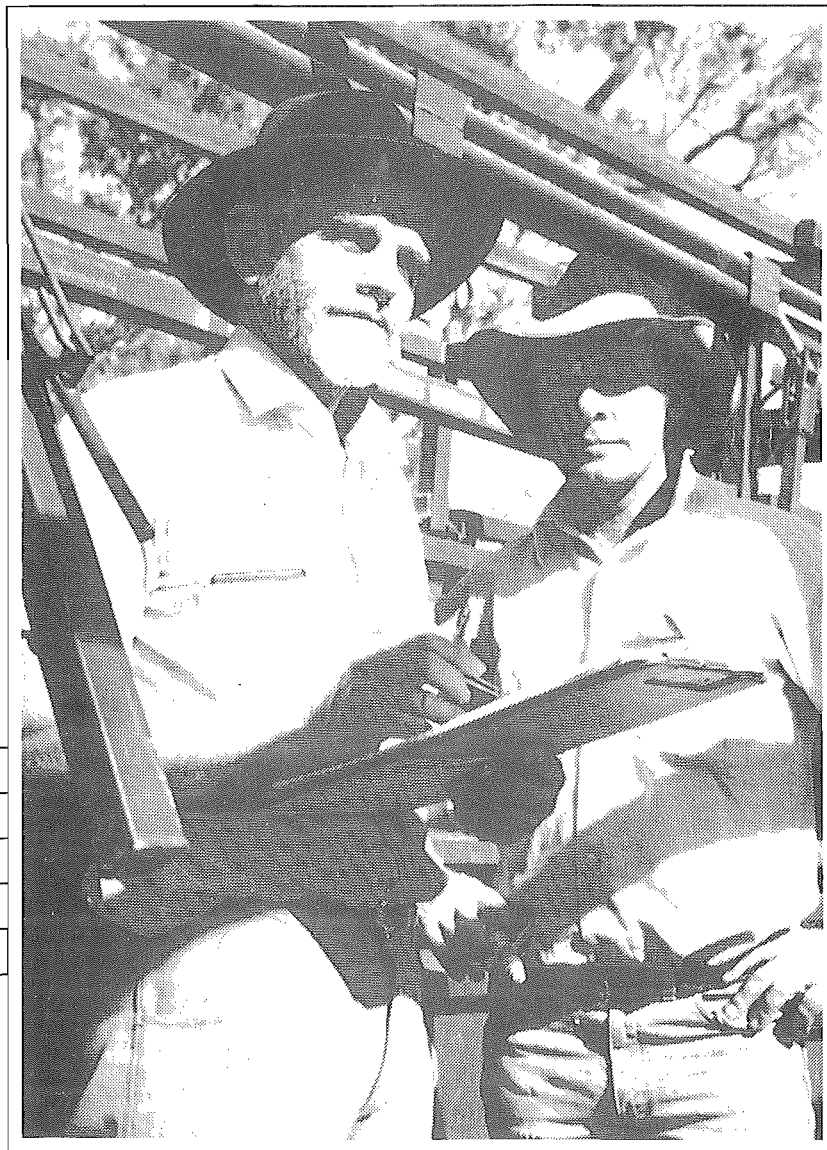


Queensland Department of Primary Industries
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Agricultural Extension : — a practical manual —

P. D. Mortiss



Department of Primary Industries, Queensland Government

R. N. SHEPHERD

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Training Series QE87004

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P. D. Mortiss
Soil Conservation Services Branch

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FOREWORD

This book appears at an opportune time. Government extension agencies are operating on diminishing funds and the problem of coping with fewer resources will continue. Hence skill in using extension methods and the efficient organisation and evaluation of extension programmes assume more importance.

The 1987 Australasian Extension Conference concluded that extension workers needed training and experience to develop:

- capacity to interact at the personal level;
- skills in communication in numerous channels and media;
- an understanding of sociological and psychological forces that influence adult learning, motivation and behavioural change.

This book will prove a valuable resource in extension education. University and Agricultural college students will find it a useful supplement to their courses while new extension workers will find it will help crystallise their experience and support other practical training.

The author, Peter Mortiss, worked in field extension for the Queensland Department of Primary Industries for more than a decade at a number of country centres. He then joined the QDPI's training unit where he had responsibility for extension training. He has also acted as a consultant to extension workers in developing and evaluating extension programmes and conducting extension events. Currently, he is responsible for extension training and staff development in Soil Conservation Services Branch.

Mr Mortiss has drawn from this experience and consulted numerous sources within the QDPI to compile this manual.

J. Miller
Assistant Director-General (extension)

PREFACE

This book is a practical guide for extension workers in agriculture. It contains simple, easy-to-follow chapters on the commonly used extension methods, and an outline of how extension may be planned and evaluated.

Extension workers are action-orientated rather than academic. With this in mind, the manual was written to be brief but comprehensive. Therefore, some of the concepts are not spelt out in detail and in some places the prose is very condensed.

The content is not meant to be read at a sitting. Each chapter is self contained so that readers can refer to the relevant chapters before conducting any of the activities mentioned. Those who lead extension workers in the field should find chapters 8, 9 and 10 useful reading before meeting with staff to discuss extension programmes.

A non-academic style has been used in the writing and therefore few of the sources of ideas have been mentioned in the text. Most of the sources for each subject are listed in the **Further reading** section at the end of each chapter. Those interested in reading further should find most of the references mentioned reasonably accessible.

Many people in the Queensland Department of Primary Industries have helped prepare the manual. Gordon Burrige of Pig and Poultry Branch drew the cartoons. Staff of Drafting Section, Land Resources Branch, prepared the diagrams. Ross Porter and John Fleming of Information and Extension Training Branch contributed to the chapters on extension writing and radio. Burnie Davis of Pig and Poultry Branch and Rod Strachan of Beef Cattle Husbandry Branch provided material for Chapter 8. Glen Mickan of Economic Services Branch provided material for Chapter 11. David Carrigan of Extension Services Branch and Graham Jamieson of Horticulture Branch provided helpful comments on the text.

Not everyone will agree with all the points made in Chapter 8, on extension strategy, and Chapter 11, which speculates on future developments, but I hope the opinions given will help stimulate debate among extension workers.

P. D. Mortiss

CHAPTER 1

COMMUNICATION - THE BASIS OF AGRICULTURAL EXTENSION

Introduction

Extension workers are professional communicators. Discussions with clients, writing, running trials, and conducting meetings and field days are obvious examples of methods they use to promote change in rural communities.

To be effective communicators, extension workers must be adept in using the full range of extension methods for different purposes. The astute use of mass media alerts clients to coming agricultural events and develops an awareness of issues, whereas group discussions and field days give clients the confidence and technical detail needed to change farm practices. The farm visit is the major source of information on farmer concerns and aspirations. It is also the means of adapting general recommendations to individual circumstances.

Extension workers need to subdivide their audience into groups with similar technical needs and social characteristics. This enables extension staff to identify problems and opportunities relevant to each group and to develop activities tailored for them. Large-scale, business-oriented producers obviously have different problems and opportunities to small hobby farmers. Separate literature and field days need to be organised for each group.

The many businesses which supply goods and services to farmers and graziers have a powerful influence on their adoption of new technology and management systems. Agribusiness is a distinct and important audience for extension. Special presentations, district tours and continued liaison create links among commercial firms, and between extension workers and the agribusiness community. This generates an improved flow of quality information, which in turn benefits the farming community.

Skilful communication with each target audience starts with knowing its concerns, views on the industries, resources, attitudes to risk and the terms used in describing these issues. The extension worker who knows what is on people's minds and how they interpret events can give his messages the right tone and timing to have maximum impact.

Extension starts with people

Understanding people is the key to successful extension work. It allows you to determine a client's motivations and needs. You can then pitch your message at the right level and either recommend appropriate technology or work with your client to develop it.

There are some important principles in dealing with people.

- Most of our values and attitudes are learnt from the people we mix with. Our family and close friends shape our fundamental values, which are absorbed early in life. Secondary groups joined later in life, such as sporting clubs and associations, affect less important attitudes.
- People value their life experience: their family, friends and the key events in their lives. Their opinions and beliefs are based on this experience. If you deny the value of this experience or opinions based on it, you are attacking the worth of the individual.
- Adults learn by building on past experience; to give meaning to new information, they relate it to what they already know.
- Adults learn readily through discussion with their peers. Their willingness to change is strongly influenced by the opinion of their social group.
- People have a powerful drive to maintain and enhance themselves. They make a change to gain increased satisfaction or to avoid decreased satisfaction.
- Feelings and attitudes change very slowly. They are rarely changed by telling, urging or teaching. Experience and interaction with others gradually convince people of the advantages of new ways.
- The methods of attaining cooperation may be more important than the final decision or course of action.
- True cooperation is possible only if a mutual-influence system prevails. People will understand and be more likely to undertake a course of action if they have helped formulate it.

How successful extension workers operate

Research findings from several countries show that successful extension workers share some common characteristics in their understanding of clients and their approach to the job.

- The more successful extension workers expend more energy on promotional activities and have greater client contact than less successful workers.



Farmers learn readily through discussion of practical issues with their neighbours.

- Successful workers consider client needs and recommend **appropriate** technology rather than the most sophisticated technology.
- Successful workers have empathy with their clients and **think and act like them**.
- Successful workers use key members of the client community, often called 'opinion leaders', to relay messages to others.
- Successful workers have a high credibility with their clients.
- Successful workers aim to enhance the independence and self determination of clients.

These points show that genuine communication needs a two-way flow of data. Communication implies far more than merely supplying information. In response, the way extension workers operate has gradually changed. Where once the main job was to be an active change agent by spreading the results of production research, there is now more emphasis on the extension worker as a key person in an information network. The modern extension worker realises that he is not the sole reservoir of expertise and that he works with farmers, agribusiness and others to develop knowledge and exchange information.

General rules of communication

The success of any communication is affected by the way the receiver of the message perceives the source. If, for example, a farmer believes that an extension officer is a credible source of information, he will have a positive attitude towards his recommendations and be likely to act on them. On the other hand, if he has a negative view of another source, such as a newspaper, he will tend to disregard information from it. However, if the paper was eventually seen to give useful information, it would in time be regarded positively. There is a natural tendency to develop the same attitude towards the source and its information. Most of the following points are examples of this general rule.

Relevance. To make a message relevant to an audience, you need background knowledge of its present concerns and long-term interests. During a long-term drought, graziers will show little interest in activities designed to promote improved pastures or soil conservation because their immediate problem is survival of the business.

Your message may be relevant but your target audience may not see it as such. You may overcome this problem by using familiar words and building on known concepts to relate the new to the old and therefore smooth the transition to the unfamiliar.

Simplicity. Reduce ideas to the simplest possible terms. Simplicity of language and economy of words make for clarity of communication. Generally, the simpler the words the more likely they are to be understood. However, simplicity really relates to the experience of the person receiving the message. What is simple to one person may be complex to another.

Technical terms easily understood by trained agriculturalists are usually different from those used and understood by farmers. Photographs, diagrams and demonstrations are usually more effective than words.

Definition. Define a concept before developing it and explain it before amplifying. Even simple terms to you can be unclear to others. The use of jargon also creates problems of clarity for those not acquainted with the words.

Structure. Organise a message into a series of logical stages. Texts on public speaking emphasise the importance of making clear the order or structure of a message to increase the audience's understanding.

Repetition. Repeat the key concepts of the message. Repetition is particularly important in oral communication.

Some possible strategies in oral communication are:

- repeating key ideas;
- restating difficult ideas;

- recycling ideas wherever feedback indicates they are misunderstood; and
- using examples, synonyms, analogies and periodic summaries.

Repeating the same message through several different sources increases its effect. People are more likely to be convinced by what they see at a field day if they have had prior knowledge of the topic from the media.

Comparison and contrast. Relate new ideas to old ideas; associate the unknown with the known. This principle of comparison and contrast, which shows the similarities and differences among objects, events, people and ideas, is essential for clear communication. People can understand new unknown ideas more clearly if they are able to relate to old known ones.

Problems in communication

All of us receive messages and interpret them through our own experiences. This is a filtering or refracting process where messages are interpreted through our own private world and changed from what the initiator intended. When communicating with others we should be aware of this process and use the principles of good communication to overcome it. There are several common causes of these problems in communication.

The **physical environment** may create conditions under which communication cannot take place effectively. A stuffy, warm room will make it difficult for people to concentrate at a meeting. Likewise a field day audience will not be attentive if they are out in the sun or a cold westerly wind.

The **preoccupation** of a person can create barriers. An individual who is focusing on internal thoughts may allow little of the message to get through. In both face-to-face and group situations, people can be so preoccupied by their objections to other ideas that they are unable to concentrate. If they are allowed an early opportunity to express their views, communication will be more successful. This underlines the importance of a two-way flow of information.

Hostility may distort messages. This can occur when communicating with an individual with whom you are angry, or due to the carryover of a recent adverse experience. The subject matter could also arouse hostility. People in a hostile confrontation often distort messages from the other person, which in turn provides fuel for further hostility.

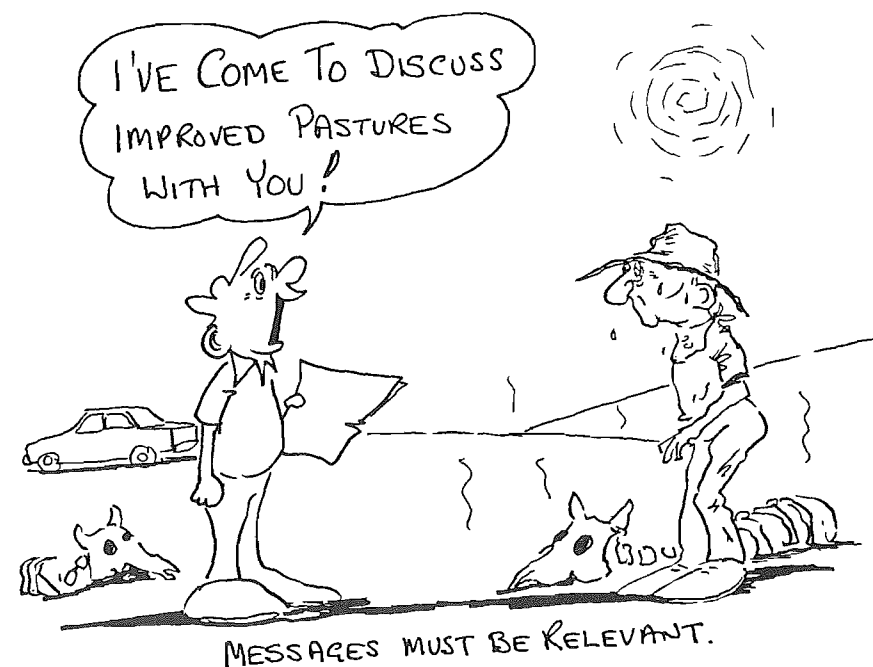
Stereotyping occurs when a prior mental set about the source of the message prevents us from accurately receiving it. For example, we might judge the quality of a message not by its intrinsic quality but by the presenter's clothes or accent. We might prejudge people's abilities and intentions because they come from a particular social group or area.

Past experience can also lead us to prejudge people and situations. This should not be regarded as an aberration because people have no way of forming reality other than through their own experience. If clients have gained benefits

from contacting you in the past, they will readily contact you in the future and take a positive view of the expected outcome.

Defensiveness leads to filtering of messages received. The insecurity of the individual tends to distort inputs into accusations and replies into justifications. Because arguments arouse defensiveness, it is rare for one side to convince the other. If you sense defensiveness in one of your contacts, it is best to back off from any argument and perhaps arrange for him to observe the issue of contention where he can draw his own conclusions.

The means of alleviating these problems of communication are as varied as the individuals you must deal with. The key, however, is to become aware of the conditions which interfere with the communication process and attempt to modify your behaviour so that messages are less often and less severely distorted.



Further reading

Bardsley, J. B. (1982), *Farmers assessment of information and its sources - an investigation using interactive computer techniques*, unpublished Ph.D. thesis, University of Melbourne, Melbourne. (Contains an excellent review of extension philosophy in the literature review.)

Hawkins, H. S., Dunn, A. M. and Carey, J. W. (1982), *Agricultural and Livestock Extension, Vol. 2. The Extension Process*, Australian Vice-Chancellors' Committee, Australian Universities International Development Program, Canberra (see Part 1).

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CHAPTER 2

FACE-TO-FACE COMMUNICATION – FARM VISITS AND OFFICE CONTACT

Introduction

As an extension worker you constantly converse with primary producers and agribusiness people. It is important that you handle these conversations well, showing subject knowledge and enthusiasm for the job. The impression made in face-to-face contact is powerful and affects an extension worker's public standing in the district.

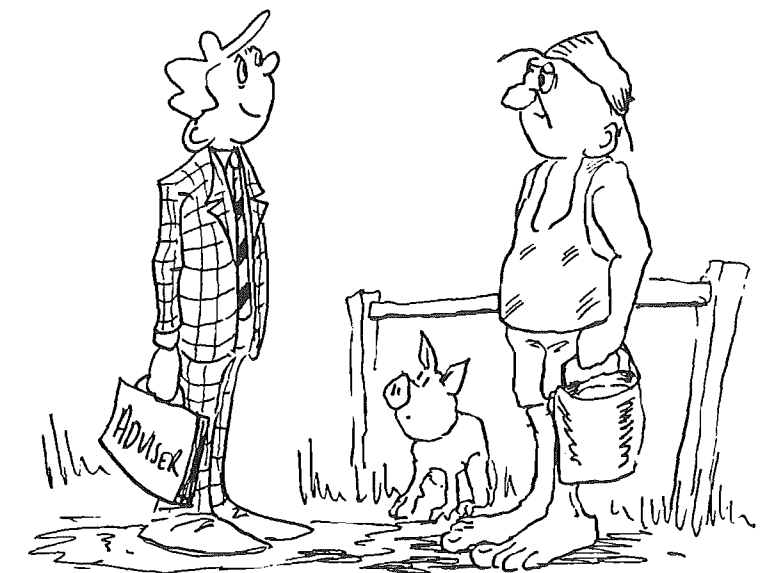
Initial contact

Conditions which put a person at ease are favourable for a free exchange of information and ideas. If you are calling on a farm, try to call at an opportune time. For instance, avoid calling at regular meal times unless you know the person well. A courteous and friendly greeting can help put callers to the office in the right frame of mind for a frank and open discussion. If you have receptionists, you might need to help them develop a routine for handling office callers helpfully and efficiently.

First impressions

Be pleased to meet people, give a firm handshake, smile and put them at ease. If you are nervous, try not to appear so, as nervousness on your behalf can be infectious and upset the other person too.

Our expectations of people can blind us to the true facts. Don't draw hasty conclusions about people. We often expect people in a particular occupation, age group or social group to behave in a



particular way. For example, faces with wrinkles at the eye corners are seen as humorous and easy-going; those with high foreheads are often seen as more intelligent and dependable; red hair goes with a quick temper, and so on.

Remember names

We all like to be called by our name, so it will help to gain rapport if you use other people's names. Upon introduction, ask a person to repeat his name if necessary and use it as often as you can during the conversation so you remember it. You may find it useful to write down the name and a few details about the person when the dialogue is finished.

Breaking the ice

Seasoned extension workers often get the conversation rolling by mentioning something both have in common or a special interest or hobby of the other person. However, this can be overdone, and a few general questions to get the other person talking are often just as effective. Take a genuine interest in the other person but don't try to obviously win favour. If you are not sincere it will soon show through.

Rapport

If you create the right atmosphere in the initial stages of the discussion, you will have good rapport. The exchange will be warm, relaxed and friendly.

Confidence must be preserved and developed; simple incidents can easily destroy it. It's all too easy to show shock, impatience or displeasure when others voice views which run counter to your own. You can upset people not only by what you say, but also by how you say it, and even by your gestures and facial expression. As a result, the farmer may apologise or become aggressive and after that, the free expression of ideas becomes difficult.

If rapport breaks down or you have called at an inconvenient time, politely finish the conversation and leave as gracefully as you can, leaving the opportunity for a further meeting.

Gaining information

Experienced extension workers sometimes take notes during an interview. This can show a more thorough interest in the producer. However, don't be so engrossed in note-taking that you fail to make eye contact with the producer or follow what he is saying. If he mentions something of a personal nature, put the pen down to show that you realise that the information is confidential.

Asking questions

Skilful questioning allows you to understand how the other person thinks and feels.

It's best to start with general questions to stimulate conversation rather than plunge too suddenly into difficult areas of conversation which may seem a threat to the producer.

Ask 'open' questions, which invite people to express their opinions. This shows you are sincerely interested in their ideas, and you respect them as people.

Open questions allow for some free expression in the reply; they cannot be answered by a simple 'yes' or 'no'.

For example; 'What is your opinion of?', 'What do you think about?', 'How do you find?', 'What has been your experience with?'

'Reflective' questions can be used to get a full expression of opinion and feeling. Rephrase the farmer's ideas and get him to elaborate.

For example, if a person has responded to some ideas you have put forward by saying 'There seems to be an awful lot to think about', you might say 'You seem to have some doubts about this method?'



Visits are necessary to give recommendations for the individual property.

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By thoughtful questioning you can often avoid giving direct advice. If you are tactful, you can often draw out the errors in a person's line of reasoning, so that he discovers how he can help overcome his problem.

Sometimes in elaborating on what he has said, the producer discovers new relationships between familiar things. Connections are established between previously isolated compartments of thought and in the process, learning occurs.

Listening

Listening is hard work. The key to good listening is to see things from the other's point of view. This empathy is derived from your knowledge of the other person's background, values and attitudes.

When you practice empathy you don't pass judgement or argue. You listen to gain an understanding of how the problem looks to the interviewee in the light of his information sources, goals, background and attitudes.

Your willingness to understand another person implies a respect for that person. This respect maintains and builds the other person's sense of self respect and dignity, and often results in a reciprocal feeling of respect between the two people.

To maintain your listening at an effective level, you should:

- try to anticipate the other person's next point;
- sum up in your mind what he has said, as well as hearing the point he is making; and
- look behind the statements for attitudes and feelings that may help to understand the other person's point of view.

If you do this you can help him sum up his points, as well as clarify them, by asking at critical times questions such as: **'So you really feel that fertiliser has not been profitable in the past?'**

Giving information

- Find the person's level of understanding of a subject before trying to impart any information. Start at the level of the producer's understanding and try to build on it, and at the same time don't confuse him with unnecessary jargon and don't show condescension.
- Judge how much to challenge the producer's assumptions and general approach to an issue. One extension officer can get away with a particular style which gets another into extreme difficulty.

- If the client does not know what his goals are, or cannot choose between them, you may have to gently steer him towards a course of action. Taking this responsibility can be risky unless you have a very good knowledge of the client's situation.
- A client may have made a decision, but lack self confidence to act. He may seek only confirmation of and backing for his decision.
- An effective way to operate is to discuss and test a range of alternatives with the client. If a producer contributes ideas, he will be more likely to act on the conclusions of a discussion.
- You can usually judge the client's management skills from his conversation and the appearance of his property. Don't encourage him to start an enterprise that demands a higher level of skill than he demonstrates in his present enterprises.
- Your suggestions and advice should acknowledge that each property is a dynamic system and that changes in one enterprise can affect others. Even within the one enterprise, improvements can have unforeseen consequences. For example, an intensification of the stocking rate, while highly profitable in normal seasons, can lead to heavy losses in drought unless new strategies are adopted when the season turns dry.
- Mention other farmers and graziers who are using practices which you commend. If possible, arrange for a visit to these properties; your information will be more readily accepted.
- Don't over-present ideas. Introduce them gently, even to the extent of letting the producer argue the points in favour of them on your behalf.
- Don't assume that the person who consults you is the sole decision-maker on the property. The spouse or other family members may have a major influence, and lending institutions have the power of veto over spending decisions.
- If the producer is impatient or in a hurry and/or just wants clear recommendations on a simple problem, you can do away with the introductory stages and help him as quickly and accurately as possible.
- You can project an image of technical competence by being able to readily quote commonly used fertilisers, chemical application and sowing rates. The common ones should be committed to memory and others kept in a field book for easy access. You can also carry a book of photos to illustrate any points which you find difficult to describe. Photos can make conversation more interesting and increase the range and depth of discussion in a natural way.

Summing up

If you give information during an interview, it is often helpful to sum up at the end. Give a written summary of advice whenever practicable and keep a carbon copy for your own records.

Termination

Thorough discussion with another person can be exhausting, so after a time you often tend to repeat yourself. The quality of the exchange falls rapidly and at this stage you would be best to leave. If you are visited at the office and the conversation has gone 'stale', you can hint that the interview is over by an air of finality in your voice.

Follow-up

If you have made a property visit and given recommendations, it is often worthwhile to call back to see how they have worked out. If you are new to a district, this helps build your local experience.

If a client who consults you does not opt for your recommendations, he may have good reasons for doing so. He may not share these reasons with you, however. The lure of other investments, the burden of additional commitments, effects on other enterprises and family circumstances can all play a part in his final decision. It is your job as an extension worker to recognise that personal and family matters play a part in decisions but it is not your role to intrude on these issues.

Producers use many different sources of information and they often consult separate sources for different types of decisions. They then may seek second opinions on some points and use extension workers as a sounding board for advice given by commercial firms. They integrate facts and counsel from many origins to run their property but they may not give the total picture to each person they consult.

Credibility

New recruits to extension are often worried about how credible they are in farmers' eyes. Their credibility is rarely an issue if they work with the data that the client gives them, testing alternatives with him and describing the experiences of producers in similar situations. Relating to the clients and

satisfying their needs rather than instructing them in the latest technology is the way to build credibility.

When you are asked to solve a problem or give a recommendation which demands extensive local experience, you need to be honest about your limitations and perhaps consult others with more local knowledge.

Property trials or observation areas, particularly if you are new to a district, build your practical experience and the number of farmer contacts. Developing local knowledge with producers builds your standing in the district and helps prevent your being seen as merely the purveyor of second-hand information.

Extension workers who are well known and trusted in a district are sometimes asked for advice on family matters, such as children's education or off-farm investments. However, you don't gain credibility by seeking this role.

Difficult situations

With people who are slow to talk and who don't appear very responsive, you have to be prepared for long pauses in the conversation. We all tend to be uneasy about silence, and when the other pauses we tend to feel that it is up to us to make a remark to keep the conversation moving. However, a brief silence accomplishes two things: it indicates to the other that you think he has more to say, and it places the responsibility on him to fill the pause.

