Chapter 30
The Social Dimensions of Mixed Farming Systems

Decision Making, Drought and Implications for Extension

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Abstract Most mixed farms in Australia are family run, and so the goals of the family and of the farm are closely inter-related. This chapter describes and discusses social factors which influence decisions made on mixed farms with particular reference to the influence of drought. Decision making on mixed farms is an extremely complex process as many factors must be taken into account, some factors are difficult to quantify and uncertain variables such as climate and commodity prices are important. The factors influencing changes to the farming system and the influence of drought on changing the system are discussed. Some implications for research and extension are described. Two social research projects contribute to the chapter: the Grain and Graze Social Research project and the BCG—Critical Breaking Point research into effects of drought on farming families.

Keywords Mixed farms • Goals • Decision making • Social factors • Drought

30.1 Introduction

Most farming systems in Australia are run by farming families. These are often multi-generational, the farm having been held in the family for many years, often with a strong emotional tie to the land. The farming system adopted by a family is also often strongly linked to tradition and the preferences of the individuals involved. Farming systems have always been under pressure to adapt and improve in response to both external and internal change. In this process, it is vital to understand the social elements operating in the context of the whole system, especially when the farming system is under some sort of threat, such as drought. The majority of farming systems in Australia are mixed, especially rainfed, family owned ones, with livestock and cropping enterprises managed by the same family. These enterprises often use the same land in any one year and complement each other; for example, crop residues

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after harvest are often grazed. This mixed type of farming system has evolved not only because it is the basis of the early, self-sufficiency emphasis in Australian agriculture (see Davidson 1981), but also because most Australian soils are of 'mixed' quality and farmers have become skilled at using diversification to manage this and other risks. Some soils (and rainfall) are good enough for continuous cropping. However, if soils are not growing crops, they can be growing pastures for grazing animals. The proportions of the farm allocated to crops and livestock depend on factors such as soil types, enterprise profitability, farmer preference and climatic conditions (see also Chaps. 11 and 26). A mixed crop–livestock farmer may move in or out of these enterprises over time. In this chapter, a mixed farm is defined as one operating more than one enterprise, usually both crops and livestock. The recent drought in Australia and predictions of more frequent and intense droughts under climate change are making decisions on proportions of enterprises in the mix especially complex.

This chapter aims to provide an understanding of three main aspects of mixed farming:

1. the types of decisions faced by mixed farming families, particularly in the context of drought
2. some of the factors involved in modifying mixed farming systems
3. the consequences of these findings for agricultural extension.

This understanding is based on the authors' experience of working with farming families as management consultants over about 20 years, and with the results of social research conducted in two large projects, 'Grain and Graze[1]' and the Birchip Cropping Group's 'Critical Breaking Point?'.

'Grain and Graze' is a research, development and extension program working to improve the economic, environmental and social sustainability of mixed farms in southern Australia.[2] It is a 5-year project that started in 2003, and includes extensive research to improve understanding of the social dimensions of mixed farming systems—in particular, how farming families make decisions about their farms. As part of this research, in-depth interviews were conducted with about 100 mixed farming families and advisors.

All farmers interviewed were or had been running livestock and growing crops. The livestock enterprises included sheep for wool and meat, and/or cattle for breeding and fattening; crops included wheat, barley, oats, canola and grain legumes.

To explore how farm businesses make decisions, people were asked a range of questions such as:

- What are the strengths and weaknesses of your farming system?
- How and why has your system evolved to where it is now?

[1] Grain and Graze is run by Meat and Livestock Australia, Grain Research and Development Corporation, Australian Wool Innovation and Land and Water Australia. http://www.grainandgraze.com.au/

[2] The social research project of 'Grain and Graze' involved 1–1.5 h, in-person interviews with 80 farming families and 20 advisors based in 9 regions between February 2006 and February 2007. Interviewees were chosen using a combination of random sampling and snow-balling (Bryman 2004). Detailed notes of the interviews were analysed systematically and iteratively for their key themes.

- What has caused the changes in the system?
- What decisions have you made as you have changed your system?
- When deciding to change your land use/system, how do you work out if it would be more profitable?
- What approach do you take to looking after natural resources?
- Do you think mixed farming is more/less profitable than a single enterprise system and how do you know?
- How confident are you that it is more/less profitable?
- What tools did you use to work it out?
- In deciding for/against running a mixed farming business, describe what has influenced your decision (a range of prompts may be used, such as time, family, skills, money, workload, holidays)

The results of this research form the basis of 13 discussion papers, written to outline a range of social issues involved in managing mixed farming systems (McGuckian 2006). The results are also being used to inform extension activities throughout Australia.

