extension to benefit primary industry.

Is the common purpose of animal production research to do research on
animals, or does it include investigations of the biological, social and economic functions of the ecosystems that men, who maintain populations of domestic animals, exploit to advantage? Should the common purpose of animal production research also include the maintenance and improvement of the ecosystem’s resources, and the husbanding of those that are difficult, expensive or impossible to replace?

The choices facing the managers of research, development and extension range from narrow objectives that make the accumulation of disciplinary knowledge a goal in itself, to those arising from a wider ecological, social and financial appreciation of immediate, and probable longer-term needs of specific animal industries. To be meaningful to the animal industries the disciplinary approach requires almost limitless, long-term finance, and adequate, multidisciplinary teams to assess field problems and to carry out the necessary applied research, development and extension; and an information retrieval service, that is nationally available without geographical limitations. At present Australia has none of these prerequisites. Thus, one of the choices facing the managers of research, development and extension relates to the degree of co-operation they will foster with other organizations, to ensure that the administrative system that has evolved in Australia really works for the benefit of the animal industries.

It is important for the managers of regional, State, or national efforts to obtain clear agreement on their organizations’ objectives, and to manage the total available resources to attain agreed objectives. These include using the budget to achieve, rather than to control, clearly formulated plans.

Management of animal production research by mission-oriented objectives based on appreciations of problems arising out of the ecological, social and financial needs of the animal industries, seeks to integrate the goals set by teams engaged in research, development and extension, with those of industry; but these goals need to be carefully formulated, clearly enunciated, understood and accepted. To accomplish management by objectives, managers have a responsibility to develop themselves and to contribute, with their staff, to the detailed goals of groups working in multi-disciplinary efforts to define, assess and solve industry problems.

III. DETERMINING GROUP GOALS

Corporate objectives have to be broken down into those for groups, according to the problems they set out to solve; it may be necessary to define, in joint consultation with groups and individuals, their own particular roles. In helping to set group goals, managers need to be aware of the activities of other organizations in associated fields, so that attention can be paid to necessary duplication, while unnecessary duplication is avoided; leads which appear to be worth developing are followed, and appropriate economic assessment is made of work completed, and of that projected for the future.

Chosen group objectives should be realistic and capable of achievement, compatible with immediate and mid-term needs of industry, and with the strategies for the organization’s plans. Plans for the attainment of group objectives should be understood by, and mutually acceptable to the groups likely to be engaged in their implementation.
Creating an Environment for Effective Research, Development, and Extension

The mechanism of research consists partly of formulating and attempting to disprove hypotheses. But the question of the relative value of the numerous relevant hypotheses that could be tested needs resolution. This is a matter of the management of the individual research scientist’s programme, or that of groups of scientists working together on a common problem, and may have to be reconciled with the intra- and inter-programme priorities accepted by the organization.

Managers of research face the problem of how best to create an environment that favours the development of individual effort backed by imaginative, constructive and purposeful thinking about the work in hand. All organizations have definite structures, chains of command, and rules governing authorizations at different levels. This arrangement is usually vertical, giving a typical bureaucratic structure, capable of dealing with repetitive events than can readily be classified and treated routinely. This does not necessarily create an environment conducive to research, development, and extension. Men trained for such professional work find difficulty in divorcing themselves from their values; however, the values held by groups can become so firmly entrenched as to make their own organization more inflexible than any bureaucracy!

The last decade saw considerable changes in our animal industries and their research needs. The poultry and the pig industries experienced the development of large corporations devoted to the intensive production of broilers and/or eggs, and pig meat, respectively. Such intensive production requires large capitalization, and the profitability of the enterprise is vulnerable to variations as small as $0.2c/kg in prices paid for feed, and $2c/kg in prices received for meat produced.

Steps were initiated to reconstruct the dairy industry; the wool industry experienced increases in prices paid and decreases in prices received. Intensive husbandry usually calls for increased input of labour, whose cost per man-hour continues to rise. In the circumstances presently surrounding the sheep industry, animal husbandry is likely to become less intensive, with a lower labour input and decreases in production proving to be tolerable, and even rewarding in terms of input-output relations and cost-benefit ratios. The beef cattle industry entered a period of potential increase in production, depending on continued capital investment. Both the dairy and the beef industry are confronted with insecure markets; for some types of wool there is virtually no market at all! These situations all raise changing pressures to help affected industries adapt to their new, external environments. So managers of animal production research, development and extension, are likely to be confronted with the dual task of creating and continually adapting the environment within their organizations to the changes demanded by the industry they serve.