When dealing with a naturally reticent person, it helps if you can ask open-ended questions which encourage him to give opinions rather than questions that can be answered as 'yes' or 'no'.

The talkative person is not difficult to handle if you can interject quickly when you have a chance and steer the conversation to cover relevant topics. It is no problem if the other person monopolises the conversation, provided he talks about subjects in which you are interested.

When dealing with an angry person, it is usually best to let him first express his anger. Sometimes just having an audience to get something off his chest helps an angry person to forget it and proceed to more productive areas of thought.

If the person has a justified complaint, admit to any errors that have been made and apologise if appropriate.

If his complaint is unjustified, you might try by skilful questioning to get the producer to see that there is a weak link in his argument. '**Straightening things out**' is a useful way of describing this procedure. The producer and you are involved in straightening out a misunderstanding. If, on the other hand, you show him he is wrong, you make it more difficult for him to change his mind, since you tend to humiliate him.

The regulatory interview

The regulatory situation is more difficult than when you are seeking information or giving advice. Many experienced officers have been able to 'defuse' the situation by adopting the approach that they and the producer have a mutual problem in complying with the regulations.

'We have a bit of a problem with these cattle' is a less threatening start to a conversation than 'These cattle are ticky'.

It is sometimes helpful to point out that the regulations were asked for by the industry.

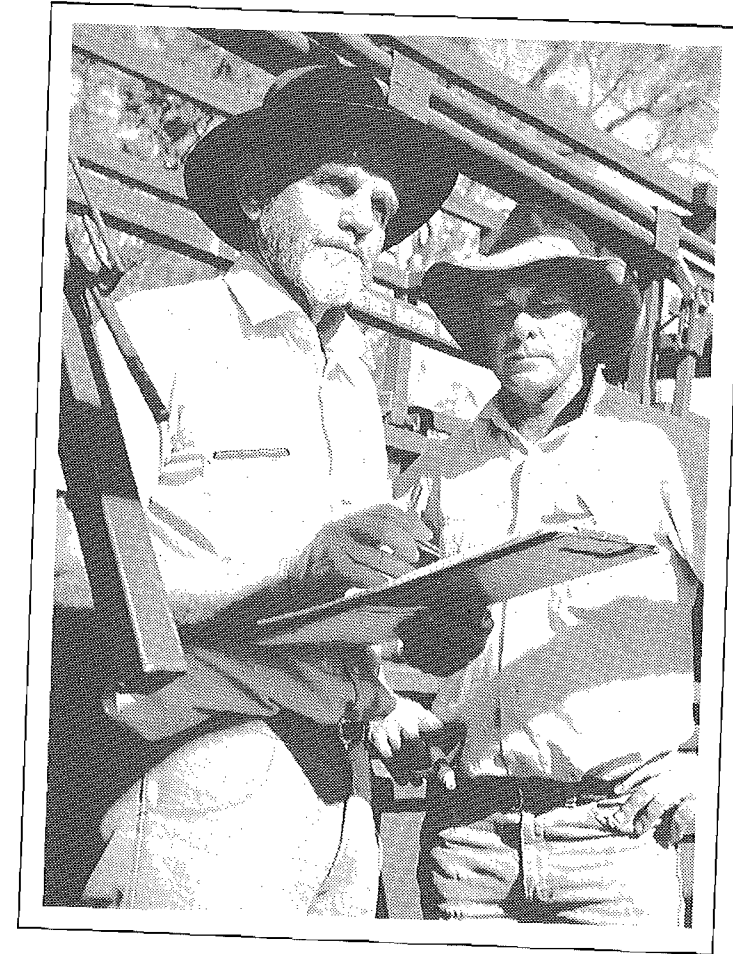
If you encounter resistance, it is usually best to stand your ground and patiently but firmly and persistently insist on compliance.

Farm visits and the extension programme

By using knowledge of district networks of friendship, it is possible to use farm visits to one landholder to influence several others. Producers who are respected and sought-after for advice can be given particular attention. This can take the form of follow-up visits to see how recommendations have worked out, and deliberately broadening the conversation to include the concerns of his contacts. This could be backed up by the occasional mailing of relevant literature. These methods will enable you to develop a programme to influence a group through face-to-face contact with key individuals.

Further reading

Anderson, A. M. (1979), *How Advisors Advise: Agricultural Extension as a Social Process*, Department of Extension, School of Management and Human Development, Hawkesbury Agricultural College.



Recording data while on farm visits can help you build up a bank of information on your district.

CHAPTER 3

EXTENSION WRITING

Introduction

Despite the extensive use of radio and television in modern communities, the written word is still the most important teaching and recording medium. Queensland extension staff recognise this by regularly writing for country newspapers throughout the State and direct-mailing about 40 newsletters to their clients.

Important points to come from research on extension writing are:

- 70% of Australian primary producers buy a rural weekly newspaper;
- the average primary producer spends one to two hours per week reading agricultural publications;
- progressive farmers read more technical journals, read more systematically and read at a higher level of abstractness than others;
- written material alone can be the major influence in producers altering their practices;
- papers and journals can act to some extent as an alternative to personal contact and field days; and
- farmers who subscribe to numerous agricultural papers and journals usually have a high level of contact with their department of agriculture.

Radio and television are suitable for short, simple messages. Because the listener cannot go back to listen or view again, the messages must be uncomplicated and brief. On the other hand, the written word can be kept and reread, and if not properly understood, discussed with others. Many primary producers keep journals and written recommendations for later reference; sometimes for many years.

Newspaper articles

Newspaper articles can be used to alert or advise readers of an event, occurrence or practice — to start people thinking — and to prompt them to seek more information.

This means that it is often not necessary to tell the total story about a particular subject but to supply enough information to whet the reader's appetite.

The editor

Meet the editor before you supply material to the local paper. Get to know what he wants in both style and content. If he knows you and knows that you write well, your material is less likely to be edited. When articles are edited there is the possibility that they may give the wrong impression.

Some newspapers will publish technical information, provided it is presented concisely and intelligibly. Study the format and the types of stories used by the newspapers in your area and follow these as closely as possible.

Getting started with your writing

The first thing to consider is your purpose in writing. Do you want readers to come to a field day or to seek more information about it? Do you want to promote discussion about a practice, for example, conservation cropping? Do you want to remind readers about a seasonal practice, such as contour bank maintenance?

Having decided the purpose, jot down the information that will help you achieve this end. Then begin writing your story using a few simple rules. These can easily be remembered by the acronym RAFTS.

Now let's see what the letters stand for. They are the key to effective writing:

- R is for reader
- A is for authority
- F is for facts
- T is for twist
- S is for shortness

We will now take each word separately.

The reader

Country newspapers are most interested in publishing topical local stories. Editors believe their readers obtain enough news of other areas through the metropolitan media and so look for local content.

For example, in Dalby a story headed 'Heavy Fertilisation Needed for this Year's Dalby Wheat' will create more attention than a story headed 'Wheat Growing in Queensland'.

The reader is the person you are writing for, so when you sit down to write, put yourself in your reader's place and write so that he can understand what he's reading.

Many people fall into the common trap of writing to please themselves, like the fellow who wrote in a branch report:

In this impatient and fast-moving world political stability and predominant attitudes of government become of crucial importance. Programmes aimed at aiding primary production although backed by deeply involved scientific endeavour can meet constraints and disruption through domestic political conditions imposed by pressure of non-participating or opposing cross-sections of the community. Every action in pest control therefore must be assessed in respect to an ever-increasing complexity of factors in addition to the direct effect on the pest species.

If he were following our first rule, and thinking of his reader, he would probably have written:

Social pressures can hinder pest control.

Six words instead of 76!

By thinking of the reader as you write, you remove most of the barriers to communication, and provide the smoothest path for facts to be transferred from one person to another. You should know your readers' interests and be able to pitch your stories to their concerns of the moment. For example, if your audience is composed of banana farmers, you could start your story on leaf spot control:

BANANA CROPS DEVELOP WELL WITH RECENT RAIN

'Banana crops have responded well to recent falls of rain', said Mr Blogs from the DPI yesterday.

The rain had not been associated with any high winds which often damage crops at this time of the year, he said.

Mr Blogs warned growers that the humid conditions were often associated with attacks of leaf spot and that growers should spray, etc.,

.....

Authority

The next word, authority, draws attention to the necessity of backing the facts you present to the reader.

Look for an authority: write under your own name or quote someone.

- Remember that farmers learn from farmers. Find a leading farmer, or someone in the district whose example is followed, and quote his actual words about what he has done or seen.

- Quote the industry leader, the research worker, or someone else the community looks up to.
- Get good photographs. These are authorities in their own right as people believe what they see.

What better extension could you imagine than a story in a newspaper describing a successful farmer's experience, quoting the farmer himself, and including a clear photograph of the farmer and his property?

An example of a good story with plenty of authority which was accompanied by a photo appeared in a western newspaper.

Graziers in the St. George district have had good results by using the creep grazing system.

In the prime lamb industry, where setbacks must be avoided, creep grazing is helping the lambs compete with the ewes for feed.

One of the St. George graziers, Mr S. McClymont, of Bauhinia Downs, said yesterday that creep grazing had made the most of available feed for his lambs in the recent drought.

If you can't find anyone else, quote yourself; or better still, quote yourself as well as others.

Experienced and practical extension workers use this 'over-the-shoulder' technique.

It means that, over his shoulder, Farmer A hears leading Farmer B describing to others some particular practice he has used with success. Farmer A hurries away to do likewise, saying, 'If he can do it, so can I!' He has not been told or advised to do something. He has been encouraged to do something in the best way possible: by example. You have given your writing authority by identifying it with local people. If readers want to know more, they can consult with the person quoted as an authority. Featuring local people leads to productive exchanges of information between producers. The extension worker is not always written up as the expert.

Facts

Most of us in our jobs find it necessary to obtain useful facts and to pass them on to others. Now, the virtue of written facts is that they are a permanent reference. Therefore, they must be authentic. It's part of your job to get the right facts and to check them before you use them.

Having done so, you assemble them in order of importance, and present them simply, directly and in a positive rather than a negative way.

Say: 'It is a good idea to provide feed for the winter shortage.'

Not: 'It is not a good idea to allow yourself to be caught without feed for the winter shortage.'

Twist

By some means you have to get your reader to start reading your article. Nothing you say, no matter how well you say it, can be effective unless you induce the farmer to start reading. To introduce a twist, use the following:

- news, or unusual angle, or topical angle (supported by photographs); or
- human or local interest (local farmer's experience/profit, safety, comfort).

And here, please note again that the most effective extension writing is that which is supported strongly by good photographs and a profit or benefit motive, as in this example.

'Loafing acres' are being put to work as improved pasture on many dairy farms in Central Queensland. These are low-producing areas of native grasses, degenerated Rhodes grass paddocks and low-yielding crop land.

Many Central Queensland farmers report success in turning them into high profits.

'This pasture was established last year,' Mr Jones said, 'and it has made a big difference to my income already.'

'I intend to develop every available acre over the next three years.'

Naturally you would get photographs of Mr Jones and his pasture when you get the quotes from him.

Don't make your stories too tricky or gimmicky in an attempt to put a twist in them. If the twist is overdone you will only irritate your readers.

Shortness

If you put yourself in the place of the reader, you will not try to inflate your ego by being pompous, by using big words and big sentences. You will strive for simplicity, that marvellous aid to communication. Use short words, short sentences and short paragraphs.

Don't make the mistake of thinking you have to use **all** short sentences and paragraphs. If you do, the result will be too staccato and monotonous. Vary sentences and paragraphs a little, and use some connecting words and phrases so that you get a smooth flow, as in this example.

Mr Younger said that creep grazing allows the lambs to feed ahead of the ewes. As the ewes eat out one paddock they are moved into the one which the lambs had been grazing.

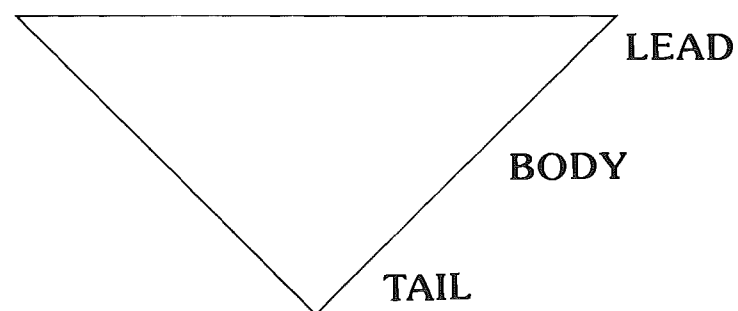
The lambs then are allowed to creep graze the next paddock.

They soon learn. They quickly recognise the creep gates which are erected near water points or where the ewes are inclined to gather.

Structure of your story

Newspaper and newsletter stories are best structured with **all the key information** in the first paragraph. This allows the reader to immediately identify the topic and its relevance to him. The least important information is kept to the last paragraph, which the editor may cut off to fit in an advertisement or another story.

This is called the 'inverted pyramid' style and consists of:



The **lead** might consist of one to three paragraphs. It contains the most important facts, and invariably includes the twist.

We also have a recipe to ensure that important information is not overlooked. This is an aid used by newspaper reporters throughout the world. They call it the five Ws.

Who? what? when? where? why? (and **how?**) are the key questions for your first two paragraphs.

An example:

Recent research in Queensland and southern states has shown that a chemical used for worm control in livestock is also effective in controlling post-harvest disease of bananas.

In the first two paragraphs, the main facts are presented, and answers are given to the questions **who? what? when? where?** and **why?**

Sometimes not all the Ws are answered in the first few lines. But you usually answer as many as possible.

For general writing, you should use the six key questions, including the **how**. This is vital for effective writing of reports, correspondence and extension articles.

Now you sort out your information in its order of importance for the **body** of the item. Place the least important facts last because the editor or compositor may have to shorten your article; he does so usually by discarding the last part.



If you are giving recommendations, give facts and supporting information in a logical order which helps your readers follow the article and implement each step. If the information needs to be lengthy and detailed, the best strategy is to alert readers to the benefits of the practice and let them know where they can obtain further information. This is more effective than attempting to cram the details into a newspaper item and confusing your readers.

It's often a good idea, however, to put a sting in the **tail** of your story by repeating the main facts in a different or novel way. You run the risk that it will be dropped, of course. But if it isn't, then you have made sure that the last (as well as the first) thing the reader reads is the most important. And this is probably the best way of spurring him into action.

Once you have written your article, check it against the following two lists.

First check-list

1. Does it instantly attract attention?
2. Is it easy to read?
3. Is the message clear?
4. Does it show how the reader can benefit?
5. Are clear, story-telling photographs included?

Second check-list

1. Cut out:

words that aren't needed
uncommon words
dull words
negative words
ambiguous words
words of more than two syllables (where possible)
trite phrases

2. Substitute:

interesting, picture-making words
simple words
positive words
words that stimulate
words that clarify or explain

3. Improve the sentences by:

breaking up long ones
simplifying complex ones
correcting ambiguous ones
making them flow
changing impersonal phrases to personal phrases

4. Improve the paragraphs by:

making them short but varied
connecting them logically
connecting them smoothly

5. Correct:

spelling
grammar
punctuation

Examples of newspaper stories

Stories can be used for various purposes, as the following introductions show.

Publicity for a forthcoming event

NEW AND DIFFERENT SUMMER CROPS SEMINAR

New and different summer crops will be reviewed at a seminar to be held at Dalby next Friday (August 29).

The seminar has been arranged by the DPI and Consolidated Fertilizers, with the cooperation of grain merchants and consultants Peter Wylie and Associates.

DPI extension agronomist at Dalby, Geoff McIntyre, said a reason for holding the seminar was that Downs farmers are looking for new and different crops. Extension agronomists received many enquiries seeking this type of information.

Farmer example

CONTOURS, FERTILISER HELP TO LIFT DAIRY PRODUCTIVITY

Planned farm development featuring integrated soil and water conservation structures is paying off for Crow's Nest district dairy farmers, Derek and Lila Genrich.

In 1979, Mr Genrich returned to buy the 217 ha family farm, 'Pechey Flat', 15 km north of Crow's Nest after a six-year teaching career in Perth.

He found a patchwork of 70-year-old depleted cultivations, sterile salt patches and unthrifty crops.

Today, he milks 50 Freisian cows in a modern five-a-side herringbone shed and grows all their summer and winter fodder requirements in stabilised contour-banked paddocks.

Technical information using a by-line

MINERALS IMPORTANT FOR DAIRY COWS

By Alan Murray, DPI, Toowoomba

Milk is high in minerals, so cows need mineral supplements to maximise both milk production and reproduction.

For example, unfertilised crop or pasture contains enough phosphorus for cows to produce only 8 to 10 litres of milk each a day. Reproductive performance will also be below optimum.

Well-fertilised crops or pastures contain enough phosphorus to support about 12 litres of milk/cow/day. Phosphorus supplementation is needed for high production.

Newsletters

Newsletters allow direct communication from extension staff to primary producers. There is no need to reduce technical content of articles to make them more interesting to urban readers, as is often needed with country newspapers. Newsletters have the added advantage that they can rapidly respond to clients' needs and even be an integral part of the two-way flow of information between extension workers and their clients. They can give news and advice for industries within an area, or cover one particular industry or technique. For example, in 1987, extension staff in Central Queensland began a conservation tillage newsletter which contained articles from extension staff, farmers and agribusiness.

Extension workers can mention points of interest seen on recent property visits, common problems encountered in the district, or topics which are on producers' minds. Some newsletters have successfully encouraged producers to send in letters for publication. Such participation further stimulates reader interest.

Newsletters are popular in the pastoral areas where the long distances between properties make frequent contact both among producers and between producers and extension staff difficult.

Newsletters usually begin with an introductory note by the editor. This mentions weather conditions and other district concerns and comments on how the articles relate to these issues.

This introduction has a personal and conversational style, while the articles are more matter-of-fact. Articles appear under the names of the authors and usually do not include direct quotes. They should answer key questions which producers have on their minds at the time.

Here is an article in a newsletter style which answers practical problems in a direct manner.

Cattle with Ken Howard

SHOULD GRAIN BE FED TO CATTLE ON SUMMER CROPS?

Summer crops are often disappointing, so some cattlemen have enquired about feeding cheap grain in an attempt to finish cattle quicker.

One graingrower had feed wheat worth \$75 per tonne, which on the surface did not look to be a bad proposition for supplementing cattle grazing on summer crops.

How much grain will they eat?

Could you feed the wheat and get a substantial improvement in condition?

What will the economic result be?

Local newsletters do not use sophisticated printing or layout methods but they are highly appreciated by their readers, especially in western Queensland. A survey by Wissemann and others showed that people realised the limitations under which newsletters were produced and did not expect a glossy presentation. They appreciated even simple line drawings if they clearly illustrated an important point.

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CHAPTER 4

RADIO IN EXTENSION

Introduction

Despite the importance of television in most Australian homes, radio still plays a significant part in modern entertainment and communications. Television has not taken radio audiences; it is an addition to them. There are now more radios in operation than ever before: the small transistor, the car radio and the workshop radio. Radio is often used as a companion for lonely or isolated people who want some background sound while going about their day-to-day activities.

Unlike other media, radio does not necessarily command 100% of the audience's attention. Listeners are usually doing something else as the radio plays. Despite this, radio can be effective in giving messages. On some items it can be more effective than mass-circulation daily newspapers.

Radio will not take the place of meetings, field days, newspapers and farm visits, but it does complement them.

When do we use radio?

- Radio is suitable for giving simple, brief messages. If you have several aspects of a topic, it is best to make a number of short radio items on each.
- Radio appeals only to one of the five senses: hearing. The ear cannot assimilate information as quickly or in such quantities as the eye. So you'll be limited to some extent by the amount of material that you can impart to your listener. The audience can't ask questions, or relisten to a piece in the same way as they can reread a paragraph of a book. Nor do they stand by with pen and paper to jot down technical details.
- Radio is best used to make listeners aware of a subject. New interest is often awakened with an item on radio and the listener will often seek further information.
- Radio listeners usually want to be entertained, not educated, so items should be brief and topical. Your opportunities to use radio will be limited and because of this you will have to make the most of any chances.

- Radio maximises your coverage in the media if you seek opportunities for follow-up items and give comment on current events. A broadcast item about good local rain could be followed up by comment on restocking or crop planting prospects. Heavy storms provide the chance to broadcast items on soil erosion control.

Know your audience

It is important to keep your listener in mind. Always know to whom you are speaking. If, for example, you have a programme on tick control, aim it directly at beef producers even though there will undoubtedly be people with other interests listening to your programme. Remember, however, that you will have a mixed audience, particularly in the early hours of the morning when people may be having breakfast. The morning steak is not going to taste very pleasant if it is digested with a commentary on cancerous lesions on beef cattle.

Your message

- Radio is suitable for simple announcements such as field days, conferences, farmer meetings, or other organised functions.
- Handy hints are another excellent source of material for radio. Brief reminders can be given on a variety of farming practices.
- New discoveries in research or news of field trials can be presented to make listeners aware of a topic. In these cases, you should invite them to seek further information from the office concerned.
- Record yielding crops, special extension programmes, surveys that you are carrying out in your area, or brief details on a visiting expert together with his history and reasons for being in the district, make excellent news items.
- Urgent messages on disease and pest outbreaks, together with control recommendations, are very effective over radio.

Messages should avoid technical detail. If you have new plant varieties to recommend, concentrate on the names of the varieties, their general characteristics and their advantages to the grower. You might have time to add that they are planted at heavier rates than the old varieties and should be planted deeper but do not attempt to specify rates. It will make the item dull and the listeners will be unable to remember the figures.



FOR RADIO IT IS NECESSARY TO HAVE IMPACT

Length of item

Whether you interview a primary producer, give a scripted talk, or are interviewed by a radio journalist, your item should not be longer than three minutes and should be capable of being edited to shorten it further.

A country station may have only five minutes devoted to farming news. To cope with your item, the announcer might summarise your message and then play 40 seconds of your tape, including some of your striking points, to amplify his summary. The more interesting your message and the more lively the language you use to describe it, the greater your chances of having it aired.

Generally, three to five minutes is ample time for an interview. An outstanding personality being interviewed on an intensely interesting subject may take up 10 minutes. However, once again, it is often a problem to obtain sufficient air time.

Know your programmes

Material must be tailored to suit the various types of programmes available. For instance, a statement on the district average crop yield could be made into either an item for a news broadcast or a spot in the country breakfast session. Either way, the items should be written to conform with the radio station's format.

Methods of obtaining a record crop yield would be best covered by an interview with a successful producer. This item would be suitable for a rural programme such as the country breakfast session or the country hour.

Relationships with the media

Radio journalists are keen to present their listeners with useful information. They are not out to trick you or misquote you to create controversy. However, their approach to a story may be different from yours, with their emphasis on the novel or newsworthy element at the expense of technical detail. The journalists are the specialists in their medium, so be guided by them.

If your interview does not go to air, it means that the item was not sufficiently interesting or informative, and in some cases entertaining, to warrant air time. Air time is never guaranteed. The journalist does his job in interviewing you but the final decision may be made by the news editor.

If you are misquoted or the item comes over in a misleading way, don't angrily ring the station and demand a retraction. Explain that there has been a mistake and the station will usually correct it by broadcasting another item. This approach gives you another opportunity while maintaining your relationship with the station.

Some researchers think that their subject is too difficult to condense into simple terms which the listening public can understand. If a scientist insists on complex material being included in an interview, it will have little chance of going to air.

When contacted by the media about policy issues, your first move is to decide if it is in the organisation's best interests to comment. If you don't want to comment or can't because senior personnel have responsibility for policy, explain your position to the representative and give him the name and telephone number of the appropriate person. If you are in a position to comment, don't be caught off balance. It's perfectly reasonable to tell him you are busy but will phone him later, giving you time to gather your wits and do some homework on the subject. If it's a touchy subject, sit down and ask yourself 'What are the five questions I'd least like to be asked on the subject'? Get the answers and you will feel a lot more confident.

Personal presentation

Two major concerns of those about to be interviewed are the quality of their voice on air, and pauses and gaps in the tape. Both these worries are unfounded.

If your tape is being played over country radio, most of those listening will be primary producers. If you speak with authority and are telling them something that will directly affect them and their families, they will not care how you sound. For example, if a stock inspector was on air about rearrangement of stock permits, the local graziers would be so intent on the message that they would pay no attention to the voice delivering it.

Hesitating and faltering half-way through a sentence is not a problem because a good radio journalist, to maintain his own credibility, will edit the tape to bring it up to broadcast quality.



A radio journalist will edit the tape to remove any embarrassing pauses in the interview.

Types of radio items

The interview

The radio journalist usually begins the interview with a general discussion on the topic with the interviewee. This helps build rapport, sets the interviewee at ease and clarifies the main issues to be covered.

If, as happens occasionally, you are faced with an inexperienced journalist who has not done his homework, help him understand the subject and suggest key questions. He will remember your helping him through and will be likely to give you future interviews.

If you are to be the interviewer, you should not be dominant. Ask questions which would occur to the listener, and be brief and to the point. The interviewer should be neutral and not dominating, but at the same time express his own personality. Do not come out with statements like: 'I agree with that' or verbal punctuation like 'That sounds interesting'.

The flow of questions and the order of material is important. The most significant points should come first. For radio it is necessary to have the impact at the beginning.

It is best to cover only one subject in an interview. However, if you have an outstanding personality as an interviewee you could cover more than one subject, although air time might be a problem.

Be flexible: don't stick to set questions if they don't follow from immediate conversation.

The success of a radio interview depends on the questions you ask. Ask questions that begin with how, what, when, who, where and why. Avoid long monologues, and give specific examples and illustrations. Occasionally call each other by name during the interview.

Scripted interviews are generally failures and few people can sound natural when they read, but have a few notes or topic headings to give the interview some direction.

Question-and-answer panels

Radio question-and-answer panels have been used successfully in some districts. A panel of experts answers questions put to it. The topics can be sent in by listeners, or can be taken from the office enquiries during the previous week.

The *ad-lib* talk

Very few people can do this well. The broadcaster must have the temperament suited to this form of presentation. He must be able to think quickly so that his speech remains fluent.

If you are giving an *ad-lib* talk, you must know your subject in great depth so that you do not have to pause and try to think of vital information. You'd be wise to keep notes handy so that you have the major points in front of you.

