DISSEMINATION AND APPLICATION OF RESEARCH RESULTS

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ABSTRACT

In theory, the forest manager and/or the forester should be aware of the latest research findings, and be able to implement recommendations. In practice, they may not know that research has been or is being carried out in a particular field, or their information may be out-of-date, or inaccurate; often they are not able to effect new methods or techniques. The difficulties of bridging the gap between the research and management groups involve a four-phase approach: communication or conversation, demonstration, participation and, finally, publication.

INTRODUCTION

The value of forestry research to industry is directly related to the transmission of its findings from researcher to manager. Yet often serious communication problems arise. Kibblewhite (1983) gives recommendations on how to achieve better “transfer of technology” within the organisational structure of the N.Z. Forest Service. In this note my intention is to deal with dissemination at a more personal level as related to my own experience in this area.

At times the researcher is overbearing and arrogant while the manager is often on the defensive and does not hear what the researcher is trying to say. The forest manager should make himself aware of the latest developments, by developing an up-to-date library of key literature. Management plans and financial budgets should be flexible so that any necessary improvements or a new technique can be put into practice. Unfortunately, this ideal is rarely achieved.

The forest manager works under pressures different from those of the researcher. He has to complete his work programme on time, and efficiently, keeping within an often tight financial budget. His success is measured by his ability to keep within these constraints. He may have difficulty in finding time to read

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anything other than the essential day-to-day material immediately connected with forest management. His reading of technical literature and research reports suffers. It is difficult for him to appreciate that his education needs to be a continuous process and is never complete.

In contrast, the researcher has a more limited and often all-absorbing sphere of interest. His approach to literature is completely different. It is part of his work to read everything about his speciality and he expects to spend a considerable amount of time looking at technical literature. On completion of a project it is important for him to "write-up" his work. In addition to seeing the implementation of his findings in practice, success of a researcher may be measured by his production of scientific papers.

The man in the field frequently fails to recognise new (or even old) problems, and is often ignorant or suspicious of any research in which he has no involvement. The researcher is often the best person to recognise problems, assess their extent, and determine the most likely solutions. He may, though, take so long in producing his report that the field manager's need for an answer will have passed. The report, when it comes, is often bulky, full of statistical analyses and qualifications (in the interest of accuracy but to the confusion of the field man), so that translation into field practice is difficult.

"The man in the field frequently fails to recognise new (or even old) problems."
"He is inclined to be suspicious of the researcher who appears to be free of time or money restrictions."

While the principal medium for communication between researcher and field manager is the formal publication, on its own this is inadequate. A more effective means of transfer of information follows the progression — conversation, demonstration, participation, and finally publication.

Conversation

Personal contact between researcher and manager is essential. Only by sharing their experiences can they see each other’s point
of view. The field man will realise that a researcher can go a long way to solving some of his problems, and is a useful source of specialised information. A personal introduction made at the earliest opportunity will serve the rest of a lifetime. Senior managers in particular need to be involved in such conversation, as not only are they in a position to convey research findings to a greater number of field staff but also their recommendations will be influenced by their personal knowledge.

Researchers sometimes work in isolation, forgetful of their possible contribution to forestry practice. It is good for them to have to explain the purpose, organisation and results of their work to the practitioner, and receive comments, criticism and feedback on the difficulties and successes that arise from the implementation of their research. If the field man is acquainted with the researcher/author, he will be more likely to read his publications, and, having some knowledge of the writer and his work, will have a better understanding of what is written.

It is interesting that many who claim to be too busy to read all the “guff” produced in the Forest Research Institute, have little difficulty in finding time to talk.

Demonstration

It is easier to visualise something than to read about it. If you see a new machine, plant, method of working or silvicultural technique, you are more likely to remember it. Research into forestry practices involves on-site investigations.

The researcher's horizon should be broadened greatly so that research projects are tested on a wider range of sites (localities) than at present. Research trials would become more accessible to local or regional staff, and, if personal contact is good, every opportunity to see a new development can be taken. Field demonstrations to explain trial work and their results make a vivid impression. Regular seminars, meetings or field days at both trial sites and other sites with field staff provide an opportunity for conversation and demonstration. The use of visual aids at such seminars is also important in bringing the experiences of one region to another.