One possible choice for the future of organizations engaged in animal production research, development and extension will be the preservation of a fluid or temporary structure, in which task forces will be organized around problems demanding solution. Leadership within mission-oriented groups tends to emerge with the skills required at the time (Moule 1969a). Thus the role of leader would be likely to rotate with different tasks, according to the skills required at different
stages in the execution of the project. Organizational charts would tend to consist of stratified, multidisciplinary, functional groups, rather than an elevated pyramid, preserving a hierarchy. Pelz and Andrews (1966) found that, as the age of scientists increases, performance was sustained with periodic changes in project, which also increase self-reliance and interest in both breadth and depth; the more effective men undertook several specialities or technical functions.

Such an arrangement would confront managers with problems of integration, internal conflict, revitalization, and continuous adaptation under increasing social pressures. The most acute problems of integration would be likely to arise from differences between goals, job security, work interest, achievement, recognition, responsibility and status of individuals on one hand, and on the other, organizational goals of solving practical problems through understanding, and the development of workable technologies, whose application will be socially acceptable and economically rewarding to industry.

Division of labour creates specialization, which in turn can lead to internal conflict capable of tearing apart the fabric of organizations. Personal and group goals can transcend organizational goals, and can wreck the co-operation between individuals and groups that most managers would hope to create. The development of more complex research techniques within professional groups is likely, in the future, to release additional forces which could put further strains on multidisciplinary organizations engaged in research, development, and extension, unless managers learn to make choices that curtail harmful, inter-group conflict. This will probably call for ensuring over-riding identification of the individual with the organization’s tasks relative to industry’s needs, so that specialists evolve into generalists, who can contribute to the organization’s overall effectiveness, rather than to their personal stature.

The changing circumstances continually surrounding the animal industries require managers of research, development and extension to perfect organizational means for constantly learning about the total environment surrounding the industries on whose behalf they work. Exploitation of “feed-back” is likely to be an important part of continuous, but necessary revitalization, which calls for constant re-analysis and fearless revision of programmes and, where necessary, decisions “to stop losses” on work whose results are likely to be suitable only for the Journal of Fruitless Endeavour! Thus serious attention has to be paid to the continued review of programmes and the evolution of organizations, so that stagnation and decay can be revealed and arrested. Pressures to do so will grow as proportional decreases in the contributions from animal production to Australia’s export earnings make the increasing costs of maintaining each research scientist become more dependent on “the public purse”.

V. CHOICES FOR MOTIVATION

Failure to form, and to gain acceptance of common goals means considerable power may have to be used to motivate people to work in desired directions. This could lead to an organization that is directed from within. Such an organization is likely to accept only information emanating from industry and its environment that is compatible with its organization values, thereby reinforcing them,
and divorcing itself from the industry it is meant to serve.

An alternative choice, suggested by Rocke (1971), is to have an outer-directed organization whose relationships would be managed from signals emanating from individual animal industries and their respective social and economic environments. A prerequisite of this type of organization would be the deliberate omission of a formal statement of disciplinary ideology, so that members would feel free to, and of necessity be anxious to respond continuously to outside influences, in order to reach defined, common goals to assist animal industry through research, development and extension.

VI. CRITERIA FOR SCIENTIFIC CHOICE

Several criteria have to be met in selecting programmes of research, development and extension for Australia’s animal industries. Managers of these activities and their staff may find it helpful to consider, among others, the following questions:

1. Why should a particular project or programme be pursued? This paper implies that a “problem-solving” approach will occupy more attention in future and provide a satisfying framework for the organization of animal production research. But the recognition of a problem is not enough; its extent, nature, implications, and economic and social importance have to be defined and assessed to be of sufficient importance to warrant the investment of money and effort in its solution.

2. What is the relevance of the proposed work to human and national welfare, relative to increased financial return and social welfare emanating from new or altered practices, and to the development, and, where necessary, husbanding of natural resources? (Moule 1968). In addition, what is the educational and cultural value derived from well directed, highly productive programmes of research, development and extension?

3. What is the likely timing of the programme? This question embraces timing both in relation to the immediate, mid- and longer term needs of the industry, and the duration of support likely to be necessary before meaningful results probably will be forthcoming.

4. What workable technology is likely to flow from the work? The animal husbandryman requires simple technologies that can be easily fitted into his normal management procedures (Moule 1969b).

5. What will be the scientific merit of the proposed work in terms of the contributions a successful outcome may make to other fields of knowledge?
VII. ACKNOWLEDGMENTS

Permission of the Australian Wool Board to publish this paper privately is gratefully acknowledged. The Board formulated its policy towards production research in 1964. This was communicated to all recipients of support from the Wool Research Trust Fund and subsequently published. Work in many organizations is financed from the Wool Research Trust Fund and the Board has always refrained from making statements about the management of research, development, extension or education; it acknowledges this paper is the personal work of the author and in no way purports to reflect Board policy.

VIII. REFERENCES