The scripted talk

The scripted talk is easy to prepare but much harder to deliver than the *ad-lib* talk. One of the advantages of the *ad-lib* talk is that because you are making conversation, you find it much easier to come across in this style. The major disadvantage of the written talk is that it is likely to sound like somebody reading from notes. You can practice by reading aloud into a tape recorder and then checking to eliminate any faults, but very few people can make a scripted talk sound natural.

Writing for radio

Writing your script

Decide on the purpose of the broadcast and the message you wish to leave. Then jot down the two or three main points that the listener needs to know. Structure your item as follows:

- a provocative opening statement or catchy phrase to catch the listener's ear;
- a subject or summary sentence;
- main supporting statements;
- other supporting statements;
- summary and conclusion.

When writing for radio, you are writing for the ear and not the eye. Therefore, you must write your script differently from the way you write a newspaper or journal article.

Radio scripts must contain short, simple and easily understood sentences. If a print media story has long, complicated sentences, it can be re-read until it is understood, but if a radio listener misses the meaning of a sentence it is lost for all time.

Good radio material must be conversational. You can achieve this by observing the following principles.

- Use short simple sentences, because that is how we speak.
- Use contractions to assist the conversational style: *I will* becomes *I'll*; *do not* becomes *don't*.
- Include an occasional question - that way the listener thinks you are speaking to him.
- Use where possible the second person *you* rather than the third person *he* or *they*. It sounds more natural if you say 'You should be thinking about your spray programme now' rather than 'Farmers should be thinking about their spray programmes now'.
- Repeat important words and phrases.

Here is an example using these principles. A newspaper article described Australia's communications satellite as follows.

The launch of Australia's communications satellite - Aussat - in July 1985 is likely to be the most significant event in the development of rural Australia since the infant colony broke its coastal shackles after the crossing of the Blue Mountains in 1813.

Aussat, almost in a single shot, will catapult communications in the bush from the 19th to the 21st centuries and defeat two enemies that have continued to plague the development of this country - isolation and distance.

When written for radio, the item could sound like this:

An Australian communications satellite called Aussat will be launched in July 1985. The launching is hailed as the most significant rural development since the Blue Mountains were crossed in 1813. The satellite will overcome the country's communication problems of isolation and distance.

The radio story contains 42 words compared with 77 words in the newspaper article. A clearer message has been told by using short, simple sentences.

In radio, try not to begin a sentence with the most important facts. Introduce your subject material with a few lead-up words to enable the listener to 'tune in' before the important points are raised. For example, *The field day will start at noon* instead of *Noon is the starting time of the field day*. The identification of subjects such as job designation comes before the person's name rather than after it. For example, *The Department of Primary Industries' sheep and wool adviser at Thargomindah, Mr John Farmer, warned today* instead of *John Farmer, the Department of Primary Industries' sheep and wool adviser at Thargomindah, warned today*

Find out from the station the duration required and then write your talk to fit the time. Scripts are normally read at about 110 to 120 words a minute. Popular talks are usually from two to four minutes, but they may be longer for special programmes.

After writing your talk, read it out aloud to check for any tongue-twisters. Avoiding them could save you some embarrassment. Even experienced weather reporters have said *shattered scours* for *scattered showers*.

Look for long phrases that can be shortened as in: *in view of the fact that* to *because*, and *at this point in time* to *now*. Your talk should sound conversational.

The hardest part of writing a radio script is getting started. It is a good idea to jot down a few pointers before you start writing. These help you to clarify your thoughts and arrange your subject matter in a logical sequence.

Hints on recording

Use a single-track, reel-to-reel tape. At present, professionals still do not use cassettes, as most are not of sufficient quality for reproduction on radio.

Radio stations use a single-track tape. If you have to use a double-track tape, make sure that only one track is recorded on. This can be done by using a new tape, or making sure the tape is erased before you start.

The usual speed for recording is 19 cm/second (7 1/2 ins/sec.).

Each machine has its own peculiarities, so better recording will result if you can get used to the one machine.

Sound level

A constant sound level is important for good recording. Check voice levels on the sound meter before recording. The sound should be adjusted to peak into the maximum of the level meter. When recording, keep a close eye on the sound meter at all times. The microphone should be held 15 to 20 cm away from the mouth so that a constant sound level is maintained.

Identify the tape

Always put an identification at the beginning of the tape. Say who you are, who you are talking to, and what the subject is.

Recording in the open

When recording in the open, use a windsock on the microphone at all times to avoid distortion. If a windsock is not available, use a handkerchief or even a shirt to cover the mike and avoid wind noise. If you can't use a windsock, park your car in the shade and wind up the windows.

Other problems

The lead connection to the microphone can often make a rattling noise, especially when it is loose. If this is the case, wind the lead around your hand to reduce the strain on the connection.

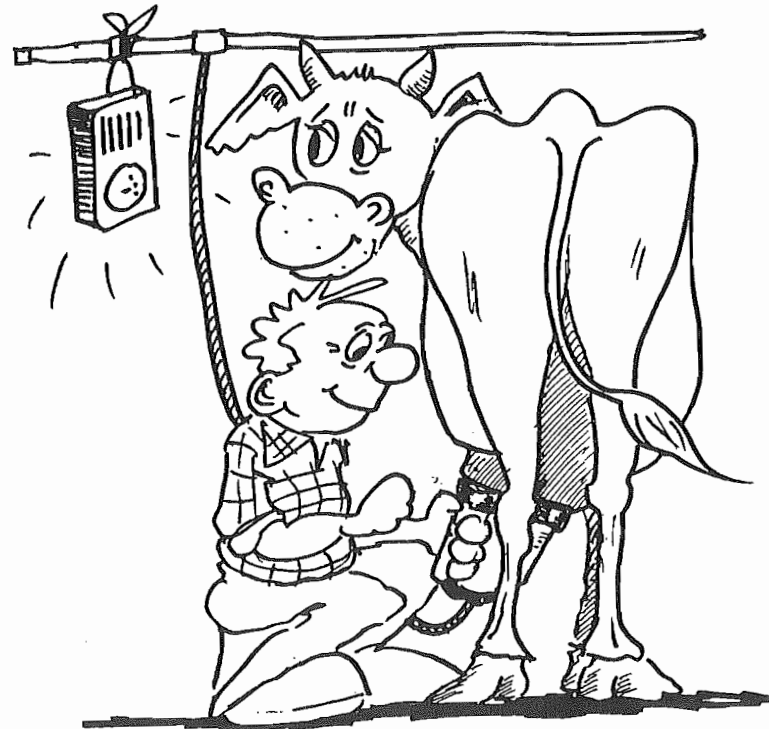
Telephone recording

Most radio stations and departments of agriculture have facilities for recording tapes via the telephone. You can use this facility quickly, and without access to a tape recorder, for topical subjects or a comment on a news item.

Check your coverage

If you are using press or radio as an extension medium, it is worthwhile to question a few producers during conversation when you are on routine farm visits.

- Do they buy the local newspaper?
- How closely do they read it?
- Do they listen to the local radio station?
- At what times?
- Can they remember hearing a particular item?



Listeners are often doing something else as the radio plays!

CHAPTER 5

PRESENTATION SKILLS

Introduction

Extension workers are often called upon to speak in public. The ability to make presentations in public requires confidence. This comes from preparation and practice. Preparation will make you feel confident, and practice will consolidate your abilities and develop further confidence. You may be asked in advance to present a formal talk, or you could be called upon to speak without warning. In the second case, you have to be a quick thinker as well as a good speaker. Previous experience and self confidence help you through the impromptu situation.

Planning

Before putting ideas into words, the following questions should be answered.

- Who is the audience?
- What do they want to know about?
- How much do they already know on the topic?
- What is the purpose of my speech?
- What is my message?

If your audience is a group of urban people with an interest in rural affairs, you may have to explain some of the agricultural terms you use. They may desire only general knowledge and be interested in the unusual and novel. On the other hand, a rural audience would be familiar with agricultural terms and probably want practical information. If your audience is very knowledgeable you might have to meet beforehand with scientific experts to gather enough new material to keep them interested.

The purpose of your talk could be one or more of the following:

- to inform or instruct;
- to convince or persuade;

- to entertain or amuse; or
- to generate action.

If you want listeners to act on your advice, you should be prepared to state your message clearly and structure your talk so you can repeat your recommendations.

If your advocated action is in any way complicated, such as constructing soil conservation works, you should have a handout which can be taken home for reference.

Preparation

After you have found the needs of your audience, you must research to gather points. Decide what facts to give and note each one on a small card. These small cards will not be obtrusive and distracting if you have to use them as notes during your talk.

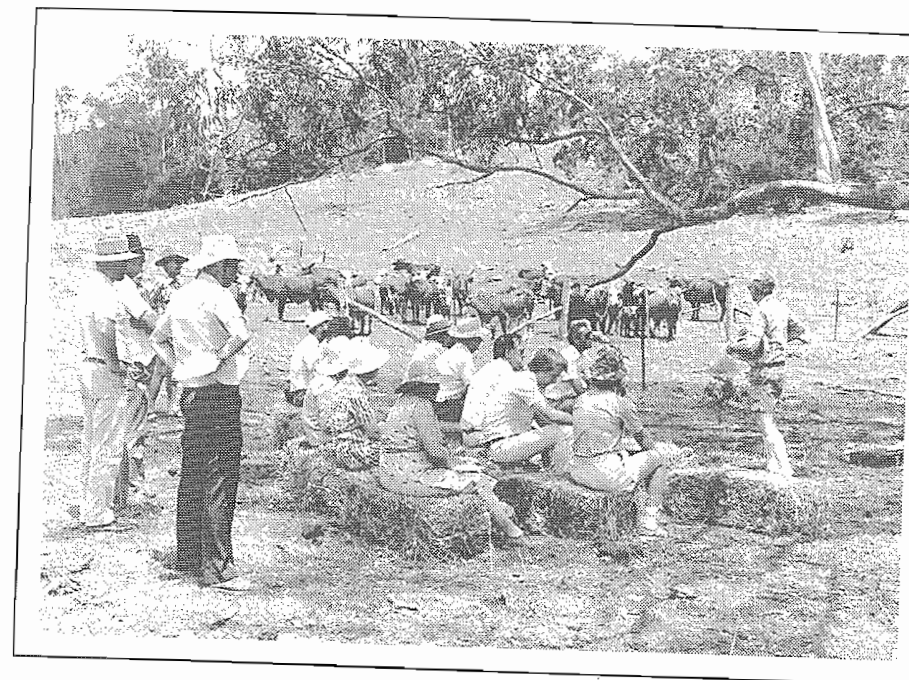
If you have a speech fully written, you will find it difficult to refer to your speech and keep eye contact with the audience. However, if you practice your speech several times, you will be able to read a whole line at a single glance.

A spoken message differs from a written one. In the spoken word, sentences tend to be short and words simple whereas in writing, sentences are more involved and technical terms are more common because the reader can back-track if necessary.

Visual aids

Every talk benefits from some form of visual aid. You could bring actual examples of what you are talking about and pass them round. This is often the simplest but most neglected form of visual aid. Slides, films and diagrams enliven any talk, but make sure you know where the power points are and that your equipment is in good working order.

Good visual aids can act like a set of notes. They remind the speaker of where he is in the presentation and prompt him on detail as he explains his points. Good visual aids can make your speaking job easy.



For this farm walk presentation, the extension worker is using the real thing as a visual aid. He has also provided seating and shade for his audience.

The structure of your talk

The introduction

The introduction should be short. Following are some examples of approaches.

- Announce the subject in your first words: 'Feeding the dairy cow is the key to high production and healthy calves'.
- Tell a human interest story, paint a word picture or ask a question.
- Say something that will arouse attention, excite curiosity, capture interest, or is particularly informative: 'Do you know how many bites a cow takes in a day?' or 'Do you know that 7 kilos of soil is lost for every loaf of bread produced?'
- Tell a funny story related to the subject or issue a challenge.
- Build your talk around some colourful key words.
- Stress the importance of the subject to the well-being of the audience: 'Everyone here tonight will be vitally concerned with the future of'.
- Use an appropriate quotation or some noteworthy idea.
- Stress 'common ground', especially if some of the listeners may be hostile.

- Deliver greetings or a personal message.
- Never apologise!

The body

This is where you develop your points to provide your main argument. You may need to clearly define or explain or even demonstrate how something is done. You will have to bring your ideas to life and make them interesting by using examples, illustrations, statistics and data, and statements of authority. Visual aids are an extremely valuable tool to help present any of these and to focus attention on particular points.

The conclusion

A conclusion, like an introduction, should be brief. Some suggested conclusions are as follows.

- Summarise the main points made in the body of the speech.
- Deliver a suitable quotation.
- Make the finish the climax.
- Compliment the audience.
- Describe a dramatic moment in history, science or business.
- Relate a brief biographical or autobiographical history or event.
- Urge some form of action or the adoption of some viewpoint.
- Relate an anecdote or relevant witticism.

Organising content

The general rule is to go from the general to the particular. Make a general point: 'Quality of beef cattle pastures in winter is generally poor'. Then go to the particular: 'Spear grass starts to become rank in March and animals start to lose weight in July'. The danger in this approach is in a listener disagreeing with a generalisation at the beginning of a speech and thereafter being lost to the speaker.

If you prefer to argue from the specific to the general, you can set out some striking examples and draw general conclusions from them. People will often be interested initially in examples more so than general statements. The disadvantage of going from the particular to the general is that you can initially confuse your audience about what your line of argument is.

Whether you go from the general to the particular or vice versa could be critical. Therefore make a conscious choice on this when structuring your talk. Go from the known to the unknown. Explain a point in terms of what people already know and show how this relates to new information. People are more able to follow material presented this way.



If you keep your notes brief and use visual aids, you will keep your audience interested.

Humour

Humour is difficult to use, so be careful. It demands special attention to clear articulation so that not a word is missed. If your talk starts with a joke, make sure it is very brief. Any humour should be directly related to the subject.

Public humour leaves no room for sarcasm or contempt.

The use of language

Vocabulary. It is a great help for a speaker to have a large vocabulary. It helps to express meaning with greater clarity or to produce more readily a vivid, memorable phrase. Words are tools. You can improve your word power by thinking of synonyms for words that you use. Also make a note of any unusual words you intend to use, but check their exact meanings.

Jargon. Technical, complicated or unusual words should not be used just for their own sake. The best language is simple language. Short, direct words in short, clear sentences are the basis of forceful public speaking.

Diction. Diction is the way you say words. This refers to whether your words are clipped or drawled, slovenly or precisely spoken, in pleasing rhythmical and inflectional patterns, or harshly or breathlessly spoken.

Enunciation. Enunciation is the articulation, pronunciation and clarity of utterance of particular words and sounds. You should aim to develop your speech and pronunciation in accordance with the accepted practice of the people with whom you wish to be identified and whose actions you most value. Use the dictionary where necessary. Listen carefully to how others speak.

Vogue words. Do not get carried away with vogue words which come into fashion and are used *ad nauseam*. 'At this point in time', 'current crisis situation', and the suffix 'wise' are just a few.

Cliches. Try to avoid cliches which are so hoary with age that they have lost all appeal. Similes, metaphors and descriptive phrases are the life-blood of good speeches but they lose their effectiveness with over-use. Why do we always 'explore every avenue' and 'leave no stone unturned'? 'Far be it from me' to 'work like a slave' while the government, 'in its wisdom', declares that, 'by and large', it has the situation 'well in hand'.

Simplicity. Do not think that for public speaking the language needs to be dressed up. Some speeches have been remembered for generations because the simplicity of the words and the clarity of expression kept the meaning and purpose of the speech alive.

Practicing and polishing

Practice your speech delivery to an imaginary audience or with a tape recorder.

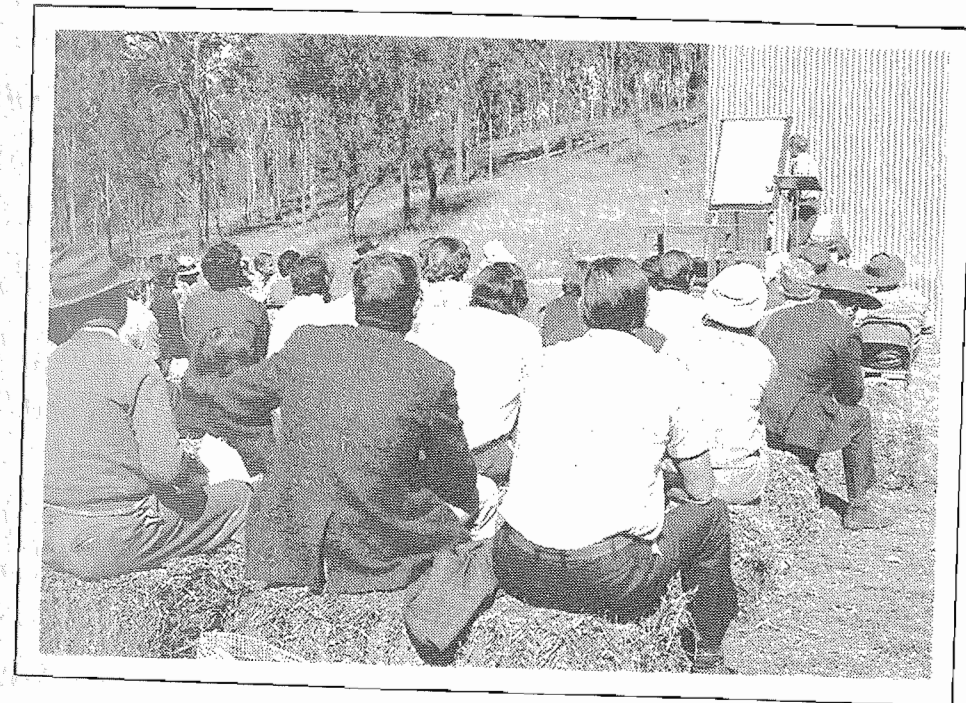
You will find that it takes more time to read and deliver your speech than to read your notes, so practice will give you an idea of timing. Don't be shy about practicing; most of the great speech-makers in history such as Winston Churchill rehearsed their important public speeches and were a little nervous before they delivered their addresses.

As you rehearse, see if you can add more sparkle by:

- repeating key words or phrases;
- mixing long and short sentences and stringing together several short snappy sentences;
- using synonyms to avoid repetition;
- replacing a statement with a question; and
- using figures of speech or alliteration.

Your speech

The audience wants to be entertained, and is on your side. Usually your speech will be on some technical explanation in which the audience will be interested and you won't have to rise to great heights of oratory. If you have picked an interesting topic, related it to the audience, and have a few visual aids, a few ums and ahs will not be noticed. Don't worry about a few pauses in your delivery while you turn to your visual aids or consult your notes. What seems like eternity when you are in front of the audience seems only a moment to them.



Writing on a whiteboard or flip chart to emphasise points is a simple, effective technique.

Voice

If you plan to speak regularly at your service club or elsewhere, you may wish to pay more attention to your voice.

Voice differences. Voices differ greatly, because people differ greatly. Your voice is shaped by a composite of factors, including your size, temperament, energy level, attitudes, state of health, experiences, background and education. Your voice is a reflection of your personality. It is also an indication of your feelings about yourself, your listeners and your subject matter. Voice is a sensitive barometer, revealing far more than you sometimes might wish it did.

Voice individuality. One thing you should never do is to try to make your voice imitate someone else's. Voices are wholly individual. You should use your own to its best potential, without strain. This does not mean, however, that

your voice might not need to be changed in some regards. Consider the following problems, which are all manageable.

Volume. Some people habitually speak too loudly, perhaps because they have lived an outdoors life, have felt a need to be unduly assertive, or simply have an exuberant personality. They need to practice restraint and make special efforts to speak more quietly. Others may speak so softly that they can scarcely be heard and will need encouragement to 'speak up' audibly.

Pitch. A high pitch suggests youthfulness, or femininity, or perhaps excitability or emotionalism. More significantly, when the pitch remains on a single level, the voice sounds emotionless and monotonous. The best advice is to make a conscious effort to be conversational and communicative.

Rate. The best average rate for most people is between 125 and 160 words a minute.

The last few minutes before your presentation

How you use the time immediately before you speak could be critical for success.

Don't worry about being nervous: nervousness will heighten your performance. Some people gain confidence by imagining themselves finishing a successful presentation.

Spend the last few minutes making sure your notes are in order and can be referred to easily. Visual aids should be within easy reach and ready to be shown at a moment's notice.

If you have charts or slides, practice showing them. Make sure you know the location of power points and the on-off switches on electronic equipment. If you intend to use felt pens, make sure you can get the tops off and that they write.

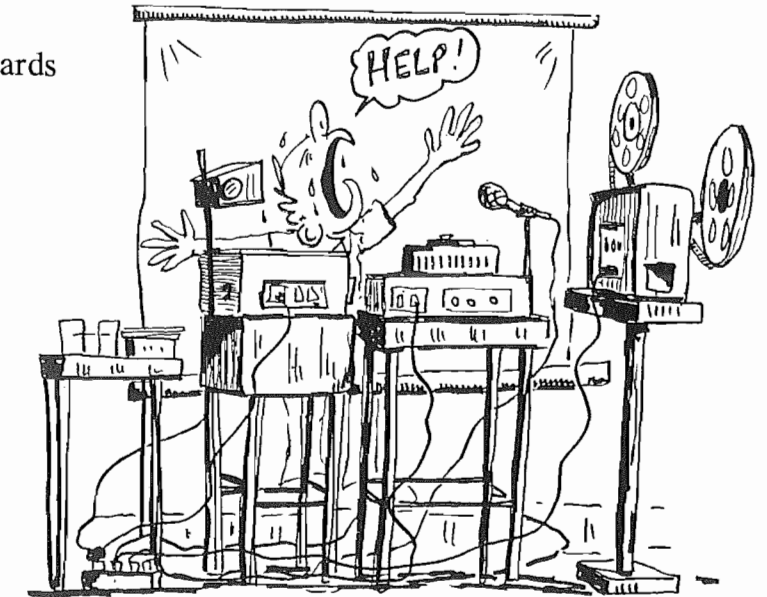
Mentally rehearse the first minute or so of your presentation. If you get off to a good start, the rest will come easily.

Using visual aids

The range of visual aids available gives great scope for imaginative presentations. Selecting the visual aid to clearly illustrate a point and presenting it by the most striking method gives life and meaning to your message.

The range of visual aids includes:

- real or live objects
- models
- photographs
- chalkboards and whiteboards
- paper pads
- flannel board
- magnet boards
- charts and graphs
- motion pictures
- videos
- slides
- filmstrips
- overhead projections



Keep your aids simple.

Many of these methods demand good preparation. If you are a patient and discriminating photographer, you will gradually accumulate slides to illustrate many subjects. Test graphs or charts on others beforehand to make sure their message is clear.

When using visual aids:

- check your visuals for clarity from where the back of the audience will be;
- keep visual aids simple so the equipment is not a distraction;
- check slides in advance to make sure they are loaded the right way up;
- face the audience, not the visual aid;
- never apologise for a poor visual - if it doesn't suit, don't use it; and
- don't use visuals which risk annoying or offending any of your audience.

Graphs and charts

Graphs and charts should be easy to read from the back of the audience. They should be bold, with a simple message.

Avoid showing tables of figures. Decide on your main message and then be ruthless in eliminating extraneous material. Round off the figures to show them in visual form. Pie charts, graphs and bar graphs convey their message clearly and unambiguously to most audiences.

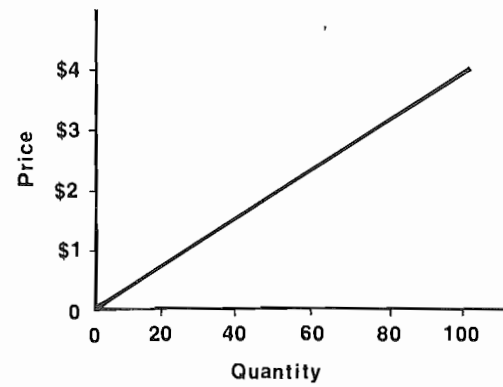


Figure 5.1. Response of supply to price

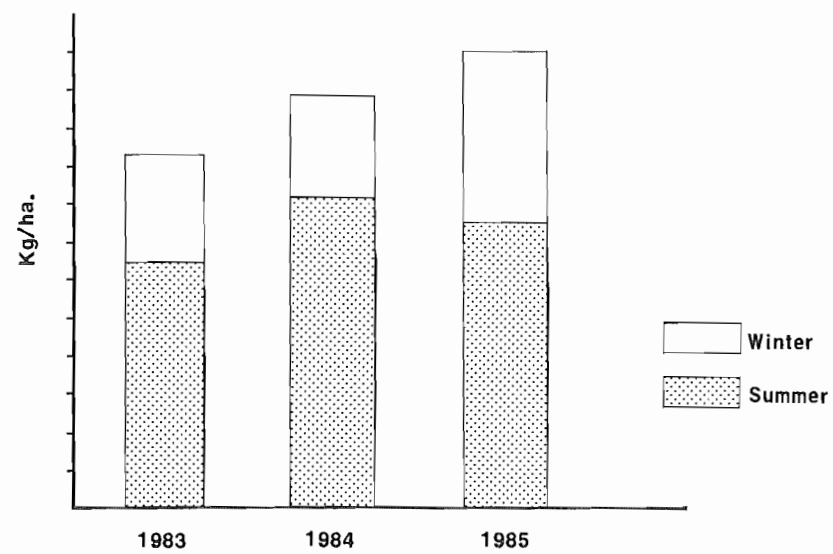


Figure 5.2. A bar graph showing variations in summer and winter production

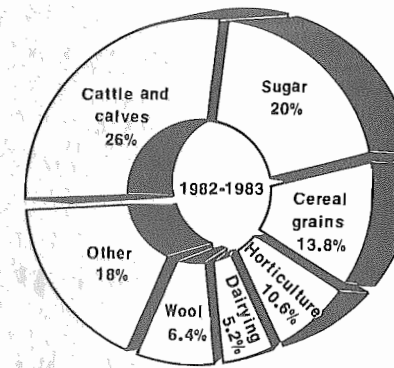


Figure 5.3. A pie chart giving gross value of rural production, showing the proportional contribution by industry groups

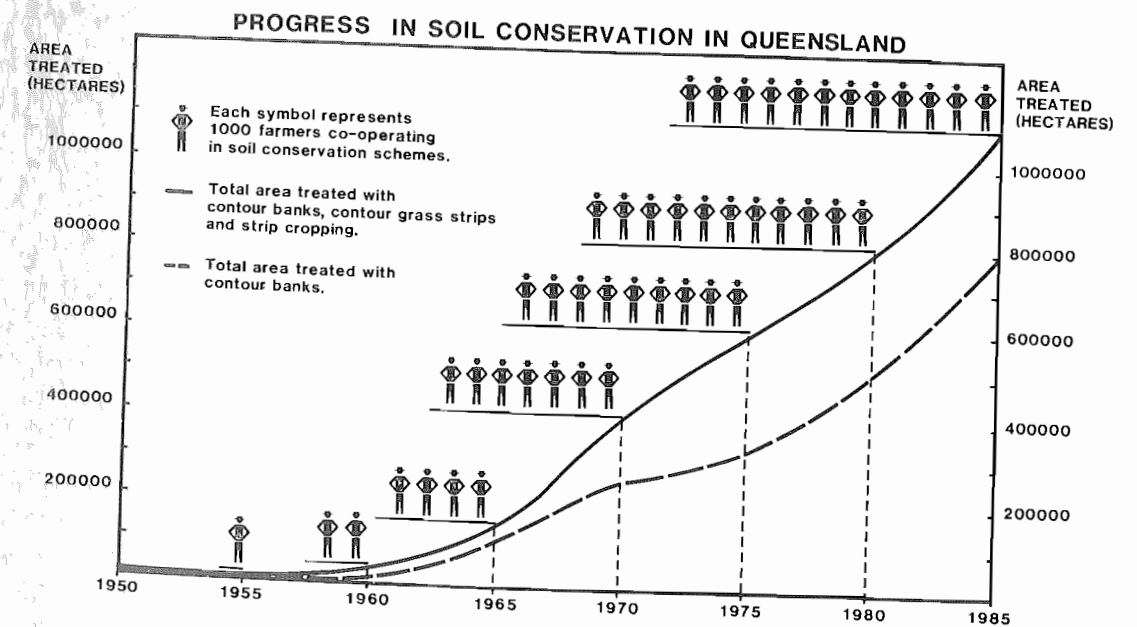


Figure 5.4. A detailed chart prepared by an artist will impress your audience.