Participation

In my experience, participation is the most valuable means of technology transfer. Wherever possible, a field man should have this opportunity. Only by being personally involved can he become aware of the full implications, appreciate the value, and
encounter some of the problems that might arise from the use of a new machine, material or technique. Experience of (say) a new chemical regime for controlling gorse will highlight those aspects which the written work or conversation may not have covered, such as unexpected delay in aircraft availability or suitable conditions for burning, changes in growth development of the weed, and so on. Any step-out trial work should involve the local station and district/conservancy staff. Unfortunately, such involvement may be only half-hearted and a firm control of the trial is needed by research personnel to ensure the completion of all phases of the work. Close contact between field/research staff will result in early awareness of new materials and equipment and the opportunity to suggest improvements before they have been fully tested.

A key person is the forest worker. If the man who eventually has to put new methods into practice does not understand recommendations or instructions, good research and effective communication to managers are wasted. Forest workers should be properly trained in the use of new techniques.

Publications

The Forest Research Institute produces annual reports which are popular because of their colourful format. They provide general summaries of current work, but are limited by the need to meet the requirements of a number of audiences. First and foremost, they serve to justify, to Government, FRI's expenditure. Second, they serve as a general medium for disseminating information to several audiences, of which the field man is one. However, the field man is better served by short single-subject publications with firm recommendations in a practical language, preferably with economic assessments. Research papers rarely provide answers to problems in “black and white” terms as they tend to set out all the factors and constraints involved. The research worker whose results are ready for use in the field should, if possible, write a special paper with the manager in mind, setting out the possibilities in an “option table”. Good layout with illustrations is important, but most attention should be given to “readability”. Conversational style, simple language, short sentences and, if possible, good humour are invaluable. Managers' problems vary in complexity and call for a wide style of presentation, from a simple advisory leaflet with a title “How to...” to the more comprehensive bulletin.
The dissemination of such publications has in the past been mechanical and the man in the field was swamped by a tide of publications for which he had no immediate use. His "time" problem means that he cannot read them when they arrive, and at a later date when he needs them he may have difficulties in recalling specific items or knowing where he has put them. The new system of issuing the "publication list" with the user requesting papers of interest will avoid the old problem and enable the FRI to determine the actual amount of generated interest in any given topic(s) or research field.

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GENERAL CONSIDERATIONS

- The Forest Research Institute is an integral part of the N.Z. Forest Service and should be in constant and close contact with forest managers from H.O., conservancy, district and forest or nursery level. Two-way communication should minimise the barriers between research and field, particularly if a relatively simple format is used.

- A continual exchange of staff between field and research should be encouraged as this would contribute greatly to understanding each other's point of view. Research staff should spend their first two years of service in the field after graduation before joining a research group.
Senior research staff should pay regular visits to H.O., conservancies, and districts to discuss problems and developments with senior staff. These should be complemented with a vigorous follow-up programme where necessary.

Seminars or workshops, such as the one on “Aerial Application” held in Nelson Conservancy in March 1983, serve a very useful function in exchanging information and bring both the manager and researcher up-to-date.

Forest workers and supervisors should be trained in new methods and techniques at field courses (not F.T.C.). Close collaboration between research staff and the course instructors would ensure accurate interpretation of research recommendations.

The Scientific Liaison and Information Section of FRI offers a further link between field and research and its workings are discussed fully by Kibblewhite (1983). In addition, it should provide a point where any enquiry can be met, and where the manager can turn for help and advice; promptly, personally and in the form he is most likely to want.

Most of this paper is straightforward commonsense, but there will always be people who will accept the ideas in this paper, yet will raise obstacles to putting them into practice. Some will be unexpectedly prejudiced against anyone who is labelled as a “specialist”. Some will not see the benefits of personal contact and will object to the “costs” of travelling. Both researcher and manager will claim they have “no time” to consider the other, blaming that universal excuse — “the pressure of work”.

If we want efficient forestry practice based on sound forestry research, then we must give positive thought, allocate time, and spend money on initiating and maintaining close communications between research and field.

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REFERENCE

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