Further reading

- Jordan, A. (1985), *Visual Impact Using the Overhead Projector*, Queensland Department of Primary Industries Training Series QE85011, Brisbane.
- Mitchell, H. and Corby, Lynda (1984), Teaching Techniques, in Blackburn, D. J. (ed.), *Extension Handbook*, University of Guelph, Guelph.

CHAPTER 6

FIELD DAYS, FARM WALKS AND DISPLAYS

Introduction

Well planned and conducted field days or farm walks are effective forms of education. Producers can readily learn in these situations because they involve all five senses. Farmers can see and discuss practices in an informal atmosphere and even operate equipment or handle the plants and animals under discussion.

In the field setting, clients can debate the merits of any practices shown with both experts and friends. Real learning is self initiated, and the personal involvement is ideal for inspiring people to acquire new knowledge and attitudes. They thus leave with more confidence in any knowledge gained and are more likely to put it into practice.

Our farm audience is becoming increasingly sophisticated, and this puts the onus on us to organise a smooth-running, entertaining function with the stamp of professionalism.

Farm walk or field day: what's the difference?

Field days are usually large gatherings where a general invitation has been sent out. They are often held on research stations or trial sites, usually involve guest speakers, and may be opened by political figures.

Farm walks, held on properties, are often organised by a farmer discussion group or local producer organisation. Attendance is restricted, and producers generally know each other well before the day.

Farm walks differ from large field days in their depth of personal interaction. Because farm walks involve small groups of producers, each person is able to ask questions on what is seen and discuss it in relation to their own properties.

The friendly group atmosphere of the farm walk is in contrast to the large, often impersonal field day. The large field day can arouse attention, but is less likely to lead to direct adoption than the farm walk. This is because the large numbers involved in a field day sometimes prevent thorough discussion and understanding. It is also difficult to present a range of topics relevant to all members of the audience.

To overcome these problems, the organisers of the Toorak Research Station field day, where attendance can be over 200, follow it up with smaller gatherings at surrounding country centres.

Commercially organised activities, designed to advertise and sell farm equipment, are often called field days. Participation by extension organisations is usually limited to displays.

Subject matter

The usual subjects for field days and farm walks include:

- the effects of improved crop or animal husbandry;
- new equipment;
- opportunities for property development; and
- the benefits of applying existing district recommendations.

Field days on research stations have a valuable public relations component, and give an account to industry representatives on how their funds are spent.

If a subject is of extreme interest but concerns only a few producers, it would be best to aim at a small audience and hold an informal farm walk.

Organisation of subject matter

To achieve rapport with the audience, you must understand them and make sure that subjects are relevant to their needs. If a subject is completely new to them, you can create awareness, but have little chance of getting adoption. However, if you are showing improved practices as implemented by a successful producer, district producers will have passed the awareness stage and so you should expect some to go into the trial and adoption stage.

If one subject can be readily adapted to district properties, then it would be best to devote most of the time to discussing it.

Several different aspects of the one topic could be discussed. Approaching a subject from different angles helps the audience absorb the message without making it seem too repetitious. A common field day fault is attempting to cover too many topics.

If you expect to get some adoption of the practices shown, a complete explanation should be given. This should include the benefits, pitfalls and costs. Also, most importantly, a printed handout of the salient facts should be distributed.



A farmer, on the far left, explains how he grew the crop. Testimony from a practical person can be far more convincing to farmers than a talk by an extension worker.

Planning

When planning a field day, consider the following points.

- The field day site.

Producers have more trust in results gained by other farmers than those of research organisations. The assurance that another practical person has found a practice useful carries more conviction than the testimony of a research worker describing trial results.

Though research stations are often convenient for large field days, the small event conducted on a private property can be more effective.

- Plan well ahead.

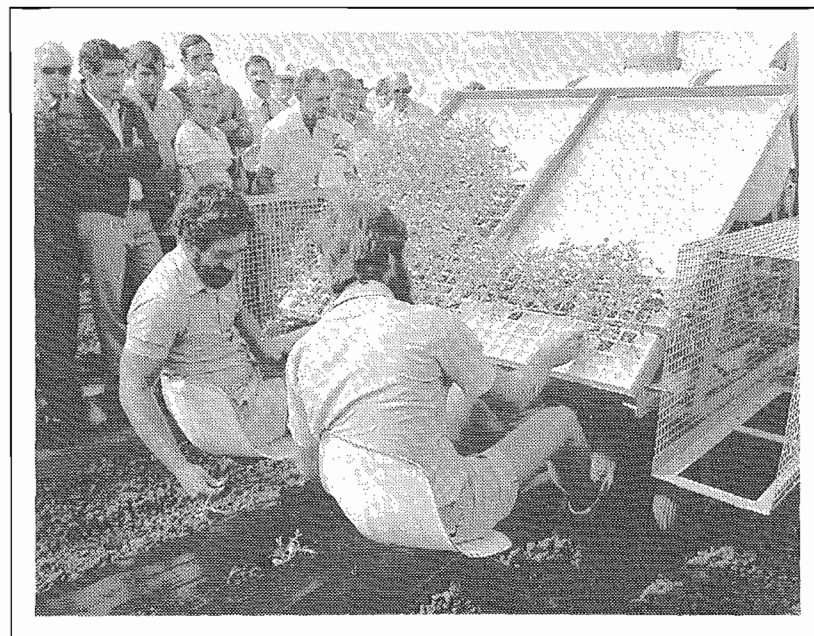
Select a date that:

- doesn't clash with other district events;
- gives enough time for planning; and
- suits the subject that you want to show.

- Prepare a timetable and travel over the site to make sure that you can stick to it on the day.

- Arrange for car parking and parking attendants if necessary.

- Arrange an alternative wet weather meeting point, and publicise the arrangement just before the field day, if it seems necessary.
 - Prepare field day charts well in advance.
 - Draw up a schedule of releases for the press, radio and TV.
 - Points to be publicised:
 - what is to be shown
 - why it is important to clients and the community
 - when and where the field day is to be held
 - meal arrangements.
- Send individual circulars, together with route maps, to interested people and organisational representatives you especially want to invite.
- Your audience's comfort:
 - Arrange for seating, and make sure that it is in well-shaded areas.
 - Don't face the audience into the sun.
 - If it's a long programme, you will need toilets.
 - Arrange transport on the farm if necessary.
 - Mow paths to allow walking through long grass.



If possible, emphasise practical demonstrations rather than talks.

You could hire a local hall for the morning so that most of the talking can be done out of the sun. Producers can be comfortably seated and will be more receptive. Practical demonstrations and field tours can be arranged for the afternoon.

The public address system

Set up and test the public address system early. If possible, have the public address system under continuous supervision by a responsible person.

If the speakers wish to refer to charts or walk around and point out objects, a chest or lapel microphone helps them to do this without turning their mouths from the microphone.

A windsock over the microphone will prevent distortions and noise in windy weather. If you do not have one, a handkerchief spread loosely over the microphone is better than nothing.

Avoid echoes by not facing the speakers toward a distant wall. Avoid 'feedback' by placing the loud-speakers in front of the microphone.

The public address volume should be loud enough to discourage or drown conversation, but not be offensive.

Speakers and master of ceremonies

Field days are for showing, not talking. There should be a maximum of exhibits and demonstrations, and a minimum of talk. Speakers should have well-prepared, simple charts, graphs and specimens to show the audience.

People have a very limited attention span when listening to a talk unsupported by other methods. Research shows that most of what we learn comes through our eyes, and that our ability to learn from talks alone is limited.

A rough guide to how long talks should be:

- speaking alone - five to 10 minutes
- speaking with aids and equipment - 10 to 20 minutes
- speaking with aids and equipment and demonstrations - 15 to 45 minutes

During the discussion period, repeat the questions clearly to allow the audience to hear them. If necessary, you can promote discussion by posing questions to prominent producers.

Guest speakers. Restrict the number of guest speakers from outside the district to one, as what they have to say is often not relevant to the local scene. Graziers' associations often invite well-known industry figures to lend prestige to the occasion, and to act as a drawcard. However, the 'big-name' speaker with

an overview of the whole industry can usually speak only generally on local conditions.

The most convincing speakers are usually respected local producers.

Cooperators. Organise your farmer cooperators' part in the field day beforehand, because you need their clear testimony. Get agreement with them on what they will say, and what you will say.

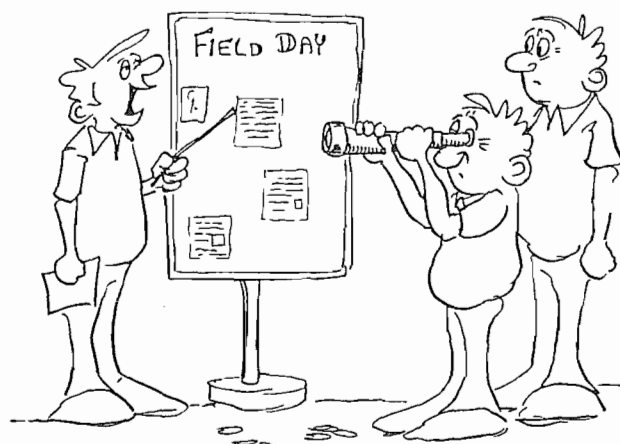
If they are novice speakers, a thorough discussion of what they will say will make them feel more confident. With a comparatively inarticulate person, an interview technique can be very effective. The producer does not have to remember a whole series of points, as each question prompts him on to the next point to be covered.

Use farmer testimony on costs, benefits, values, problems, methods and management whenever possible.

Research workers. A field day or farm walk is a communication exercise, and those most technically qualified to speak are not necessarily the best communicators. Research workers sometimes find field day talks difficult because they may have little contact with producers, and thus find problems in making their material relevant. Field day organisers can overcome these problems by briefing the speakers thoroughly, or by presenting some of the material themselves and having the research worker help answer questions.

Master of ceremonies. Be your own master of ceremonies once the chairman has handed over. Often an industry leader or local government official is invited to chair. But unless they are very experienced or well briefed on the aims and scheduling of the function, they are usually not of any assistance after the opening remarks. You are the one who has the message to get over and have planned accordingly. Therefore you are the one to control the event.

Be polite but firm about timing. Keep the programme running to schedule.



Make graphs and charts large enough to be easily read.

Don't let speakers get into pointless arguments with members of the audience. If an audience member's claims are too outrageous, then the rest will question his opinions later.

Charts

Keep charts and graphs simple, with the printing large enough to be read easily. When preparing charts, it is best to stand at the distance you estimate the audience will be from the speaker, and make sure you can read the print yourself.

When explaining the results of a trial on a chart, it is not necessary to include all the treatments with the exact figures. Show the most significant treatments and round off the figures.

When speaking about a chart, use a pointer to avoid obscuring the chart with your body.

Have you tried these techniques?

Display areas and small groups

One way of making a large field day more personal and allowing more discussion is to break the crowd into small groups. Each group starts at a different speaker or display, and moves among the demonstrations. This method is sometimes used at research station field days, and has the following advantages.

- The speaker or demonstrator can be close to each member of the audience.
- There is minimum need for public address systems because groups are small.
- People feel free to ask questions in small groups.
- As each speaker gives his talk several times during the day, he cuts it to the essentials and keeps it short.
- The speakers can slightly modify their presentation according to the response they obtain from the first audience. Thus the later talks can be made more relevant and clearly explained.

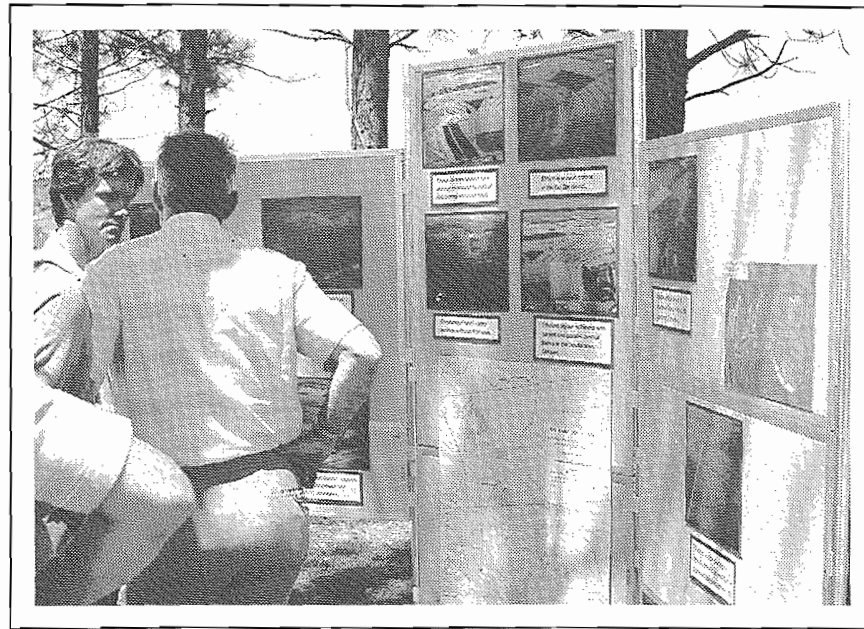
Panel discussion

A discussion period, with questions put to a panel of speakers, is often used at rural gatherings. This can stir up healthy controversy between panel members.

After all, in the complex system of agriculture it is hardly credible that everyone has the same experiences and opinions. However, there should be no sharp disagreement on important issues or simple facts. Briefing of the speakers beforehand avoids these misunderstandings.

Creating informality

A field day can be run on a discussion basis with a good compere. The compere introduces each of the specialist speakers at the scheduled time and asks him a few questions on his subject to begin the discussion. Usually the farmers soon join in by adding comments and questions.



Poster displays can provide stimulus for conversation over lunch.

Evaluation

Accurate evaluation of field days is difficult but some evaluation, no matter how rough, will enable you to do a better job next time.

A simple and effective method is to have a person, who does not appear to be closely associated with the day, ask several producers a series of simple but searching questions. For example:

- 'Did you enjoy the day?'
- 'Why?'
- 'What interested you most?'

- 'What did you see here that you can apply on your own property?'
- 'Do you intend to apply anything you have seen today?'

It might be worthwhile to hand out short evaluation sheets and pencils at the end and ask producers to fill them in before they leave. This makes it possible to get a relatively large number of brief responses.

A more lengthy survey form is often handed out at the end of large field days to be filled out later and posted back. These forms ask for comments on physical arrangements such as seating, shade and acoustics, as well as the relevance of the material presented. The disadvantage here is that only a low percentage is returned.



Transport on the farm can save time.

Follow-up

Take photographs for later publicity. These photographs should be taken from the correct angle, and not show the backs of the audience with the speaker in the distance.

If the press is not represented, prepare press and radio reports. Most good field day talks can be adapted to make newspaper items.

Do preliminary planning of new farm demonstrations for future field days, if the need is indicated.

Plan to continue publicising the practices shown at the field day, to remind the slow to act.

Plan a repeat field day next season, if appropriate to the subject.

A check-list for successful field days

Before

- Make sure you have a convincing story of practical value to the local community.
- Have enough material but not too much.
- Select a date that doesn't clash with other district events, that gives enough time for planning, and that suits the field day subject best. Avoid busy periods in the district as far as possible.
- Arrange public risk insurance.
- Organise your farmer cooperators' part in the field day clearly. You need their clear testimony. Get agreement with them on what you will say and what they will say.
- Prepare a timetable, test it with a 'dry run', and stick to it.
- Select your stopping points, with the first one within sight of the car park.
- Have the audience looking down on the speaker if possible.
- Provide seats in the shade and toilets, if necessary.
- Don't face the audience into the sun.
- Plan and arrange visual aids, field day signs, charts, graphs, photographs, exhibits, demonstrations, handouts and the public address system.
- Print route maps, farm plans and the programme.
- Publicise through the press, radio and TV:
 - what is to be shown;
 - why it is important to farmers, their wives and the community;
 - where and when the field day is to be held; and
 - meal arrangements.
- Mail individual circulars of field day programmes to people and organisational representatives you especially want to invite.
- Arrange transport on the farm if necessary.
- Arrange for car parking and parking attendants if necessary.
- Arrange an alternative wet weather meeting point, and publicise the arrangement just before the field day, if thought necessary.

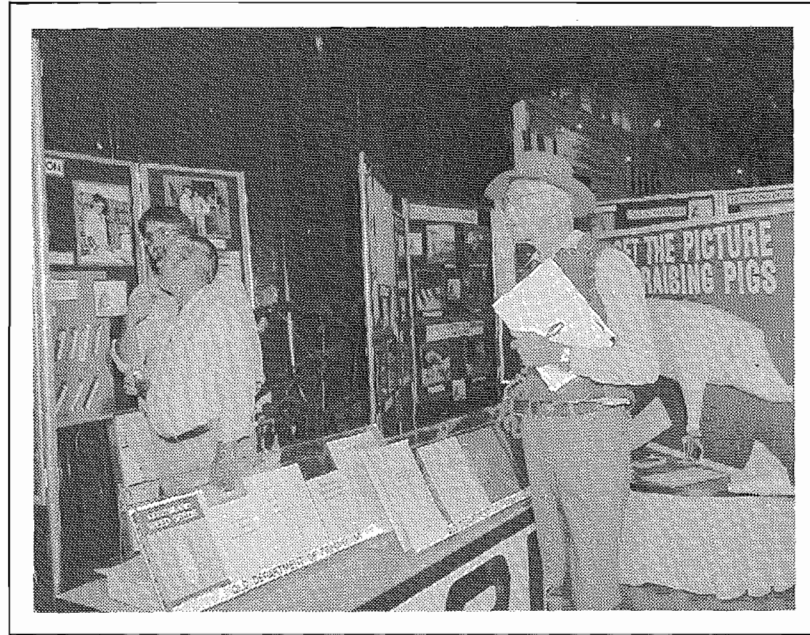
During

- Be your own master of ceremonies once the chairman has handed over. You know what you want to show.
- Use a good public address system with a chest or lapel microphone and have it under continuous supervision by a responsible person.
- See that all speakers are shown the operation of the microphone before the day.
- Introduce speakers and any special visitors with a sincere build-up.
- Outline the programme.
- Use visual aids such as:
 - charts;
 - graphs;
 - photographs;
 - specimens;
 - exhibits; and
 - practical demonstrations.
- Keep the public address volume at a sufficient level to discourage or drown conversation.
- Have someone at the back of audience to check on volume and distortion.
- Take photographs for later publicity.
- Keep talks short.
- Repeat questions asked during the discussion period.
- Be polite and firm.
- See that 'take-away' literature is distributed to all visitors.

After

- Thank all those who have assisted.
- Prepare reports for press and radio, if not represented.
- Do a post-mortem on the organisation of the day.
- Seek some farmer opinion on omissions or possible improvements.
- Do preliminary planning of new farm demonstrations, if the need is indicated, for future field days.

- Continue publicising the practices shown at the field day, to remind the slow to act.
- Plan for a repeat field day next season, if appropriate to the subject.



Displays should be eye-catching, with a simple theme.

Displays at commercial shows

To compete effectively with other displays at a commercial activity or agricultural show, your exhibit has to be eye-catching and attention-getting. You may need to consult an artist and experiment with colour and design. Live objects, colour, movement and light can be used to attract and hold attention.

The ideal display has a central idea which stands out. Your message should be clear at once through reading a few words and glancing at a few pictures or objects.



This display of nutrient deficiencies has taken time and effort to prepare but it generates worthwhile interest.

Further reading

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CHAPTER 7

GROUP WORK IN EXTENSION

Advantages of working with groups

Group work can complement face-to-face contact and mass media in the extension programme. Meeting with groups can widen your range of contacts as well as allow you to deal with subjects in depth, giving a degree of detail not possible using other methods. The questions and discussion which occur in groups help all participants develop a deeper understanding of the subject and reveal aspects of it which might otherwise be neglected.

The benefits of using group methods are outlined below.

- Time is saved on farm visits; you can see many people in a short time.
- You can rapidly gain knowledge of district problems.
- The rural community is more likely to change as a group rather than as isolated individuals.
- You can rapidly identify community attitudes and opinions.
- Group work is especially necessary when community cooperation is required, such as in soil conservation projects.
- Group meetings are useful for presenting involved and complex information that is difficult to present by other methods.
- Members can gain from pooled experience.
- As you become identified with the group and the community, your credibility is enhanced.

A balance of extension methods

In practice, group work does not replace farm visits or the use of mass media, it is complementary to them.

Not all areas lend themselves to the formation of groups, and not all producers are 'joiners' who will readily participate in group activities.

Some extension workers use mass media reports of discussion group activities for the information of non-participants, and to give the group meetings a sense of importance to members.

Using existing groups

In most districts, there are show societies and producers' organisations such as the Queensland Dairyman's Organisation and Queensland Graingrowers' Association, and Rural Youth and service clubs.

All these organisations can be useful. You can arrange to attend a regular meeting and present a short illustrated talk on a topical issue after regular business. Alternatively, you can ask the leaders to call a special meeting if the need is urgent.

Even if you have no immediate need to present information, attending the occasional industry group meeting can help you meet a large number of district producers in a short time; and by attending meetings you can quickly ascertain details of seasonal conditions for a wide area. This allows the broadcasting and publication of well-based and timely information. In this way, groups can provide information for the mass media programme.

The major concern of existing groups is often industry politics. A special group usually has to be set up to allow discussions of farming systems.

Setting up a discussion group

Where there is a need to share information and understand technology, a discussion group can be valuable. Leadership and initiative from the extension officer in forming the group will be welcome.

If you are thinking of setting up a group, you might ask yourself a few key questions.

- Do you think you have a chance of achieving anything or are you just reworking old ground?
- Will you raise expectations which cannot be fulfilled?
- Do you have the time to properly service the group?

You'll get best results with a group of producers who already have something in common, even though they may never meet together.

Generally, discussion groups are more lasting and successful where:

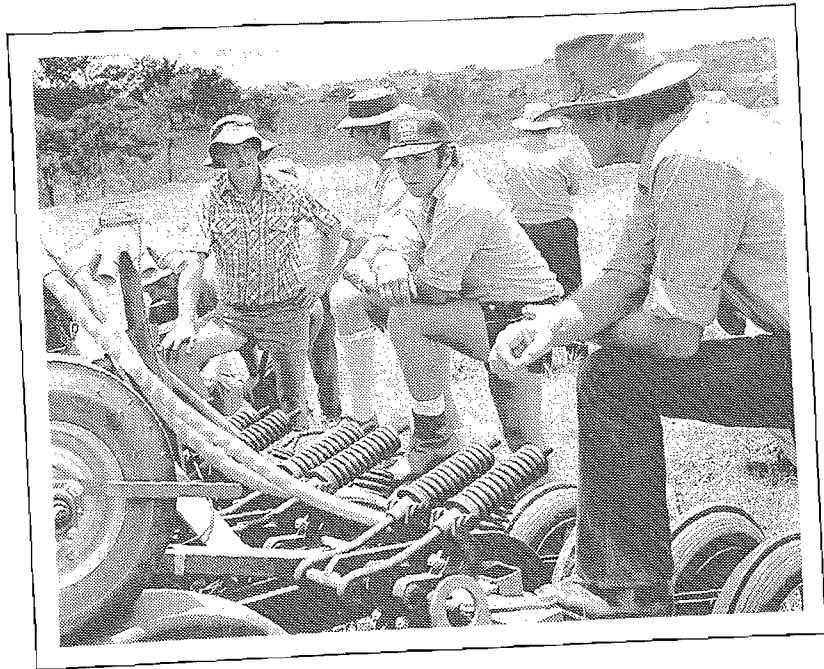
- members are all in the one rural industry;
- there are no great status differences between members;
- members belong to a single geographic area, such as a small valley;
- members know each other well;
- the programme is varied from night meetings to day trips to field days;
- the group contains several people who are widely known and participate well in community affairs;
- the discussion group has a record of enjoyable events and successful activities; and
- members see continuing purpose or benefit.

In modern farming, interest in technology often binds people more closely than location or acquaintance. Clubs have sprung up based on maximising technical efficiency, such as the 100-cow milking herd club and the 5 tonne per hectare sorghum club. These groups are highly motivated to become more technically efficient. They provide extension staff with a vehicle for extension and a means of becoming more technically competent themselves as they learn from top farmers.

Producers can be encouraged to form groups in outlying districts to facilitate extension contact. If enquiries show that people in the community feel they could benefit from a discussion group, you could ask an influential member of the community to call a meeting.

The formal leader of one of the producer organisations can be used to call a formation meeting. However, there are some occasions where the formal organisational head expects to dominate proceedings. This is a problem if he promotes his interest in industry politics at the expense of the interests of other members.

A method used in Victoria is for the adviser to ask one interested producer to ask two friends to a meeting, and these two friends in turn bring two others. Thus a small group is formed based on friendship and common farming interests. The group can be enlarged by asking people to bring their neighbours. In the Bundaberg area of coastal southern Queensland, representatives of established discussion groups have helped set up groups in other areas.



Visits to properties are popular group activities.

The purpose of the group

Sometimes groups are formed to discuss single issues of a short-term nature and disbanded when the problem is solved or the situation changes, for example, crop nutritional problems or drought feeding are short term issues.

In Central Queensland, short-term groups have been formed to discuss minimum tillage practices. Farmers who tried a new tillage system were encouraged to contact their neighbours and several meetings were held at strategic times in the crop cycle. Once the crop cycle was finished, the group had served its purpose and disbanded. This technique allowed the extension workers to move on and form several new discussion groups the next season.

The group method can be used to discuss a whole range of issues affecting a production system. Such groups can meet regularly for several years. This technique has been used by dairy industry discussion groups in Queensland. Evaluation has shown that frequent attenders substantially raised their farm production and efficiency.

The programme

A group will continue to exist if it fulfills the members' needs. Group members may expect social and recreational satisfaction from participation, as well as farming knowledge.

One group in the Bundaberg area, which has continued for several years with a high degree of participation, relied on a programme of varied content which catered for both men and women. Talks on hobbies and home interests such as orchid growing were presented. In addition, the style of meeting was varied from night meetings to field trips. One day was organised to allow families to inspect improved pastures, and also to give the men welding tuition.

There are many common forms of function.

- Field days, farm walks or property tours, with the emphasis on question periods and member participation.
- Indoor meetings with a guest speaker on a pre-arranged topic. Plenty of time is allowed for questions and discussion. Questions can be more searching if there is a small group discussion before question time.
- Panel discussion where a few well-informed people discuss a topic in front of the group for 45 minutes. At the end of this period, the audience has small group discussions and then questions the panel from these subgroups.
- Tours outside the district to see developments in different industries and climates.
- Research station tours.
- Demonstration trial inspection, together with discussion.
- Film evenings followed by discussion.
- Discussion and problem-solving meetings. These are organised by the extension worker, who structures the discussion to bring out important points, and synthesise members' own knowledge to help solve their problems.

Guest speakers

Experts from outside the district can act as a draw-card. However, they need to be well briefed about local issues to enable them to prepare relevant and timely information. This avoids the problem of a guest speaker spending valuable time on telling people what they already know and speaking about local concerns in vague generalities.

The visit of a guest speaker from outside the district can be turned into good publicity. Statements from a visiting expert are a good basis for newspaper articles.

The meeting

How often to meet

Most long-term discussion groups are happy to meet once a month. Some have an annual dinner. Others miss a few meetings during busy harvest periods, or during cold winters.

Where to meet

A local hall or school is often chosen as a meeting spot. If numbers are small, a private home is suitable. If the weather is warm, a well-lit machinery shed is ideal. Members may wish to change the venue from time to time. Experimental plots or demonstration farms are good sites for meetings.

The general setting of the meeting can influence the social atmosphere which develops. A few people meeting in a large drafty hall will feel far less relaxed and congenial as the same group talking around a kitchen table.

You may not be able to do much about the meeting place but you may be able to arrange the furniture within the setting. For example, for most discussions, chairs placed in a small circle are the best. This allows all participants to face each other when speaking and the discussion leader is not obviously up front. Tables in front of the chairs often create a sense of formality which can destroy rapport.

Time

Start and finish at appointed times if possible. Night meetings should not finish too late, as producers may have families waiting up for them at home, or have to start work early next morning. Nothing kills attendance as quickly as meetings which drag on too long.

Group size

If you have 30 people or less, you can run a discussion. It can be useful to thrash out ideas and get the feeling of the total group. For this style, people should feel comfortable working with each other. It can have the disadvantages of becoming sidetracked and being dominated by a few. As the size of the group increases, participation by and the feeling of responsibility of the members decreases.

A large group discussion runs best with a minimum of formality. Those speaking should be encouraged to speak loudly. The leader should summarise at the end.

If you want to break the group into small groups, you can start with the chairs arranged in several horseshoes. After the topic has been set, those on the end of the horseshoe can come in and close the ring.

Seating

The right seating arrangements are needed to set a good social climate. Ideally, they should allow the leader eye contact with all present and make it easy for the participants to converse with each other. Participants should be able to easily move into discussion groups if necessary, but still be able to see any display material which forms part of the data for discussion.

Possible arrangements. The **horseshoe arrangement** allows both good leader-participant contact and good contact among participants (Figure 7.1).

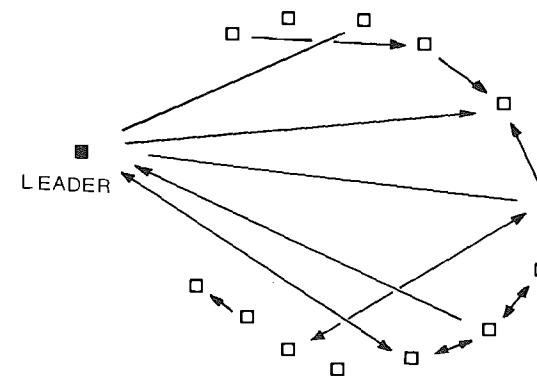


Figure 7.1. Horseshoe arrangement and pattern of communication.

The **circle** (Figure 7.2) is excellent for whole group discussion, but does not allow the participants to see easily any material on display.

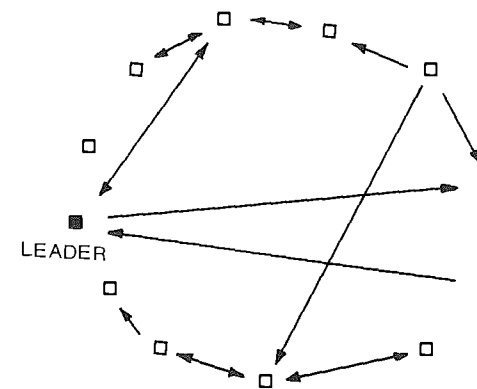


Figure 7.2. The circle arrangement and pattern of communication.

Rows (Figure 7.3) make it easy for all present to see the leader but make it difficult for them to interact. This is often the only possible seating arrangement for a large audience.

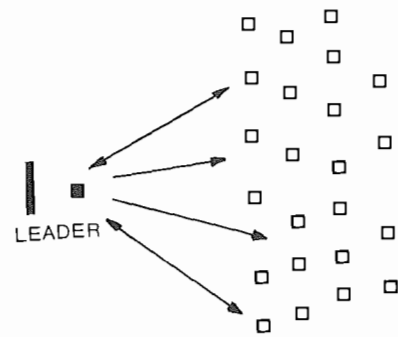


Figure 7.3. The row arrangement and the consequent pattern of interaction.

The extension worker's role

Leadership and group maturity

In the early stages, the group may be uncertain about how to operate and may expect a good deal of leadership and direction from you. If the group expects a lot of input, it is best to fulfil this expectation. Early meetings which have a clear direction and a sense of purpose and reach some conclusion, give group members the satisfaction that something worthwhile has been achieved.

After a few meetings, the group will develop a style of working together; you can adopt a less directive style, and genuine group participation can begin. The time that it takes to reach this stage depends upon the general social sophistication of members, and how well they know each other. For good discussions to occur, group members should feel comfortable working together so that there is a feeling of tolerance, mutual trust and cooperation. This takes time to develop.

Even after a group has matured, if it is to survive for any length of time, it generally has to rely heavily on the extension officer for efficient operation. This can often place a heavy burden on your time. Your involvement in the group often results in you being requested to make more farm visits in the area.

Where there are no producers to take a lead and help with the organisation of the group, you have the additional burdens of organising details, and encouraging people to come along. This is in addition to the main job of organising subject material and leading discussions. If you have to do all of this, it probably means that you are not working with a natural group or that the group is meeting just to please you.

Developing participation

There are numerous techniques for developing member involvement which give participants a sense of group ownership and a stake in the positive outcome of its activities. A common way is to use data supplied by them as an initial point in discussion.

Economists may feed back figures gained from a district survey and ask members to come to the subsequent meetings with their own financial data so that comparisons can be made with district averages. Discussion between members to compare their own figures to the average or to each other's figures can be highly stimulating and help heighten their understanding of farm management. This technique can be used for physical data such as crop inputs, or financial data to calculate crop gross margins or farm machinery costs.

Data generated from the accumulated experience of the group is recorded on a board by the leader in a logical way to show any patterns which point to solutions to problems or guides to action. If key information is lacking, guest speakers can be invited.

Groups can be involved in the siting and design of trials. In the north Queensland poultry industry, group discussions are used to define problems and the group then decides on which member's farm a trial will be conducted. The group visits to inspect the progress of the trial. If the trial is successful, group members already have a knowledge of the technology and a feeling of ownership of the results, and are thus willing to make changes on their own properties.

Technical background

It is difficult to remain in the role of a pure facilitator of the discussion process, or as a pure educator with little technical or local knowledge.

Successful operators attempt to visit most of the members' properties at least once and have a good knowledge of local farming conditions. Doing this helps show that you are interested in the area and the people, and helps build your credibility.

These farm visits allow thorough discussion of particular problems or farm developments. In the group situation, often only a general discussion is possible.

Discussion leadership

One technique of beginning discussion is for the leader to ask questions of the group. A good question should be clear, definite and concise, interesting and timely. If it is thought-provoking and encourages expression and discourages guessing, then it will help develop a valuable discussion. Good questions

encourage participation and develop thinking ability by helping to show relationships such as cause and effect.

Questions can be directed to the group as a whole. This draws a response from a person who has an answer and keeps members thinking, as well as creating spontaneity and general discussion. However, the question directed to the group may allow talkative members to monopolise the discussion or may fall flat on an unresponsive group.

The alternative is to direct a question to an individual or to buzz groups. This assures a response and encourages reserved members at the expense of talkative ones. The direct question can be used to elicit information from a member with specific experience. However, it can be embarrassing to a shy person and may restrict discussion.

Don't always answer a question put to you as leader. You can put it back to the questioner to gain his opinion first, or ask the group to answer the question. This allows the group to use the members' resources for its own benefit.

The following attributes are needed by a group discussion leader.

- A feeling of sensitivity to the group.
- Respect for members' personalities.
- Ability to provide for all to participate.
- Ability to lead unobtrusively.
- An open mind.
- Ability to derive principles out of experience.

If you decide to follow a problem-solving approach on a particular topic, you need to have a good general knowledge of the subject. Discussion frequently has to be guided, but it is far better to allow a member to make the points you want stressed than to do so yourself. The chances are that if you lead discussion wisely, the important points will be made by producers.

Arguments can develop over best solutions to problems and if some participants are seen as winners and others as losers in these disputes, ill feeling and a decline in group cohesion will result.

To overcome arguments, a six-step logical process to analyse data is needed.

1. Define the problem or decision.
2. Define the requirements that solutions or alternatives must meet for them to be acceptable. Also, record conditions that the group would find desirable in a solution or alternative but will forgo if necessary.
3. Generate a list of solutions or alternatives.
4. Evaluate these against the 'musts' and 'wants' elaborated in step 2.

5. Select the best solution or alternative.

6. Formulate an action plan.

The advantage of following this process is that solutions and alternatives are evaluated against a set of standards rather than against each other. People's suggestions and ideas to which they may be emotionally attached are judged against the standards which they help set themselves. This avoids destructive arguments over best solutions.

Observing group influence

A knowledge of who the key individuals are can help you in structuring discussion. Talkative members are not necessarily the most influential. Before a final decision is reached, members may glance at a silent member for a nod of approval before proceeding. This person may say little at meetings but whatever he says may have a significant impact. This type of influence is more likely to be present in close-knit groups.

You can draw patterns of interaction, or sociograms, by drawing arrows between speaker and listener in a similar way to those drawn in Figures 7.1 to 7.3. These and other observations reveal the structure of power and influence within the group.

Balanced participation

Most people feel happy in a group and bound by its decisions if they participate or at least have a chance to participate in the discussion.

For this reason, the leader's job is to give everyone a chance to participate. Posing a few simple questions which you know the shy member can answer is a good way of getting him talking, for example: 'How do you dehorn on your place, Fred?'

One way to lessen the effect of the talkative member is to split the group up. There, at the worst he can dominate only one buzz group. If he dominates a discussion, you can directly put questions to others so that most of the points have been raised before his turn to comment. If he breaks in all the time you can say something like 'That's interesting, but let's give Bill the floor because he has something to add'.

Often, after a group has met for a while, it develops a means to deal with the over-talkative members.

The buzz group

To quickly discuss an issue or formulate questions, the main group can be split into subgroups. Groups of three to six people give everyone some air time. These buzz groups can be used early in a meeting to get people acquainted with each other and to quickly establish an atmosphere of cooperation and friendliness. They place responsibility on all to think about the issue and encourage silent members to speak.

The leader should make sure all groups know the task set them. It should preferably be written down. Each group appoints a recorder to present its findings. The leader is then free to move from group to group to check progress and assist if needed.

Buzz groups are ideal for pooling experience and drawing out questions after a speaker has opened up a topic.

Evaluation

After each meeting, it is worthwhile to sound out participants as to how satisfied they were with the style of the meeting and how much information they gained from it. You may do this over a cup of tea immediately afterwards or on farm visits several days later.

You may find, even though you were particularly proud of the way you organised the discussion, and how clearly the important points came out, that the participants had a completely different perception of the meeting. Satisfaction of the members should be paramount in the organisation of the group, the content of meetings and their style of conduct.

Publicity and follow-up

Many extension workers produce handouts for meetings and provide a summary of topics discussed. A group newsletter can carry topic summaries, as well as build a sense of community.

Newspaper reports of group activities and details of talks by guest speakers and visiting experts can help boost the importance of the group's work in the eyes of the community. They can also serve as a credible source of technical information for those who do not attend.

How long to continue?

If a group has fulfilled its purpose, interest declines. It is better to cut off activities at this point than let poorly attended meetings continue. If you are accorded the position of leadership, point out the decline in interest and ask the group members if they wish to continue. It is better to leave the memory of a happy and successful experience than to finish on an uninterested, ineffectual note.

If the group has been effective, it can be reactivated for special meetings as the need arises, such as sudden pest or disease outbreaks, or a new technological opportunity.

A constitution

Some discussion groups work on an informal basis, while others prefer to have a constitution with a small annual subscription and a few details on the election of president and secretary. Whichever method is chosen is up to the members. Groups can work happily either way.

Live-in forums

A short live-in activity is ideal for intensive study of a subject. Participants are taken out of their home environment and the atmosphere is conducive to frank discussion of key issues, such as goals in farming or profit projections. Reassessment of major issues and attitude change are more likely to follow from such forums than a series of short discussions held several weeks apart.

Short residential forums can be the best method of learning practical subjects, such as welding, for which equipment and experts need to be organised.

Live-in learning situations also have these advantages:

- the extension staff exert their maximum effort over a short period and are then free to concentrate on other projects;
- they suit farmers and graziers who are unable to attend regular meetings;
- extension workers are given the sense of completing a significant achievement which builds their team spirit; and
- the live-in atmosphere helps build permanent communication links among participants and between participants and extension staff.

Residential activities attract participants from a wide area, so many may not know each other or the organisers. To make participants feel comfortable in their surroundings, relaxed and ready to learn, organisers should:

- meet members as they arrive and exchange a few words with them;
- make sure students know meal times and administrative details, and are happy with their accommodation;
- remember participants' names and use them early in proceedings;
- establish a participative climate by having each participant briefly introduce himself and talk about his property to the group as one of the first activities; and
- during breaks, facilitate conversation between members and make sure all are included.

Group techniques

Farm development goals, relationships between enterprises and the significant technical problems that occur are complex issues. People usually need a social process to clarify, order and express their thoughts on these topics. Such a process should encourage people to think in broad terms before narrowing their perspective. Broad indirect questions which encourage reflection, followed by discussion of the issues they raise, are more likely to bring out the important underlying issues rather than recent problems or the present but temporary situations that most readily come to mind.

The problem census

Some discussion groups begin a series of meetings with a problem census. Members list district problems and place them in an order of priority to provide the group with a long-term agenda.

The problem census technique does not always highlight the most important issues, unless it is done carefully. Producers may mention problems which may not be serious but are recent and uppermost in their minds. Members may also emphasise problems which they know coincide with the special interests of the adviser. Often the serious long-term chronic problems are neglected unless all steps in the problem census process are followed.

Steps in the problem census

- Explain that the meeting was called to identify major farming problems in the community. The process begins by posing a question such as: 'List the most important problems you face in running your farm'.
- Individuals write down a list of problems on a small piece of paper without discussion with other members.
- Divide the meeting into small groups of five or six members. Each group appoints a recorder who lists the final set of problems generated from the group discussion. A large sheet of paper and felt pens are supplied.
- Each member reports his list to the group, and the group accepts, modifies or rejects the items.
- After group discussion, ask the recorder of each group to report the group's findings to the plenary meeting.
- The plenary meeting clarifies any unclear items and then compares the lists to find which problems are common to more than one group and which can be grouped under one category. This process results in a single list of problems.
- The small groups reform to consider the order of priority of the list generated by the plenary meeting.
- Recorders of each small group pin up sheets which record the order of priority resulting from their group discussion.

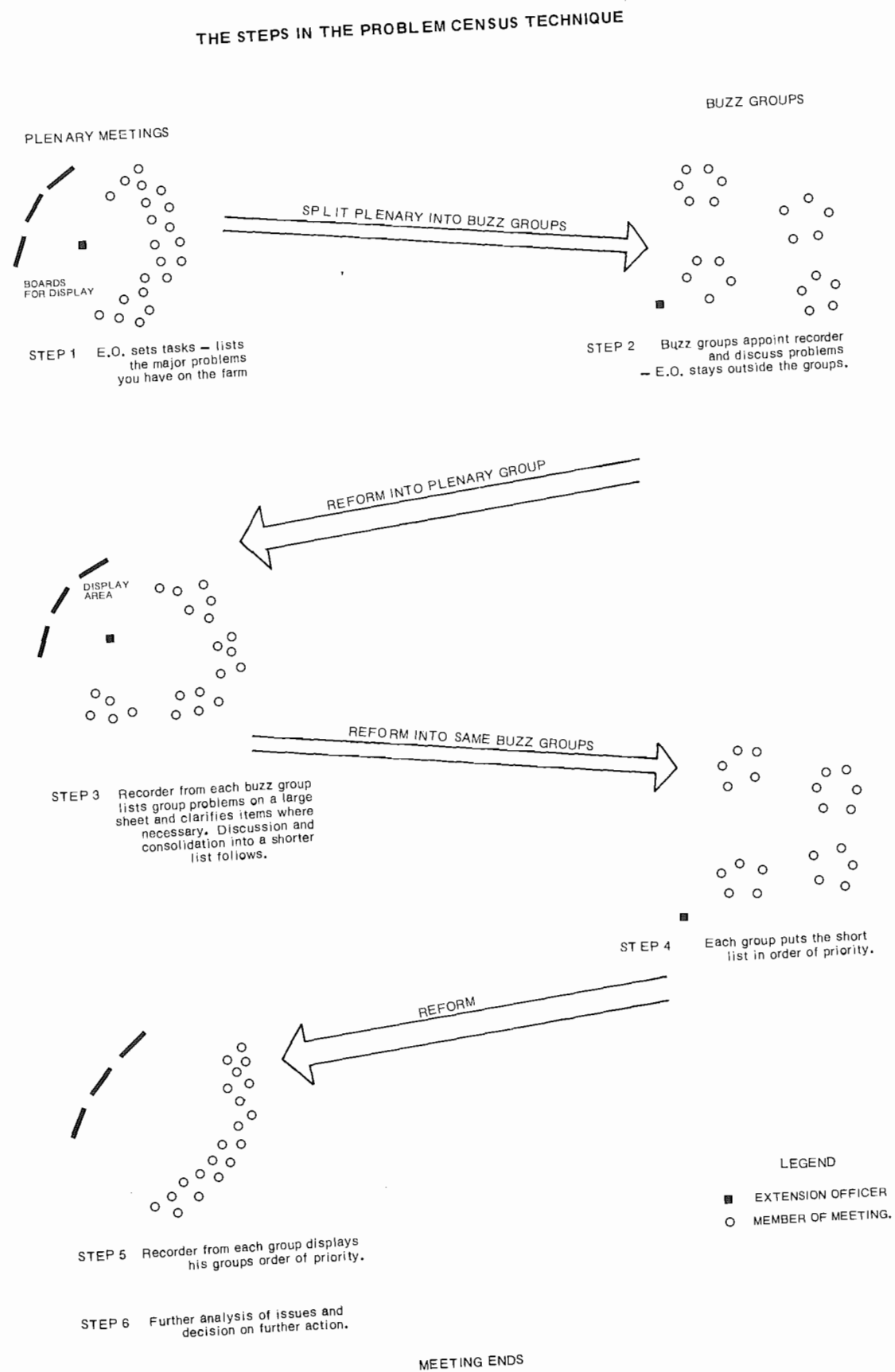
You now have several priority listings which should have many elements in common. You may wish to discuss immediately how action can be taken on the most significant issues or postpone this step to another meeting.

The steps in the problem census are illustrated on page 80.

Needs clarification technique

The following process is another technique of clarifying needs. This process, which illustrates the principle of starting with broad general questions to stimulate thought, can be modified for various purposes.

- Ask group members to discuss with the person sitting next to them, the farm problem that concerned them most at this time last year. After 10 minutes, ask the pairs to discuss the major concerns at the moment.
- Ask participants to draw up a pie chart of how each of them spends their time on farming each year, allocating segments to various operations.
- Participants then form buzz groups and each group draws up a pie chart which is an average of the group members' activities.



Adapted from Crouch (1984)

- Groups pin up charts for a brief plenary discussion.
- Ask groups to discuss when individuals last sought information from an agent, extension worker or neighbour and what the topics were.
- Individuals write down the single most important change they would like to make on their properties.
- Buzz groups discuss changes.
- Each person writes down the three most important issues for their own situation.
- Groups then combine individual lists and share them in a plenary discussion.
- A possible option at this stage is to discuss comparisons between the groups' final lists and a list compiled by experts, such as extension workers, agribusiness and research workers.

The nominal group technique

The 'nominal group' technique is suitable for use at a meeting lasting about two hours. However, more time may be needed if there is a divergence of opinion on needs.

Method.

Step 1. Ask each individual to record technical problems or extension needs on a sheet of paper. After 10 minutes, check to see if people want more time.

Step 2. Ask each member of the meeting to supply one item and record it on a display board. This process continues round the group until all items are recorded. Finish by encouraging members to build on the ideas of others and encouraging people to think of further items.

Step 3. Encourage participants to seek clarification of the items. The reasons behind recording particular items may not be clear. Arguments over the validity of particular items should be avoided.

Step 4. Ask the participants to write down the items recorded on the board and allocate a score to each item. All items can be allocated a vote or individuals can be asked to only place a vote on a limited number of priority items.

Not voting on all items on the list will simplify the final counting process, if the highest score is given to the first choice.

Step 5. Record the choices of each member and allocate a weight to each choice. For example:

- first choice item 5 scores 3;

- second choice item 6 scores 2; and
- third choice item 10 scores 1.

Sum the total scores for all items and select the group preference by the highest score.

Step 6. Explore with the group to see if there is any strong disagreement on any item. Make sure that the group is clear on what each item means. There may be a need to hear argument on the issue and perhaps take another vote if members change their minds as a result. Consensus usually results, but at times individuals may have to agree to disagree.

The delphi process

The delphi process, like the nominal group technique, is a means for collecting and aggregating the judgement of individuals to improve the quality of their decision-making. The process consists of a series of questionnaires which gives participants a chance to modify their responses in the light of those of other individuals.

The delphi can be done in a face-to-face situation or by mail questionnaire. It is suitable for use by people who cannot easily meet as a group.

The process encourages participants to think deeply about the issues concerned but it needs time and highly motivated participants to work well. The following steps are needed.

Step 1. Develop the question and pose it to the target group.

Step 2. Gather responses from the participants.

Step 3. Analyse the responses and group them where necessary to make a summary list. This analysis and categorisation can be a time-consuming process and can take a working party several hours.

Step 4. Send out a second questionnaire which is an accurate summary of the responses to the first questionnaire. Participants are asked to review the list, seek clarification if necessary, and rank items in order of priority.

Review responses of the second questionnaire.

Step 5. The analysis of the second questionnaire should add notes for items and summarise comments made. A further questionnaire can be developed if necessary, summarising the results of the second questionnaire.

Step 6. Feed back the final results to the group.

The delphi process helps give participants time to reconsider their judgement and a chance to review the opinions of others. There is a tendency for opinions to converge, though full consensus may not develop.

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CHAPTER 8

EXTENSION STRATEGY - WHEN AND HOW TO USE DIFFERENT METHODS

Introduction

Extension practitioners have the task of influencing primary producers' farm management and their use of technology. Effective extension staff understand how farmers adopt new practices, and how information spreads through rural communities. This enables them to choose the most appropriate extension methods and to identify the target audiences on which they will have the greatest impact.

This chapter details the process by which individuals adopt farm practices, and how practices spread through communities (diffusion). It also explains how extension workers can use their knowledge of individual farm practices, the adoption process, and the structure of different communities to effectively communicate with producers.

The adoption process

When a farmer adopts a new idea or practice, he has already gone through several stages in a process. Early research in the USA on adoption of farm practices identified five stages.

- **Awareness.** The farmer hears about an idea or practice but does not have any detailed information.
- **Interest.** At this stage the farmer sees that the practice might be relevant to him and seeks more information. He might ask neighbours about it, read pamphlets on the topic or visit extension staff.
- **Evaluation.** Having received some information on the innovation, the individual weighs up its advantages and disadvantages to him. He might make a tentative decision to adopt the innovation and seek reinforcement from others.
- **Trial.** At this stage the farmer makes up his mind to try the innovation, usually on a small scale. The trial could be a few hectares of a new crop variety, or one treatment with a new cattle drench. Usually some reserve is held about its effectiveness. The trial stage may continue for several years before the innovation is totally accepted or rejected.

- **Adoption.** When the trial is finished, the producer makes a decision to adopt or reject the innovation. If a decision to adopt the innovation on a large scale is made, further unanticipated problems can occur.

The process of adoption can take several hours or several years. Typically, it occurs over several years. When adoption is rapid, several stages in the process are usually skipped.

A criticism of the five-stage process is that it implies that a decision to innovate is always carefully considered. However, a farmer may act in a rational manner by weighing up the consequences of change or act in an impulsive, illogical way. If he acts impulsively, the innovation is likely to be unsuitable for him and will probably be discontinued.

An alternative model of the adoption process consists of four functions rather than stages.

Knowledge. A person is exposed to an innovation and gains some understanding of it.

Persuasion. A person forms an attitude towards the innovation.

Decision. A person carries out activities which allow him to decide to adopt or reject the innovation.

Confirmation. A person seeks reinforcement for the decision made but may reverse this decision if he is exposed to conflicting messages about the innovation.

This model answers some of the objections to the five-stage adoption model.

Rates of adoption

The rate at which an innovation will be adopted depends on five variables:

- the characteristics of the farmers;
- the communication channels;
- whether the decision to adopt is optional or bound by law and/or whether it can be taken by an individual or whether it needs group cooperation;
- the farmer's view of the attributes of the innovation; and
- the extension worker's efforts.

Characteristics of farmers. Early studies characterised farmers on the basis of how quickly they adopted an innovation. The first to adopt were the innovators; the next group was called the early adopters; followed by the early majority; the late majority; with the laggards being the last to adopt. The innovators were the first 2.5% to adopt. They were younger and better educated than the average farmer, tended to read and travel more, mixed with high-status

people in the community and frequently contacted research workers and extension people.

On the other hand, the last 16% to adopt a particular innovation were termed laggards. They tended to be older and less well-educated than average, and their farms and farm incomes were smaller than average. This group did not travel a great deal and its sources of information were usually close neighbours.

Most extension workers know farmers who continually search for new methods and frequently seek information from research workers and other leading farmers. Although these farmers may be innovators over a wide range of technology, each of them may be a laggard in some respects. So it is difficult to generalise by categorising some farmers as laggards and others as innovators. Each area of technology has to be looked at separately.

The stage of life of a producer can affect farm management decisions. A young farmer, full of energy and with a young family to educate, is generally keen to innovate to gain more income, while an older man whose children have left home may have little interest in increased income and a strong interest in leisure pursuits.

The type of country, the cash reserves available and the operator's approach to risk-taking, all affect the innovations adopted on any property. In the western pastoral areas where the environment is harsh and unpredictable, successful graziers exhibit many of the values and attitudes usually attributed to laggards. Because the climate allows little scope for forward planning, they have a conservative approach to innovation adoption. They do not wish to further add to the risk of survival in the variable climate by adopting new practices, particularly if they have to borrow money to do so.

Some of the communication patterns of graziers in arid areas are also similar to those of so-called laggards. They do not search widely for information because practices from other areas are not applicable to them. Much of their information is gained locally.

Communication channels. The communication channels available, such as newspapers, radio and interpersonal sources, and the credibility of each source affect the rate of spread of ideas and therefore the rate of adoption.

Type of decision. If an innovation is required by law, it will obviously be adopted quickly in our society. For example, Australia recently undertook a campaign to eradicate TB and brucellosis from beef cattle herds. Producers are required to muster and test their herds and restrictions on cattle movements are placed on untested or infected herds.

Producers' views of the characteristics of the innovation.

- If the innovation has a big relative advantage over what it replaces, it will usually be adopted quickly. The advantage may be a reduction in labour or risk, or an increase in net profit.

The adoption of mechanical harvesting of sugar-cane was very rapid in Queensland. Farmers no longer had to provide accommodation for gangs of manual cane cutters, contractors no longer had to search for good men, and the cutting process became quicker and more efficient for all concerned.

- If an innovation is compatible with the existing values and needs of potential adopters, it will tend to be adopted quickly.

In Queensland, Brahman-type cattle have the advantage that they are less affected by parasites than Herefords or Shorthorns. However, one of the reasons that adoption of Brahman cattle has been slow is the social value attached to a good line of Herefords or Shorthorns.

A grazier may have a herd of Hereford cattle started by his father and may have gradually improved the herd by buying good bulls. The family may exhibit in shows and be members of the Hereford Society. Many of their friends and acquaintances made at shows would take pride in the quality of their Hereford cattle. To adopt Brahman cattle might mean breaking the social links and values associated with the Hereford Society and the show circuit.

- A practice will be adopted more quickly when it is seen as simple and not difficult to understand, or when it does not require learning new skills or changing existing procedures.

New plant varieties are now taken up very quickly, as their use involves little alteration in procedures. All the grower does is order a different type of seed and perhaps alter the setting on his sowing machinery. Cultivation and harvesting are usually very similar.

- An innovation that can be tested on a limited basis will tend to be adopted more quickly than one that cannot. Sprays and fertilisers can be tested on small areas for little cost, but the building of a new style of dairy shed is an expensive 'all or nothing' decision.

- If the results of an innovation can be easily seen, it will tend to be adopted quickly.

A new sheep drench may give rapid and easily seen results and be adopted quickly, but a new scientific method of stock selection cannot be readily seen because it is a process rather than a physical entity. The results of this process may not be apparent for many years and therefore it will be adopted slowly. Similarly, the benefits of some soil conservation schemes may take many years to show and therefore the work by innovators is not readily copied by others.

The extension worker's efforts. The speed of adoption is influenced by the extension worker's choice of message and skill in using appropriate methods. Knowledge of how a practice suits an influential segment of the community, and their attitudes towards any changes are starting points for effective extension action.

Diffusion

Diffusion is the process by which an innovation spreads throughout the community. Ideas are taken up by others as they observe their neighbours' properties and discuss farming with them. Media reports of district happenings can accelerate this process. The spread of an idea or practice in a community can be graphed over time, as shown in Figure 8.1.

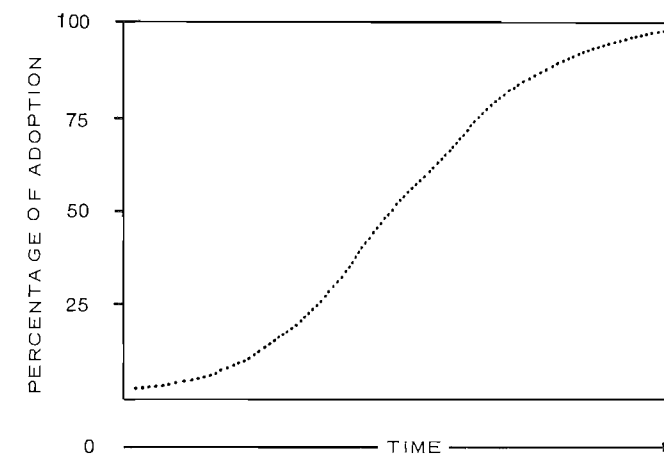


Figure 8.1. The adoption of an innovation over time.

The early flat section of the curve represents the small percentage of innovators, the steep section shows the rapid adoption by the early and late majority, while the plateau at the top indicates slow adoption by the laggards, for whom the change may offer little advantage.

The steep section of the graph indicates the time when community knowledge of the innovation is widespread and people are rapidly copying from each other. If extension staff know this stage has been reached, they can reduce their efforts on media releases, as most farmers will already be aware of the new practice.

It is important to note that the graph of adoption does not follow the same time-frame or pattern for all practices. Preventative practices are diffused more slowly and often farmers need a prompt to act. Soil conservation works, for example, are adopted in a more uneven pattern and diffusion seems to be slow. Poor seasons and lack of finance cause a temporary decline in the rate of adoption, while good seasons which may include a few spectacular erosion events increase the rate.

Complex manual skills do not diffuse quickly because they take time and effort to learn. Mulesing of sheep was slow to diffuse in Queensland because it

took some effort to learn and it was an unpleasant job. Individual or small group tuition is often necessary to promote complex skills.

Barriers to diffusion

Extension workers in the 1930s and 1940s knew that a great deal of farmers' information was gained from other farmers. They thought if they could work with the innovators, the innovators in turn would inform other farmers and the new developments would be taken up by the less innovative producers.

This strategy had a poor record of success because it failed to take into account three important factors: social barriers between individual producers, communication patterns in communities, and differences in the characteristics of farms.

Like any other members of the community, farmers mix with those similar to themselves. Progressive, innovative producers usually spend their time with other progressive producers. In some highly competitive horticultural industries, the innovators share knowledge among each other and deliberately try to withhold information from extension staff and other producers.

Farmers who have small properties or whose operations are not at a high level of technology are diffident about approaching innovators for information. They seek knowledge from those similar to themselves, usually close neighbours.

An example of how communication can be cut off between two strata of producers was shown by an analysis of communication patterns between Darling Downs egg producers.

Most of the communication took place among those with large flocks, as shown in Figure 8.2, with some interaction between those with medium-sized flocks.

The diagram shows that if extension workers relied on informal channels for the diffusion of information, the message would not reach farmers with small flocks. Those with small flocks had little contact with those with large flocks, and had little contact among each other. Those more innovative producers with large flocks had good contact with each other and most contact with formal sources of information such as QDPI and commercial companies. In response to this analysis, special group meetings were organised for farmers with small flocks to keep them up to date on technological developments.

Similarly, in the Nambour horticultural district, extension workers realised that there was little contact between experienced growers and new and part-time producers. A special field day was conducted on a Saturday to cater for the less-expert producers, with a programme of simple information most often sought by beginners.

The established community communication patterns can help or hinder the diffusion of technology.

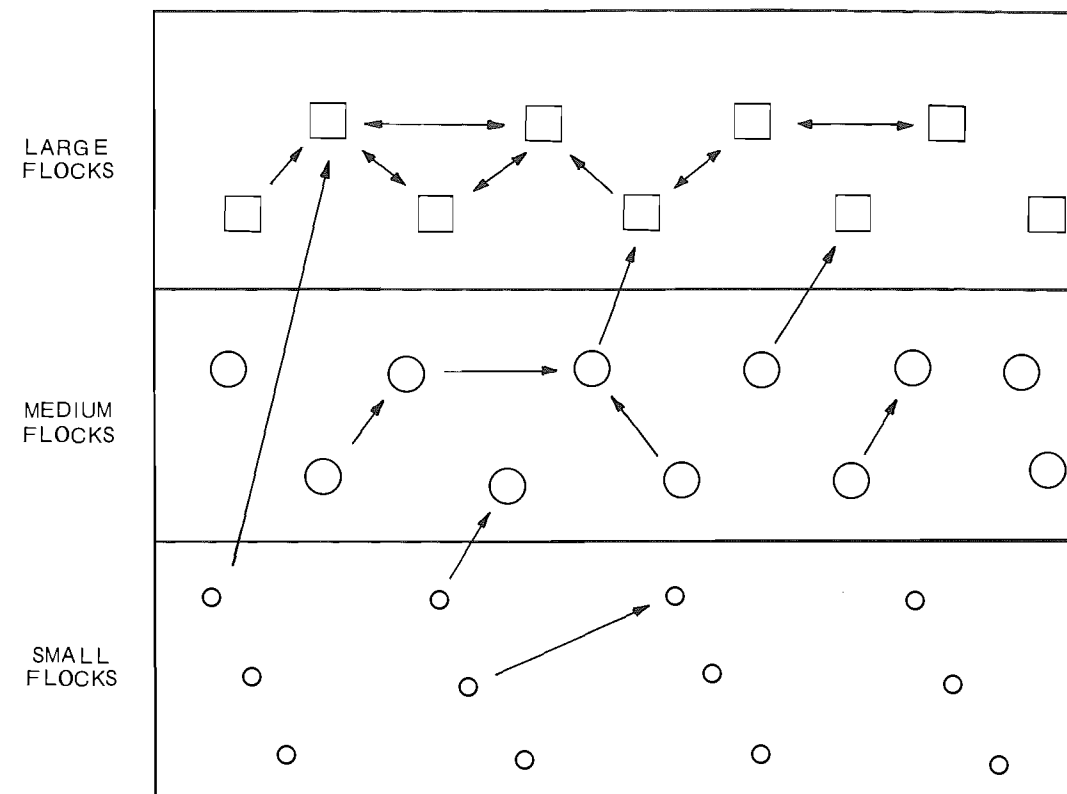


Figure 8.2. Informal communication patterns among Darling Downs egg producers.

At Theodore, an isolated irrigation area established for more than 20 years, the adoption rate of integrated pest management in cotton was 96%. Most of the information on insect control came from QDPI but was channelled through one particular grower who was an information source for 16 of the 23 growers. However, at Emerald, a new irrigation area established less than 10 years, the adoption rate of integrated pest management was only 37%. The majority of growers used chemical company representatives as their source of information and there was little interaction between growers. The largest group of growers with regular contact had a non-adopter as its most influential member. Extension workers should be aware of these patterns and adapt their extension strategies to fit them, and hence further influence adoption.

Farm size and type of country have a bearing on the type of technology which can be adopted. The landholder may be progressive and prepared to innovate but because of small farm size or lack of credit, some innovations may not be applicable to him or be beyond his finances. In these circumstances, a simple or low-cost technology may have to be developed. For example, engineers have shown crop producers on the eastern Darling Downs how they can adapt their old cultivation machinery to handle crop stubble. This enables the producers to change to conservation cropping systems with minimum expense.

The effect of status, education, farm size and technical expertise means that in any district, no one producer can be picked out as being universally influential.

Australian research has shown that farmers recognise others as having special knowledge in a particular subject. Some would be approached for their special knowledge of stock, others for their mechanical knowledge.

Figures 8.3 and 8.4 (adapted from a 1963 article in *Rural Research in CSIRO*) show how a sample of Victorian dairy farmers consult one another for information. There are different patterns for animal husbandry and irrigation. In the sample, the most popular source of advice on the dairy herd was consulted by eight other farmers, while another two farmers were consulted by five each. The most popular source of information on irrigation was consulted by only four others. On both subjects, most of those who were sought for advice were approached by only one person.

Dairy herd

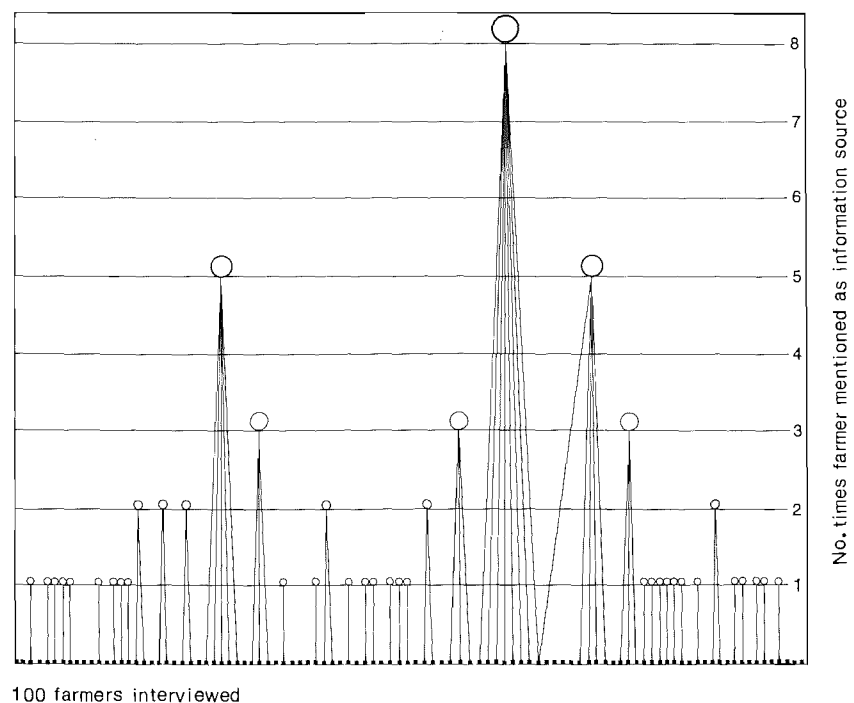


Figure 8.3. Different patterns made by the same 100 farmers when seeking information from other farmers about the dairy herd.

A study of dairy farmers in Queensland highlighted how they use different combinations of resources to learn about different areas of technology. Figure 8.5 sets out the resources used by a sample of Queensland farmers to make decisions about feeding their herds. The sample had a different pattern of resource use for other topics.

Irrigation

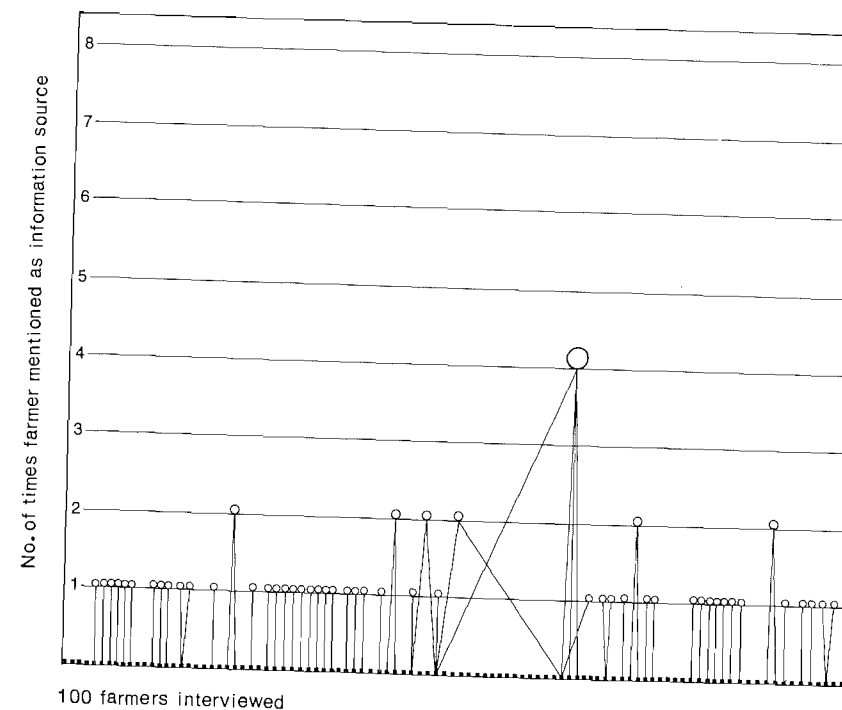


Figure 8.4. Different patterns made by the same 100 farmers when seeking information from other farmers about irrigation.

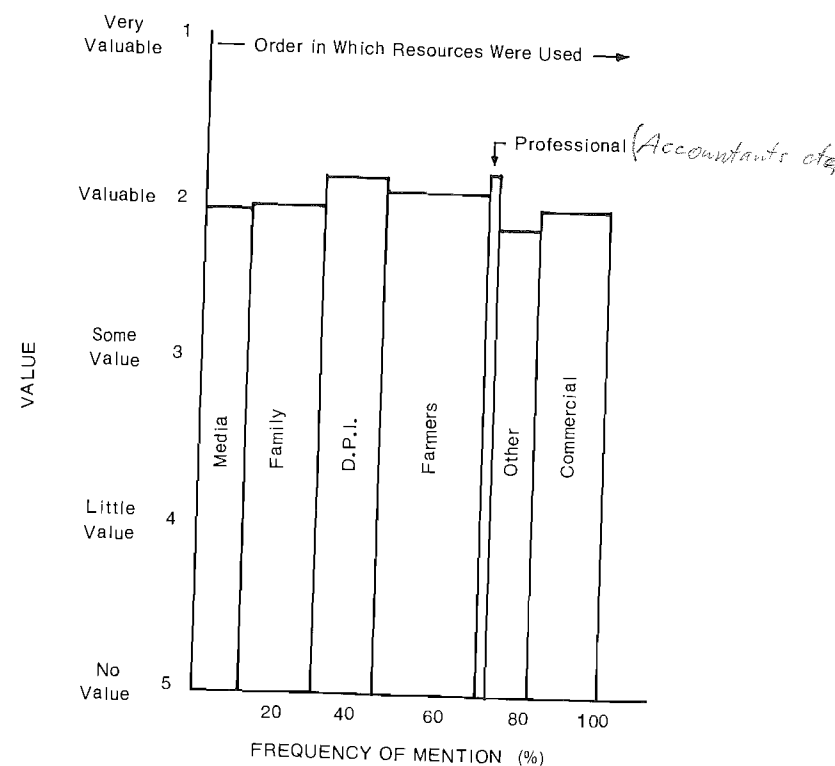


Figure 8.5. Sources used by Queensland dairy farmers for information on herd feeding.

This diagram illustrates a point made in Chapter 2, that extension officers are usually only one among several people to be consulted in important farm decisions. An important principle for extension practitioners to keep in mind is that a communication is far more persuasive if it is seen as coming from several sources. If an extension worker uses the media and mixes widely in the community, much of his information will be relayed by other people.

Other factors in diffusion

The physical and social infrastructure have an important influence on the rate of diffusion. Farms close to large towns or with good communications and transport have more ready access to information than properties remote from modern facilities. Properties close to population centres are often the first target for sales of commercial innovations.

Farm and community organisations have vital functions in spreading innovations. They help spread information by bringing people in contact with one another, and thus speed up the diffusion process.

Some rural cooperatives have employees who both sell farm inputs and act as extension agents. These people can be very effective in the advisory role, as they usually have a good knowledge of their district and the effects of the products they sell. They are usually excellent sources of information for government and private extension workers.

Farm organisations sometimes provide credit and other facilities which make innovation on the farm both possible and profitable. This is particularly important in developing countries.

Communication and the adoption and diffusion process

If you have a knowledge of the adoption and diffusion process, you are better able to choose the most effective communication methods and content.

Mass media, such as radio and newspaper articles, are excellent for developing an awareness of a particular practice. Once awareness is widespread, more detailed information should be given in journal articles and through Farm Notes. The more detailed information helps develop and satisfy farmer interest and assists in preliminary evaluation.

When the majority of landholders are aware of an innovation, news articles should elaborate practical details rather than general principles. One way to do this is to feature primary producers who have adopted an innovation and give the technical details of how it was done.

Newspaper articles in the later stages of the adoption process often serve as reinforcement or support for a choice for those who have adopted, or perhaps as a source of status for people mentioned in the articles.

Newsletters are particularly valuable in sparsely populated areas where there are few opportunities for producers to contact each other or extension workers. If items feature what is happening on properties, or even better, include articles by local landholders, newsletters can help build communication networks and speed up the diffusion process.

Demonstration plots and field days satisfy producer demand for detailed practical information. These are necessary once a producer is considering a trial or adoption of a practice. If the practice is expensive to adopt, or entails big changes in farm management, such as the adoption of minimum tillage or a new stock breeding system, decisions will not be made quickly. Most producers need to see the new practice in operation and talk to the few innovators who have adopted it before they are prepared to consider big changes to their property management.

Where these complex innovations are involved, farm visits can play an important role. You can relay information on how district producers are progressing with the innovation and practical points which they have discovered.

Extension workers who have conducted trials or demonstrations on the practice can speak with authority and assist the early adopters to overcome teething problems.

Farmers who are slow to adopt practices often need to be very confident of the accuracy of their information before they plan changes. Continued farm visits, field demonstrations and discussion activities are necessary to influence this group.

Extension organisations have been accused of concentrating too much on promoting innovations, and of expending insufficient resources in servicing and fine-tuning technology once it is on farms. The farm visit is the main method of servicing an innovation.

The five-step adoption model emphasises communication from the extension organisation to primary producers. This model is most applicable for simple innovations which originate from outside the geographical area in which you operate.

You will usually find that farmers know about far more innovations than they can put into practice. These innovations often involve complex changes to the farm system. Most farmers are working to integrate at least one change in their properties but this takes considerable thought and some trial and error. Furthermore, no single issue is of paramount importance on the farms throughout the extension district. Therefore it is difficult to generalise about subjects for extension.

When confronted with this complex situation you must choose the target audience for any programmes very carefully. The major extension activity may

best be directed at building linkages with primary producers, agribusiness and research workers to generate and share a body of knowledge applicable to the district. Farmers who are already highly motivated to seek information thus have more ready access to appropriate resources.

It is often up to you to conduct applied research on farms or encourage primary producers to test new ideas themselves. It is difficult in these cases to distinguish clearly between applied research and extension.



A farm walk where dairy farmers examine high-nitrogen pastures and discuss how to integrate this technology into their production systems. Where changes to systems are involved, producers need opportunities to discuss the implications of the changes with others who have similar properties. They may also need some individual advice on applying the technology on their own farm.

Producer opinions on extension methods

Using an analysis of the adoption process and diffusion helps you decide on the most appropriate extension methods. An additional method is to ask the landholders themselves which methods they prefer.

Groups of Queensland graziers were asked to vote on their preferences for various extension methods. The methods were:

- property visits
- office visits
- field days and farm walks
- mass media
- newsletters
- live-in forums
- management packages
- whole farm consultancy
- information centres

The strongest support was for property visits and newsletters. Office visits were regarded as the least important and some graziers said they were reluctant to visit DPI offices.

Management packages received considerable support. A package was defined as a kit of materials fully covering a particular subject. The inclusion of videos in the kit was particularly favoured. Although live-in forums received little support, they were strongly favoured by those who had attended one or who had spoken to graziers who had.

In the East Moreton area, a survey of dairy farmers also found that the farm visit was the most valued extension method. Field days, discussion groups and telephone contact were rated next in that order.

Extension officers in the area placed less value on mass media than did farmers and a higher value on office visits and discussion groups than farmers.

Producer demonstration sites - an example of extension principles in action

A new extension concept being implemented by extension workers in the beef industry is the producer demonstration site. The concept differs from the traditional demonstration or 'field trial' for extension purposes. It recognises the basic principles of adult education: 'self motivated learning' and the advantages of 'learning by doing'. A group or 'cell' of producers is firstly assisted to identify a common problem and then plan to test the best solution(s). The process encourages commitment to the task and responsibility for the outcome in terms of what is learnt. This approach to learning is most appropriate where proven technology (research) is not widely adopted. This may be because in the producers' minds it has not been fully 'tested' under field conditions, or it may be the result of a conservative attitude to change within a social group.

The process

- Identify the target area or community. This may embrace a large number of producers. It would, however, have a known low level of adoption of a practice or practices considered to be advantageous to management.
- Approach a 'key' producer (established contact). Discuss the problem and present possible solutions. If the key producer agrees to cooperate, encourage him to bring together his natural social group or 'cell' of six to eight producers to discuss the issues raised.
- Meet with this group and assist the producers to clarify their problems and needs and form a plan of action to carry out their own investigation (trial/demonstration) on a group member's property and assess the results for themselves.
- Provide continuing assistance to the group in terms of advice. You may offer financial assistance for additional fencing or other aids, but avoid interfering with the day-to-day running of the trial/demonstration, which remains the group's responsibility.
- Finally, you would take a more active role in assisting any members of the group should they decide to implement the new practice, and encourage the group members to share **their** results with interested producers outside the group.

In summary, the producer demonstration site:

- is concerned with defining problems and needs within an identified social group;
- encourages 'self motivated learning' and 'learning by doing';
- is a **practical** observation under **commercial** conditions;
- is a **group commitment** enhancing the acceptance/adoption of the results; and
- is more likely to be acknowledged by **other** producers.

The differences between a conventional field trial and a producer demonstration site are shown diagrammatically in Figures 8.6 and 8.7.

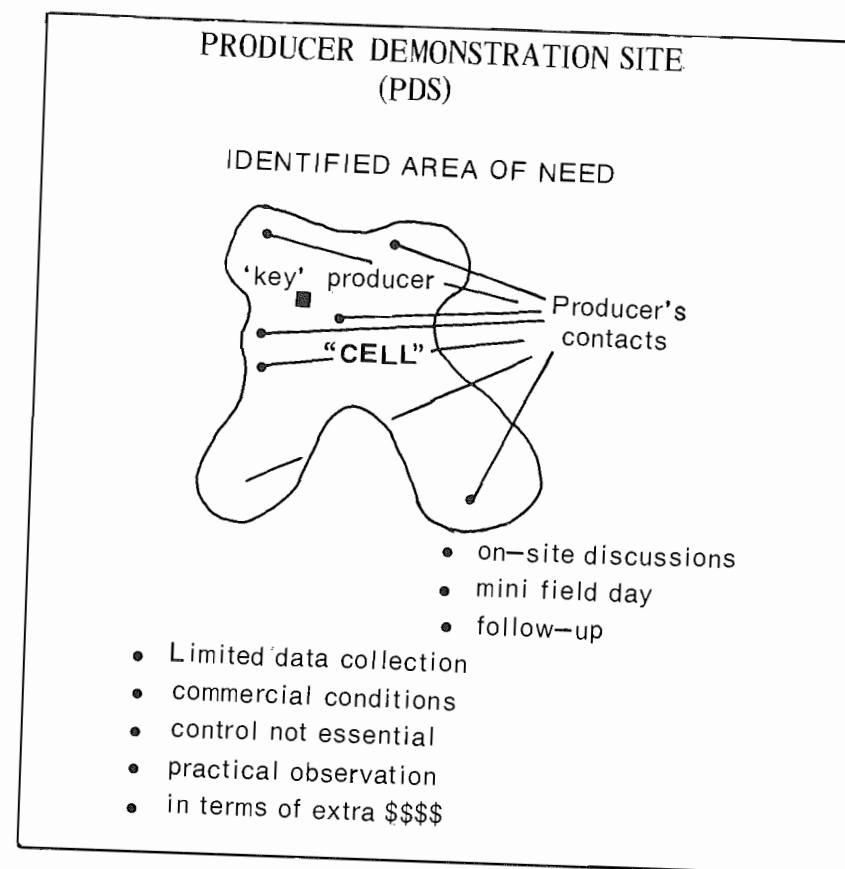


Figure 8.6. The philosophy behind a producer demonstration site.

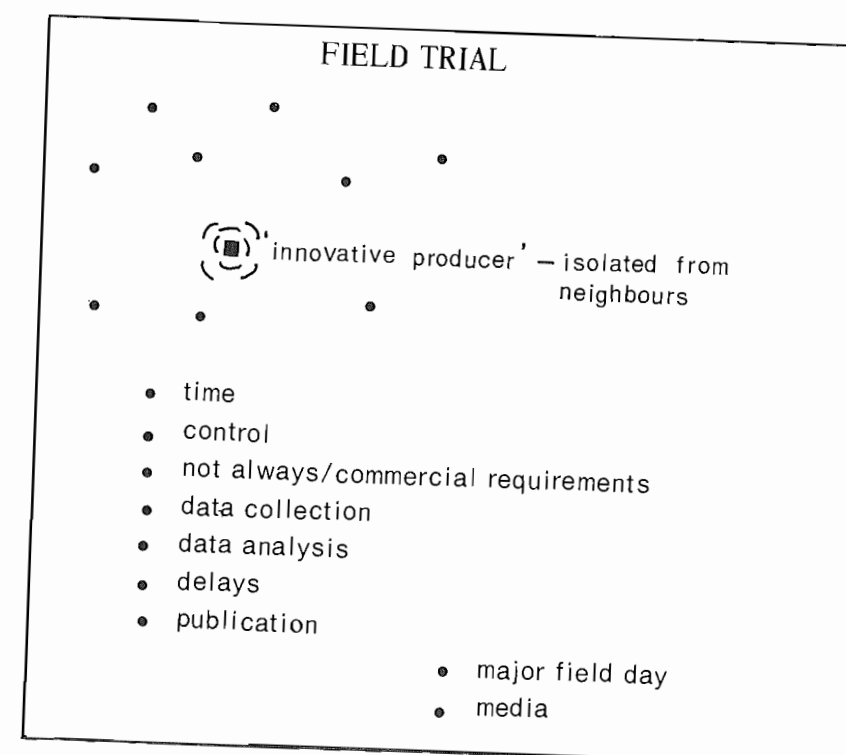


Figure 8.7. The philosophy behind a field trial.

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CHAPTER 9

PLANNING EXTENSION WORK

Introduction

Planning an extension campaign requires you to focus your time and energies to achieve a predetermined result. Planned extension work on significant issues can give you a professional attitude and a sense of achievement. Too often an extension worker leaves a district after many busy years of satisfying minor enquiries, but leaving behind no significant achievements.

We can't plan for 100% of our time. The best we can do is to plan for perhaps 40 to 60%. It helps if we think of our extension work in three ways.

- Planned extension work: with objectives, audience and events all planned in advance.
- Opportunistic work: makes use of occasions as they arise to fit in with a planned objective.
- *Ad hoc*: completely unplanned, satisfies the demands as they occur.

Reasons for planning

- If your work is not planned, day-to-day pressures can result in the job becoming your master instead of you being master of the job.
- Planning can increase the efficiency of the extension operation by improving the allocation of resources.
- A written programme allows for continuity of extension activities in the event of loss or transfer of personnel.
- A programme enables newcomers to extension in a particular area to see a concrete plan of action, which gives more purpose to their early years of work.
- Planning increases satisfaction by setting targets and attempting to achieve them.
- Planning helps extension workers to influence events in agriculture.
- Documentation of plans helps develop and maintain public support for extension agencies and their role in the community.

- If producers are involved in the planning process, it can give them a chance to influence the work carried out.

Remember the clients

Programmes will be more successful if they involve producers in the planning process. Some extension workers make the distinction between 'top down' extension programmes, where the extension organisation decides on content and initiates action, and 'bottom up' programmes, where the major stimulus for extension work comes from producers.

Where the extension organisation initiates the programme, producers can still be consulted about how they view the issues. They can also be consulted on the suitability of different extension methods.

Producers can initiate action through state or local industry organisations. Discussion groups can set the agenda for extension activities through a problem census exercise.

If the programme is based on the assumption that farmers need to be pushed or motivated in a certain direction, it is not likely to be successful. Adults generally do not passively accept their environment. They are continually experimenting with new methods of operating and searching for solutions to problems. If the client group is not tackling long-standing problems, the most likely reasons are:

1. solutions are not available;
2. present solutions are only partly effective;
3. present solutions are uneconomic;
4. clients do not agree with extension workers that the issue is a problem; or
5. the innovation needs group cooperation to be successful, and one or more recalcitrant individuals refuse support.

If 1, 2 or 3 is the case, an extension programme will need to incorporate some applied research in the early stages.

In some cases, a new generation of farmers, who are more venturesome and optimistic, is necessary before long-standing problems can be overcome.

If clients don't see the issue as a problem, then it may be best to drop the programme. However, this should not be done without close questioning of the clients and analysis of their responses. For example, many farmers on the eastern Darling Downs did not see soil erosion as a problem on their farms because they did not recognise sheet erosion. Therefore, increased extension effort was given to having farmers recognise sheet erosion and understand its importance.

Where consumers or exporters are affected by an issue, farmers may have little contact with the problem and so not recognise its existence. A publicity campaign to alert producers to potential loss of markets can prove effective. On other issues, such as milk quality where consumer health is an issue, a mixture of extension and legislation may be required.

Where group action is being held up by key individuals, peer pressure needs to be organised to influence these reluctant cooperators.

The planning process

Extension planning is a process which helps us decide:

- what to do - objectives;
- how to do it - methods; and
- how to measure results - evaluation.

The process of planning involves appraising the situation, problem or opportunity, developing targets or objectives, working out a plan of action, putting this plan to work, and reviewing the situation.

Plans may be limited to what a single person can do on a simple issue, or may involve many other people both inside the extension organisation and in the farming community. An example of the second would be a programme to improve the profitability of a district citrus industry.

Whether the plan is on a small or large scale, the same process applies. This process is shown diagrammatically below.

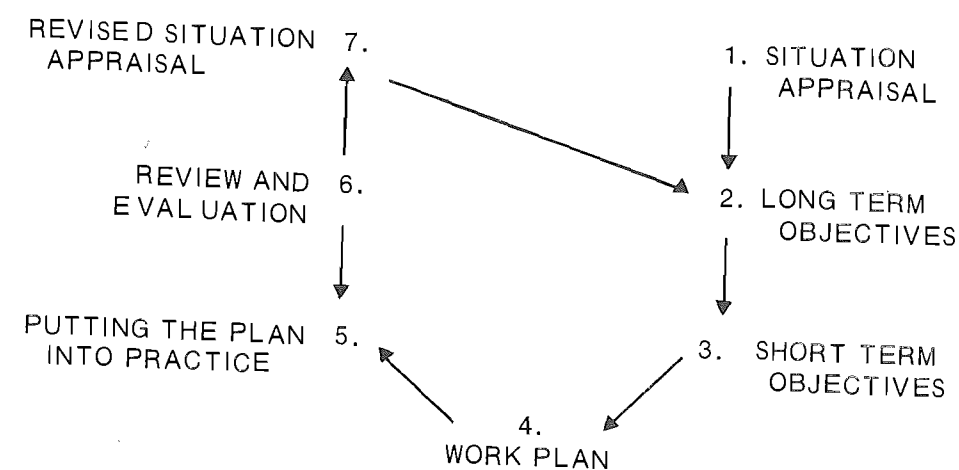


Figure 9.1. The planning process.

Situation appraisal

Situation appraisal is designed to lead to good objectives. It consists of two elements.

- A **situation statement** which presents existing factual information on the industry or district or community and its problems and opportunities. This will affect the decisions on objectives.
- A **situation analysis** which is the result of discussion and analysis of the situation statement, including prioritising of issues and development of the objectives.

The scope and intensity of the situation appraisal depend upon how much information you require.

There are five common types of extension programmes:

- transfer of simple information as in mass media campaigns;
- research/development with producers to resolve technical deficiencies;
- activities to upgrade clients' knowledge through educational means where the technology is developed;
- assisting producer groups to upgrade their technical and economic position in the short and long term; and
- promoting community or industry responsibilities, such as soil conservation and product quality.

A comprehensive situation statement and analysis is particularly important with the fourth type.

The situation statement

We must look at our district in a way which helps us organise our thoughts. For simple programmes, the best way is to look at a series of district opportunities or problems and see which and how many producers are affected. This helps to define the topic and target audience. The process is visualised in the diagram below.

For broader district or industry programmes, the situation statement should contain information from a wide range of sources. Some of the sources of information which might be considered are:

- our own experience from observation and listening;
- farmer queries;
- farmer discussion group ideas;

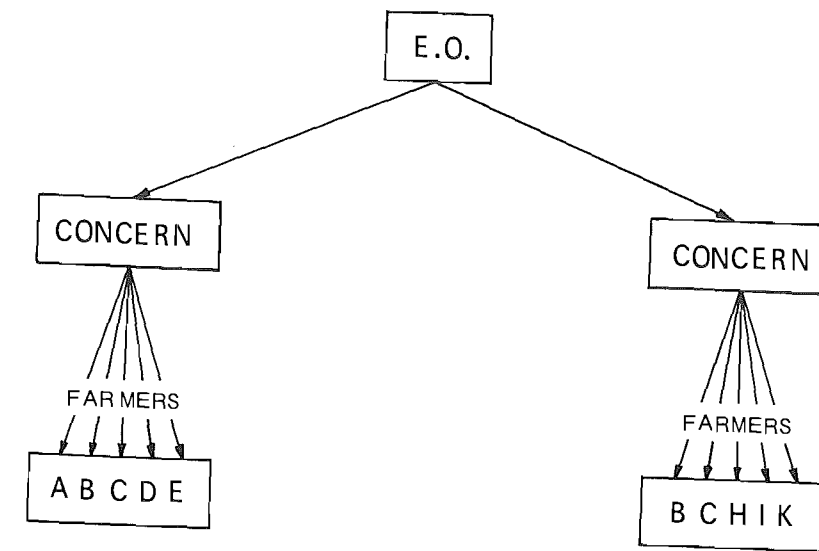


Figure 9.2. Separating the topics and target audience.

- extension organisations' past programmes;
- surveys (extension, university, BAE);
- opinions of industry leaders and better farmers;
- contacts with agribusiness; and
- research workers' opinions.

There is no simple way. The appointment of planning groups with representatives from various interests is very common in the USA, but is less common in Australia.

The type of data that you might collect for a comprehensive situation statement is shown in Table 9.1. Such data is useful for a periodic review of an area or industry, but is not always necessary. In practice, there are usually some significant issues in any production system which vitally concern producers at the time. Information should be collected about these issues rather than the whole district or industry.

This limits the data you need to collect and prevents you from being tangled in endless surveys. If you wish to introduce a simple innovation such as a chemical to control a plant disease, all the data you may need is:

- the cost of the disease to the growers;
- the cost of spraying;
- when and where the disease occurs;
- the type of spray equipment growers have; and
- likely effects on markets of increased production or consumer reaction to chemicals.

Table 9.1 Components of a situation statement

Long-term fixed components	Long-term and short-term variable components			
	Physical	Technical	Sociological	Economic
Area definition Boundaries, shires x areas, agricultural area	(Agricultural production and use)	Agricultural practices Economic, adopted economic, not adopted uneconomic, adopted characteristics	Demography Population distribution, population attitudes, contractors	Labour Permanent, casual, sharefarmers
Climate Rainfall, temperature, evaporation, growing season, winds	Land use Area cleared arable, farm size and numbers, problems area of crops, fallow, pastures	Agricultural pests Insects, diseases, vermin, weeds	Commercial service Service provided, field representatives	Finance Credit availability, farmer affluence
Geology and soils Geology, soil types fertility, soils distribution, water-holding capacity	Inputs Fertiliser, machinery, stock types, crop types	Unsolved technical problems As farmer sees them, an extension officer sees them.	Government services AGRIC. DEPTS. - resources (inc. staff), operations OTHER DEPTS. - location, operations	Markets Size, cost trends, price trends
Topography Elevation, major hills, plains catchment, drainage	Outputs Animal production, gross value, production x enterprise	Existing research Within region, relevant research elsewhere	Communication channels Types, location, influence, present use	Government policies
Vegetation Major types vegetation - soil type relationships		Mechanical Farm machinery available, limitations and problems	Groups Formal, state groups, autonomous Informal	
Water supplies Underground, surface, artificial			Personal identification Innovators, influencers, community leaders	

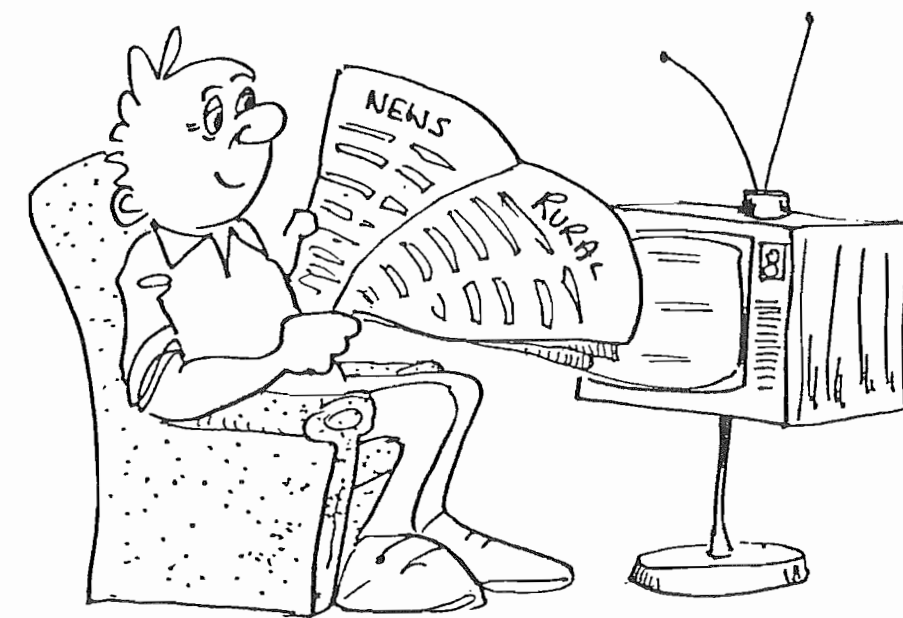
Situation analysis

Once you have gathered information, you have to analyse and prioritise it. Some questions which could start this process are:

- which district industries are growing rapidly?
- will this continue?
- are any industries in decline?
- what opportunities for new developments are there in each industry?
- are there any pressing problems in parts of the district or its industries, in terms of seriousness, urgency and growth?
- do solutions exist to these problems?

Answering these and other questions will involve consulting with primary producers and experts, and making judgements on their inputs.

A sample survey of your potential target audience may be necessary to find the extent of a problem and how producers perceive it. However, people often find it difficult to explain how they perceive issues and events. A group discussion with producers can give you insight into the dynamics of the decision-making process and what triggers producers to act in certain ways. Such a process also helps you pitch your messages at the right level in your work plan.



Mass media creates awareness of new practices and the extension events which promote them. Some producers may change simple practices directly as a result of mass media.

Prioritising

Provided a situation analysis has been thorough, it will reveal any important problems. In consultation with groups and individuals involved, it will then be possible to put priorities on them. Thus a list of problems and their importance becomes available.

Effective prioritising usually involves the team approach. Discussion at team planning sessions initially centres on alternative projects. A logical approach to selecting projects should be used to avoid endless debate and to improve the quality of decision-making.

Thorough analysis and logical project selection is more likely to result if alternative projects are evaluated against a set of criteria. For example, projects can be evaluated on the basis of number of producers affected, seriousness of the problem, the importance of the industry involved and the availability of solutions.

One central Queensland extension group rated possible minimum tillage projects on the basis of the following six attributes.

- It is seen as simple and not too difficult to understand and use. It does not require alteration of existing procedures.
- It is compatible with the existing values, experiences and needs of potential adopters - with social values and beliefs, previously introduced ideas or client needs of innovation.
- It has relative economic advantages and may also reduce risk of crop failure.
- It has relative practical advantages in terms of reduction in labour and improved ease of operation.
- It has results which are easily observed and communicated to others.
- It can be experimented with or trialed on a limited basis - this is particularly important to innovators or early adopters of a new practice.

Each attribute was rated from 1 to 10 for each proposed project. Each member ventured an opinion based on experience, and the consensus produced the final rating. These ratings were then summed. This process gave each project a numerical value and allowed the selection of projects most likely to find favour with farmers.

Developing objectives

If a problem has been identified as important and there are viable solutions and resources to tackle it, the next step is to develop objectives and draw up a work plan.

Long-term/overall objective. A broad statement of what is to be achieved by the whole programme constitutes a long-term objective.

For example: 'to have farmers in the region obtain a higher income through increased milk production over the next five years'.

Short-term/specific objectives. Achieving these objectives are steps in achieving the overall objective.

For instance, to get more milk, the extension worker is to encourage farmers to:

- improve cattle feeding;
- breed better milkers; and
- have better disease control.

Each of these objectives would have a detailed short-term objective.

There are various ways of looking at objectives.

Relevant to the needs of the audience. For any extension programme to be successful, its objectives must be relevant to the needs of its audience. The problem must be seen to be a problem by the farmers and so the objective has to be seen by farmers as something which they feel will help them.

Directed to a specific audience. The objective must clearly indicate who it is aimed at.

'..... the 60 dairymen in the shire who have irrigation

Result-orientated. The objective must relate to how many are expected to change, how big a change is expected or some other outcome which the extension worker wishes to attain.

'..... 50 of the 60 dairymen in the shire with irrigation to adopt

Specific about the change expected. The objective must also clearly state the change expected in the audience, or the practice to be adopted.

'..... 50 of the 60 dairymen in the shire with irrigation to adopt high nitrogen fertiliser application on ryegrass.'

Achievable and realistic. Obviously the objective must be feasible for farmers. One should not try to change too much, too quickly, or even attempt too complex a change.

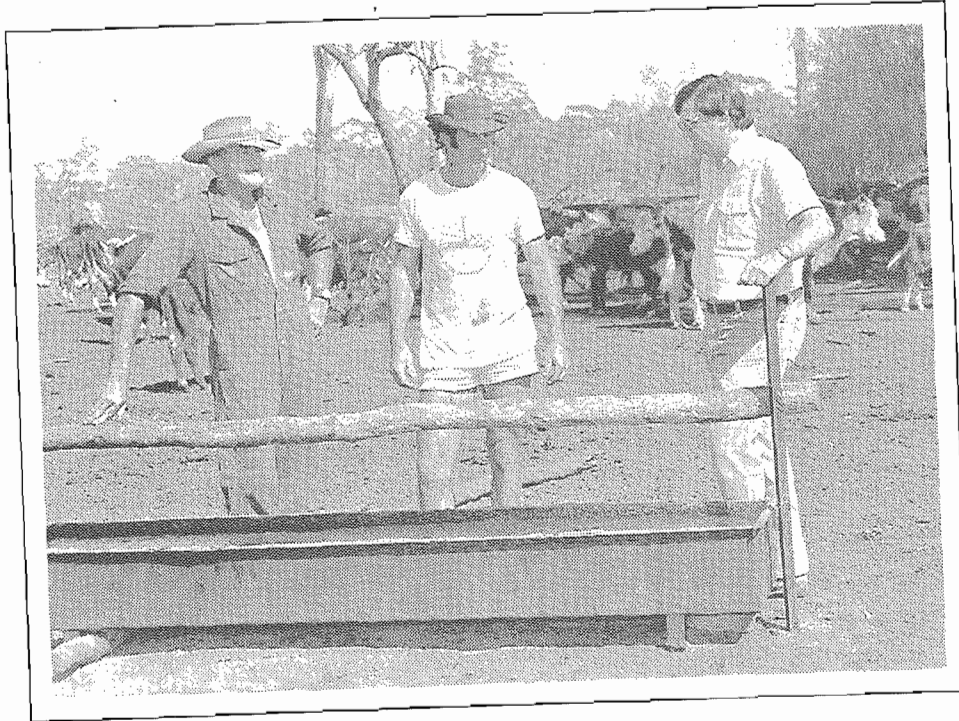
It is better to make a series of small changes to get an ultimate goal.

'..... 50 of the 60 dairymen in the shire with irrigation to use double the rate of nitrogen fertiliser this year, and to double this rate up to 120 kg of urea per hectare per grazing in the winter season'

The above objective also has a **time** scale. Good objectives usually have time limits.

Capable of being measured. Measurement is necessary to assess progress. Using the example above, there are two ways of measuring progress. One is the actual number of farmers using nitrogen. The second is the number using the recommended levels. Progress to the goal is therefore easy to determine.

Work plans



Developing skills, such as the ability to formulate rations, needs individual contact to follow mass media and meetings.

Work plans are the logical extension of work objectives.

The work plan designates what is to be done, who is responsible for the work, when activities are to take place or what methods are to be used, where (district) and which part of the community is to be involved.

Use the questions - what?, where?, who?, when?, how?, for whom? - to build up a work plan.

These questions can be used to build up a sequence of events for which the times, place, audience and person responsible are detailed.

The methods used must be capable of achieving the stated objectives. For example, if the objective is to help producers examine marketing in their industry, data will have to be collected, industry leaders consulted and meetings held with groups of producers. A mass media campaign alone would be totally inadequate.

Ideally, a work plan should have evaluation built in at different stages. This allows you to alter your methods and tactics as you proceed.

You will find a sample work plan in Table 9.2. Note that the objective contains a time constraint, it specifies the audience and it details the evaluation to be carried out.

Method to achieve specific objectives. It is important to fit the method to the objective and also to understand methods in relation to the adoption process and the process of adult education.

For instance, mass media is usually only worthwhile to create awareness of an idea or strategy. It may also arouse interest. However, personal contact and visits to neighbouring properties can well persuade farmers to try or adopt a new practice.

Evaluation of the objective. Provision has to be made in the plan to spend time on making the necessary measurements or collecting data to evaluate progress. It is important work, takes time and therefore uses resources. So it has to be part of the work plan.

Review and analysis. Provision has to be made to review the situation and modify the objectives on a regular basis. Extension planning must be flexible and changes in the programme in response to different circumstances are necessary.



Extension programmes on new cropping systems need farm trials, field inspections, and the involvement of dealers in farm machinery and chemicals.

Table 9.2. Sample plan of work - from R. J. Parkin (1972), An approach to programme planning in agricultural extension in Australia, *Melbourne Notes on Agricultural Extension 7*.

Short-term objective	Behaviour change sought	Present state of adoption	Barriers to adoption	Methods	Locality and audience size	Aids	Cooperators	Period of years	Time allocated	Evaluation planned
To control rabbits for 200 square miles around Mt Someplace by March 1972 (months).	Complete adoption of recommended control measures (by 120 farmers).	Sixty farmers have rabbits particularly under control, rest ignore problem, therefore adoption is medium to low.	Only 45% of area cleared. Thirty-five per cent of area is rugged crown land. Eighty per cent of farmers don't see rabbits as real danger. Area relatively isolated but there is weekly mail and most have radio receivers. Production of area is low.	1. Neighbourhood discussion groups. 2. Create awareness of problems by radio and newspaper. 3. Individual visits to all farms. 4. Concentrated trail laying crown land.	Bromilo (2). McPherson Rd. E. Thring (2) Beatty Park area. Castledine Rd., Graaf Knoll. Group size 15. Whole area. Mt Someplace, Graaf Knoll, Beatty Park. Mt Someplace.	Charts, film and projection equipment. Research results all from head office. Statistics, three radio talks, five weekly articles in 'Someplace News'. Pamphlet and covering letter sent to the 120 farmers. Control units.	Regional Vermin Extension Officer. Sympathetic farmers. F. J. Smith L. Eakin J. Jones N. Mencey District adviser. Stn. 8 VO, 'Someplace News' editor. Typist. Three unit operators. Three unit operators and Phillips vegetable growers.	August October and then every two months. August September September October November to February April December to March	Four days planned then three days per month. Two-and-a-half days. Half a day. Twenty-five days each operator. Ten days each operator.	1. Counts of dead rabbits. 2. Rating of infestation of properties, now and March 1972. 3. Study of warrens over time. 4. No evaluation of methods.

Review and evaluation

Failure to regularly review the programme and evaluate progress may lead to considerable effort producing little result.

Evaluation of a programme will be concerned with reviewing the **objectives**, the **methods** employed and the **results** achieved. Periodic reviews and evaluation can be informal or formal. The informal review could simply involve the programme team getting together and discussing what has taken place and observing results. Very often this is best done in conjunction with members of the target audience. The formal review and evaluation will involve a much more detailed approach and could involve detailed surveys and analysis of records. The findings should be related to an initial base line. Ideally the evaluation should be planned at the beginning of the programme.

Although extension plans are often written annually, the process operates continuously. The good extension worker is continually evaluating how he is going, what the current district problems are and what the producers are worried about. For him, planning and evaluation are an attitude of mind that guides and focuses his energies, rather than an annual activity undertaken for reporting purposes.

Revised situation analysis

After a time, the original situation needs to be reassessed. This should be done when the work plan is completed. However, observations or evaluations during the plan may warrant a change of course before it is completed.

The programme may be wound down or modified because the objectives have been achieved, the issue is no longer a problem, or other problems are more important. If one or more of these conditions is the case, a revised situation analysis should enable a new set of objectives to be chosen.

If the objectives have not been achieved and the issue is still important, a revised situation analysis may be necessary to reassess technical information or farmer attitudes, or select more appropriate extension methods.

Further reading

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CHAPTER 10

EVALUATION

Why evaluate extension work?

As a field extension worker, evaluation provides a means of improving your professionalism and impact. If you measure the effects of extension events and the end results of programmes, you will know if and how you should change your approach to increase your effectiveness. Improving your professionalism can give you a sense of job satisfaction.

A record of evaluating extension activities and results can assist organisations and individuals to obtain funding and support for further extension programmes.

However, you should be sensible about when, what and how you evaluate. Attempting to evaluate all extension activities in terms of measurable results would be ridiculously expensive. Further, preoccupation with measurable results could lead to distortion of extension activities and direct them into those areas where results are easily measured. The most useful approach is to always be self critical and seek feedback which will help you do better next time. Usually this evaluation is informal. Occasionally, a formal evaluation is justified.

Defining evaluation

Usual meanings of **evaluation** are 'to determine the value of something' and 'to assess the effectiveness or relative effectiveness of something'. A practical definition of evaluation in agricultural extension is 'the process of determining how well you are doing and what you are trying to do'.

Potter (1972) has defined evaluation in the context of agricultural extension in this way:

'Evaluation of agricultural extension is the process of systematically examining and making judgements about the relevance of the objectives to the purpose, the extent to which the objectives are being achieved, the effectiveness of the methods being used and the efficiency of the use of resources.'

Evaluation should not be conducted as an afterthought to test the effects of activities and programmes. It should be planned for and built into each step of an extension plan.

What to evaluate

At a broad level, three key steps in the extension programme sequence can be evaluated: objectives, methods and results.

An evaluation of **objectives** focuses on the aims of the programme.

An evaluation of **methods** examines whether the activities were relevant to the objectives and whether they were well conducted.

Results evaluation concentrates on the changes on farms.

Bennett (1976) saw the extension process as a seven-stage hierarchical model. The 'chain of events' that usually occurs as an extension project progresses provides the basis for selecting what to measure.

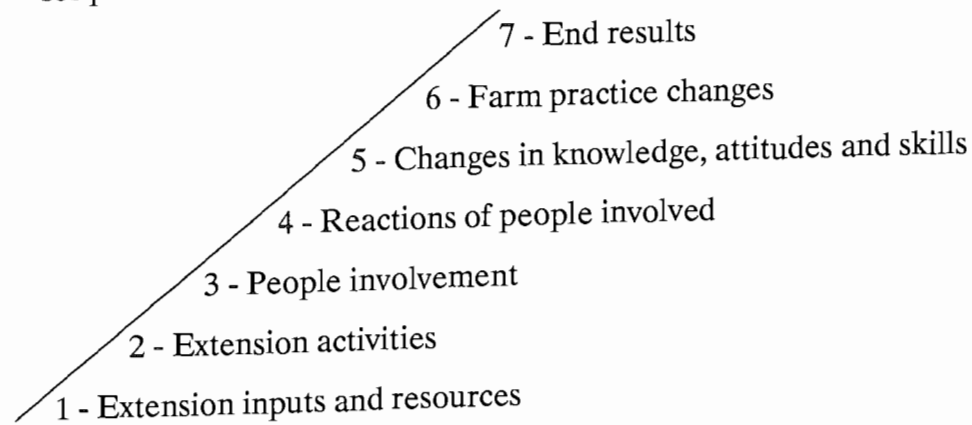


Figure 10.1. Categories of output resulting from extension input

Figure 10.1 shows six categories of output resulting from input of extension resources. Detailed major project plans would normally include objectives indicating desired achievements in each category. Success in achieving objectives at any one level generally depends directly on the success achieved in the level below.

An important point to note in this model is that as you measure criteria further up the hierarchy, they give a more accurate measure of your success. For example, at level 4, the fact that people reacted favourably to a series of meetings is a fair indication that the meetings were well run. But a better indication of extension success is whether those attending learnt anything (level 5). A better indication still, is whether they used this knowledge to change farm practices (level 6). Finally the end result (level 7) should be more profitable farms or better crops and livestock. If farm practices change but the end result does not benefit producers, this result could be due to unforeseen circumstances, or lack of good information inputs.

However, there may be some programmes which aim to benefit consumers or the community as a whole, rather than producers. The end results on farms may be unimportant.

You may ask, 'If the top levels of the hierarchy are the most significant measure, then why bother with the lower levels?' There are two answers: first, data on the lower levels may indicate the reasons for success or failure at one of the higher levels; and second, information at the higher levels is often very difficult to gather.

It is easy to measure reactions to a field day by questioning a sample of people after the event, but more difficult to survey farms to find out if practices have changed.

To find out if practices have changed, you may have to pick a sample and survey a number of farms. This may mean you have to define the practice very well to avoid misunderstandings. Another difficulty is that you may have to rely on farmers' memories for when and how much they have changed a practice. Also you may find it difficult to separate the influence of your own activities from that of other agents, price changes or even the weather. Surveying farms well enough to gain reliable information can be a major undertaking needing considerable resources.

How detailed an evaluation?

At each level of the hierarchy, evaluation can be carried out with various degrees of sophistication.

Frutchey (1959) suggests an evaluation scale ranging from simple or casual everyday evaluations to scientific research. The scale is shown in Figure 10.2.

Casual everyday evaluations	Self-checking evaluations	Do-it-yourself evaluations	Extension studies	Scientific research
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Figure 10.2. An evaluation scale.

Frutchey (1959) considers that a thesis for a master's degree would probably fall in his 'extension studies' location. In practice, district extension workers can rarely go beyond the do-it-yourself evaluations on Frutchey's scale. And usually they would be best advised to concentrate on improving their ability at self-checking evaluations.

The sophistication of the evaluation determines the type of evidence collected and the means of collecting it. Methods of collecting evidence are outlined below.

Experiments and tests. Evidence for evaluation of methods can be obtained from experiments, tests and surveys which indicate if, and perhaps how much, people have learned. Experiments are necessary for most comparative evaluations of methods. Some examples such as Evans' (1968) study of farmers' ability to read graphs and Tuohey's (1970) study of the reading ability of farmers

suggest that though there are difficulties in this type of work, they are not insurmountable provided that the aim of the experiment is not too ambitious.

Teachers in formal education test their students to evaluate teaching methods as well as to evaluate students. Farmers were tested in the experiments referred to earlier and also by Bardsley (1969) for evaluations of methods.

Surveys. A survey may be the only way of obtaining the evidence needed for an evaluation, but mail and interview surveys are expensive in time for both surveyors and respondents.

Collation of information. Information can be obtained from published statistics and records of local government authorities and state and commonwealth departments. Available records and statistics are often inadequate, but despite this, extension workers could make greater use of them than they do. It is possible to get more or more up-to-date information by asking for it.

For example, other state departments will usually allow access to unpublished statistics and the Commonwealth Statistician sometimes provides more up-to-date and more detailed figures when asked. The danger in working from statistics alone is that they can easily lead to unjustified conclusions. It is desirable to check tentative conclusions with someone who knows the area or industry.

Panels. Some extension workers have a number of farms which they visit regularly to assess seasonal conditions and changes in farm practices or farmers' attitudes. Radio stations have used a similar system to evaluate programmes. There are two difficulties: the farmers selected are rarely a representative sample; and because they are visited more than other people, the farmers soon cease to be representative, even if they were at the start.

Observations. Making observations in the course of extension work is the most common method. With practice and a system, this can produce reasonable estimates of major physical changes, for example, in the area sown to a crop or the area with reduced tillage practices. But unsystematic observations are unreliable and are likely to be highly misleading about social and economic factors.

Using the results

Time spent in evaluation is time diverted from other activities. So the cost of an evaluation needs to be weighed against the potential use of the results. We are most likely to be able to justify an evaluation if the results will guide the next stage of a programme, or if the results will help improve the methods being used in a programme.

An intensive evaluation still may not yield clear results. In the rare case that the purpose is specific, the criteria absolute and the evidence unambiguous, judgement is automatic: we have succeeded or failed absolutely. In the real world, judgements are nearly always about degrees of success and failure. Skill

in judgement can be developed by experience or it can be distorted by faulty methodology or lack of objectivity.

The informal approach is particularly suitable for obtaining farmers' opinions on their problems and assessing their level of knowledge of the practices which are to be advocated in an advisory project. The extension worker's knowledge of the situation in his area may often be good enough for him to assess the position without further information-gathering.

Some simple techniques for informal evaluations

The focused interview

A problem with interviews and questionnaires is that the interviewer sets the subject and often his questions suggest acceptable answers. People tend to give the interviewer the answer they think he wants.

An informal technique to overcome this is the 'focused interview technique'. This is suitable for gathering information after people have had a common experience such as a field day. A focused interview might proceed as follows.

Extension worker: 'What did you think of the day, Fred?'

Farmer: 'Really good.'

Extension worker: 'What did you like about it?'

Farmer: 'It was all good, you learn things all the time at these shows.'

Extension worker: 'What interested you most?'

Farmer: 'Well it was interesting to see the planting rates on those crops. It looks as though my rates have been too low.'

In this example, by starting his questions at a vague general level and asking more specific questions later, the extension worker allows the farmer to mention what interested him most, and encourages him to further define it if necessary.

If perhaps the field day subject was harvesting machinery and not planting rates, you have found that for at least one person the activity had unexpected outcomes.

This technique generates different information to a formal survey.

Studies of agents' sales

Many extension projects make recommendations which necessitate producers buying something. For example, a campaign to increase the use of irrigated pasture would involve cooperators buying pasture seed and fertiliser.

Extension workers can quickly measure their success by surveying the increases in pasture seed and fertiliser sales at the local merchants' stores. Most merchants keep reasonable records of these sales and they can be a source of valuable information.

Using the media

Extension workers often contribute items to country newspapers. One method of finding out how well they are received is to have a statement at the end saying 'More information can be obtained by phoning your local officer' or 'A special pamphlet on this subject can be obtained by calling at the local office'.

You can measure your readership and the importance of the subject matter to them by the number of callers.

Conducting formal questionnaire surveys

If you intend to conduct a formal questionnaire survey, you should consult someone with expertise in the field before you rush in. Some points to consider:

- what do you want to find out?
- is a questionnaire survey the best method?
- how are you going to analyse the results?
- what sample size do you require?
- does your survey form contain ambiguous or double-barrelled questions?
- are you going to pre-test your survey form?

Some examples of evaluation

A simple evaluation of an activity

One extension group in Queensland posted a regular newsletter to 400 producers in their area. As postage costs rose, the group wondered if they were getting value for money. How many of the producers even read the newsletter?

A simple answer was provided by having a tear-off label on the back of the newsletter for two successive issues. The label read: 'If you wish to continue getting this newsletter, please tear off this slip and post it back'.

The extension group found out how many producers valued the newsletter and cut their postage costs.

A formal survey focused on objectives

One adviser to northern Queensland beef producers thought that some of his recommendations were falling on deaf ears and invited an outsider to find out whether or not he was effective and how he could be more effective.

The adviser had been recommending the following practices for 10 years:

- botulism vaccination;
- phosphorus supplementation in the wet season;
- early weaning of calves;
- performance testing of bulls;
- low-cost stylo pastures;
- vibriosis vaccination;
- plain wire electric fencing;
- quietening weaners;
- grading up to Brahman blood;
- dehorning; and
- feeding horses molasses rations.

A survey was conducted by an outsider with the specific objectives:

- to find out what practices the area's beef producers saw as relevant and possible to introduce;
- to define barriers to adoption of the recommended practices; and
- to assist extension staff to set relevant extension targets.

It was found that some of the practices recommended needed good stock control. Lack of good fences in the wild mountainous country and lack of good labour meant that graziers could not muster cattle well enough to carry out some of the advanced practices, even though they agreed that they were desirable. It was obvious then, that graziers were at the stage where they were still improving the basic infrastructure of their properties. It was therefore recommended that more emphasis be placed on extension in cattle yard and fence design. Once fencing was in a reasonable state and animals could be con-

trolled, extension recommendations could switch to more sophisticated practices.

An example of results evaluation

An advisory project in the UK had the objective of encouraging the spraying of potatoes to reduce damage caused by potato blight. In the area involved, it was previously considered that routine spraying of potatoes against blight was unprofitable. A series of trials showed that it was profitable to do so in most years and a project encouraging the routine spraying of potatoes was carried out. Leaflets were circulated to all potato growers in the spring of 1969 and 1970. Meetings were also held during the intervening winter. Progress was monitored by obtaining information from the main supplier of blight chemicals in the area. The information was as follows.

Year	Acreage of blight spray sold by merchants
1964	3 740
1965	6 150
1966	4 806
1967	6 250
1968	7 043
1969	14 542
1970	17 173

There was a dramatic increase in the use of spray chemicals in 1969 following the circulation of the advisory leaflet in the spring of that year, and the practice was further consolidated in 1970. From sales figures, the advisers estimated that approximately 80% of the potato acreage had been sprayed in 1970. They wished to confirm this and also to find out if the recommended spray routine had been followed. They conducted a survey in the autumn of 1970 which indicated that 83% of the crop had been sprayed in that year; the majority of farmers had followed the recommended routine.

Using follow-up surveys for results evaluation

In the Darling Downs region, a series of 14 one-day schools on gross margins for decisions was conducted. A total of 185 participants attended.

A questionnaire to gauge the efficiency of teaching and presentation was filled out by 151 participants at the close of the schools. A year later, a second questionnaire to measure the extent of adoption and application was mailed to all participants.

Responses to the mailed questionnaire indicated that over the 12-month period, 64% of the respondents had used the technique, most more than once. They also indicated that the gross margins were useful and easy to apply. A high

interest in follow-up schools was shown and some useful pointers received as to the relevance of the system to different agricultural and pastoral enterprises.

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CHAPTER 11

RECENT DEVELOPMENTS IN EXTENSION AND SPECULATION ON THE FUTURE

Farm technology has become increasingly sophisticated and also subject to rapid change. Farmers consequently have to become more efficient at gathering and assimilating information, while those supplying it have to become more responsive to demand by increasing their ability to store information and package it in a readily usable form.

Until the 1960s, a farmer could learn to produce his products with the assurance that the technology would change little in a decade. But in recent years, processes have been increasingly mechanised and there has been a rapid increase in the number of ag-vet chemicals available, often needing precision in rates and timing of application. These changes require the producer to have increased mechanical and biological knowledge. The capital intensiveness of modern agriculture means that landholders now need a good understanding of finance.

Australian agriculture was traditionally based on the production of standard commodities for a narrow range of markets. Traditional markets for many products have shrunk, while new markets now demand a different range of products, often with very stringent quality requirements. Producers are now often forced to make abrupt changes in their enterprises to produce new crop and livestock products to capture new markets. With low profit margins, there is no time to learn technology by trial and error. Knowledge must be available to allow a rapid and efficient reaction to technical and market changes.

The proliferation of specialist technologies means that increasing reliance has to be placed on information networks. The agribusiness sector has assumed increased importance in the development and extension of specialist products and expanded government extension contact with it becomes necessary.

This chapter gives examples of responses to cope with this evolution in agriculture. Each of these new developments promises an enhancement of clients' expertise and independence. Good farm managers will use these developments to expand their ability to cope with change and increase their advantage over others.

Computers in agriculture

The earliest use of computers by farmers in Australia was in the analysis of financial accounts using large central computer systems through a mail-in bureau service. The system catered for a number of farmers and the programs were not tailored to individual needs. Microcomputers now available to the farmer have the capacity to cater for individual needs, though the present lack of good-quality, user-friendly software limits their use.

The farmers that will gain the most from computers will be those with large properties and those with a high degree of control over critical elements in the production system. There is greatest scope in the intensive industries such as dairying, pig raising, poultry, and multiple-enterprise farms. For example, existing software can provide pig producers with data on herd management and performance. Details, such as a summary of weekly activities including sows served, conception rates, litter sizes and expected dates of farrowing, can be given by available software. This allows the manager to identify performance problems from the figures available and make appropriate management changes.

Today, farmers are using microcomputers for:

- financial record-keeping and analysis;
- physical record-keeping and analysis;
- farm decision analysis (for example, investment and enterprise mix decisions);
- breeding records;
- communication with other computers to gather information; and
- communication with other computers to execute market transactions, such as ordering parts and selling produce.

The farm computer can encourage the manager to achieve new levels of understanding of input-output relationships and their financial consequences. Proper application of computers demands a good deal of individual tuition and a high level of persistence.

Extension practitioners are now using expert systems which allow them to calculate the effects of changes in a range of inputs on a production system. For example, an expert program can calculate the effect on wheat yield if seeding rates are reduced and fertiliser rates are increased on a certain soil type.

Videotex

Videotex is a two-way inter-active system which links large computer databases to modified television receivers or microcomputers via public

telecommunications networks. The user can call up a database and the information appears on the television screen. The initial screen display shows the index of material, and the user keys in to the appropriate menu item to access the information required.

The place of this system in agriculture is as yet unclear. It has advantages over print media for information such as market reports where values fluctuate daily, although a telephone call may be just as convenient for the user in this case. Current experience in various parts of the world is that weather, livestock and commodity markets, news, newsletters or reports, planting and herbicide recommendations and decision-assisting programs, such as cost calculations, are most often used.

Several organisations operate systems throughout Australia.

Viatal is a telecom national Videotex service providing access to a range of databases.

Elderlink provides a wide range of general and farm-related information. General material includes Sharelink for up-to-date share market reports, travel, telex and games. The Farmlink system offers a market reporting service, giving details of major fat stock and store markets. A variety of calculations is offered, allowing subscribers to calculate gross margins on stock enterprises, calibrate boom sprays, and budget for supplementary feeding programmes.

Information Express is for the farmer who likes to have 24-hour access to international commodity and livestock markets. Commodity prices are listed and adjusted continuously during trading hours. Subjects include grains, soybeans, cattle, pigs, maize, beef, cotton, sorghum, orange juice, potatoes, coffee and sugar.

One of the most impressive facilities of Information Express is the gross margin analysis and enterprise statements prepared by the National Australia Bank from information provided by state departments of agriculture and agricultural colleges. The data covers farm yields and prices, inputs and costs for most types of rural enterprises in all major agricultural and pastoral regions in Australia.

Using this information, primary producers can compare their performance with averages based on survey results.

Country-Wise is an independent rural information service linked in with Viatal. It was designed specifically for farmers and country communities by a Western Australian farmer. It includes data from 5000 Ag-Notes collected from every state in Australia.

Country-Wise offers a classified ad service where producers can write and enter their property or machinery ads to all Viatal users. It also offers spray charts with cross-referenced weed and chemical combinations. Advice on taxation is also available.

The major use of this technology may be in extension organisations rather than on farms. The computer storage of trial results, current chemical recommendations and reference material will allow field staff ready access to information which is difficult to store and retrieve by other means. However, such a system needs support staff to input information in a readily understood form.

Videos

Improvements to electronic technology have made videos easy and quick to make and have placed a powerful new tool in the hands of extension workers. Because of the ease with which videos can be made and the widespread establishment of video libraries, video tapes offer more than just a different form of movie film.

Videos have been found to be the most effective way of reaching some ethnic audiences. Professional-quality videos released through commercial libraries have had considerable impact.

Farmer information centres

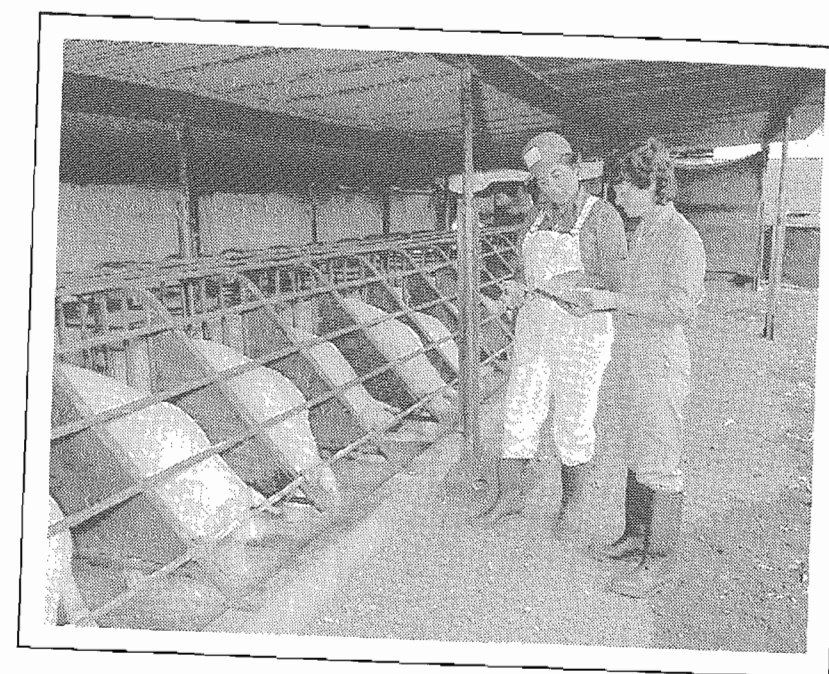
Farmer information centres have been set up in some areas where extension staff had difficulty in coping with routine enquiries. These centres contain a readily accessible store of information to allow farmers to search for answers to their own enquiries.

Farmer information centres have most application in the coastal belts which attract people to settle on small farms and live in semi-retirement. The pleasant climate in these centres lends itself to horticultural production. This can result in a heavy demand on extension staff to answer queries from new and prospective rural producers. An information centre is designed to cope with these simple enquiries and free extension staff to take a more proactive role.

The clients are able to access a library of materials which will answer simple queries as well as satisfy the demand for more general information. Producers are able to browse at their leisure through a wide range of subject matter and materials to develop their general understanding of farming in the area.

The materials available are Farm Notes and booklets, videotapes and interactive computer programs. Ideally the centres should be where producers will have ready access to them, such as in a town shopping centre.

It remains to be seen how successful the trial centres will be, as they have to be staffed and extension workers will still have to develop information packages for them even if they are free of many routine enquiries.



Computer analysis of production systems is suited to intensive industries.

Speculation on the future

If we use current trends to form a picture of how agriculture will develop over the next 20 years, we are probably using an unreliable basis for our projections but it is all we have. Following are some predictions on future trends in Australian agriculture.

- Agriculture will provide a lower proportion of GNP than it does now but still provide a significant proportion of exports.
- There will be a reduction in the number of commercial rural holdings.
- Remaining properties will be increasingly business-oriented, with their production systems being highly capital-intensive and dependent on off-farm inputs.
- Hobby farms will provide a significant proportion of output in some areas.
- Concern for the environment will remain an important issue.
- Significant structural changes will be imposed by outside forces, such as changes in world markets and increases in the capacity and complexity of agricultural machinery.

Following are some possible responses in extension to these trends.

- Agribusiness is likely to take an increasing role in extension. Capital-intensive agriculture will need an increased level of input from commercial firms and their agents will need frequent contact with farmers to service the

use of their products. This could occur against a background of declining interest in extension by governments as the number of people in agriculture and their importance in the economy decline.

- Extension workers will have to be expert in whole production systems rather than narrow disciplines. Primary producers may not have the time or patience to deal with several subject-matter specialists nor the capacity to experiment on how their information should be integrated.
- Managing information systems will be an important function in extension organisations. Classifying, storing and retrieving information will be vitally important for the efficient operation of extension agencies.
- Development work on production systems could take more of the staff and resources previously devoted to extension. Extension to already highly motivated producers may be less of a problem than integrating pure research findings from various disciplines into a package of practical recommendations.
- Extension organisations will have to develop flexible structures to respond to the rapid and significant changes on farms. There will be a need to coordinate and integrate the work of many disciplines and this will require temporary project teams rather than static structures.
- The role of government in implementing health regulations and in settling disputes over competing uses of land will increase.
- The challenge for the future extension worker will be to become increasingly expert in a wider range of technology and to develop a bank of data to allow an informed and flexible response to rapid changes in the environment.

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