'Critical Breaking Point?' (CBP) is a socially-oriented investigation into the effects of drought and other pressures on farming families in the Wimmera–Southern Mallee region of western Victoria (Birchip Cropping Group 2007). The award-winning Birchip Cropping Group, organized interviews with approximately 60 mainly mixed farming families about their experiences of drought. These were followed by 6-month follow-up interviews with a sub-set of 20 farming families, to be repeated in another 6 months. This will help in understanding how farming families' experiences, with the decisions they make, change over time.[3] As in 'Grain and

[3] In the 'Critical Breaking Point?' project, 60 farmers and their families were randomly selected from across the Wimmera Southern Mallee region. Interviewees were not screened to select only those 'badly affected' by the drought, but included those who felt they have been only negligibly affected. Each interview was semi-structured and lasted on average 2 h, with the shortest being approximately 1 h and the longest being over 4 h. Interviews were fully transcribed and, in conjunction with the handwritten interview notes, were analysed systematically by working through them and building a progressive code of key themes. These themes were then mapped in mind maps and tables, based on a grounded theory approach that prioritises data-driven and inductive conclusions (Alvesson and Skoldberg 2000; Glaser and Strauss 1967; Glaser 1993). In keeping with this methodology, themes were re-tested against transcripts in an iterative process until the key findings emerged.

A key to this research was using local interviewers. This not only helped to illicit more insightful information, but provided the interviewers with listening and research skills they can use elsewhere, including in further research in their community. Four suitable, local people were recruited for the task with the assistance of BCG. They signed a contract with BCG including a confidentiality clause and were remunerated for their work. Interviewers were trained intensively in qualitative research and interview technique, were accompanied on their first interviews, and were debriefed during and at the completion of the interview process.

The first phase of this research was conducted over a 2-week period in February 2007. A second phase of interviews was conducted, 6 months after the original interviews. This phase is based on a sub-sample of 20 families from the original 60, which is skewed towards younger and older farming families to follow up issues specific to them that were highlighted during the first phase.

Graze' 'Critical Breaking Point?' explores farming families' decisions and decision-making processes, with explicit interest in the role of 'external' pressures such as drought, cost of inputs and 'rural decline'. As with 'Grain and Graze', also, the results are being used to inform both extension activities, and government policy on rural needs.

The present chapter first discusses the multi-layered complexity of the decisions farming families make. It then examines the decisions that interviewees in the Grain and Graze research have been making about modifying their mixed farming systems. The Birchip Cropping Group's CBP research is discussed in terms of the impact of drought on farming families' decision making.

30.1.1 Types of Decisions

A discussion with a farmer about a farming system covers a vast range of topics. For example, Grain and Graze interviewees, stated that matters they have to consider in a calendar year include: lambing time; fertilisers for crops and pastures; calving time; reproductive management; crop choice; sowing method; leasing or owning a harvester; labour requirements; grazing crops; planting trees for erosion control; shelter for lambs; targeting lamb markets; animal health; climatic risk; cash flow; and capital purchases. All of these considerations are inter-related and interact continuously, as farmers react to changing circumstances. In doing so, they create other circumstances requiring response.

Our research highlights how farmers must consider 'family' elements, such as availability of family labour, family preferences and targets, services and opportunities available in the local area, off-farm income, large family expenses, if and when to have a holiday and farm succession. These family elements interconnect with those of the wider non-agricultural community. Overall, farm production decisions are encased in many layers of 'non-production' and even 'non-farm' concerns that farmers explicitly or implicitly take into account (Fig. 30.1).

The Cynefin Institute (Snowden 2003) usefully describes decision making as simple, complicated, complex or chaotic. A **simple decision** has one right answer. For example, choosing where to file a document in the office is a simple decision—if the office has an organised system. A **complicated decision** has a right answer but there are many factors involved and it is difficult to know the answer. For example, building a piece of machinery is complicated but, if it is done correctly, it will work. Choice of herbicides in a farm system is often complicated as it requires a depth of knowledge to make the recommendation, but often there is a right answer. Because these decisions are 'straight forward', decision making tools such as computer models can be used to work out the right answer. Such decisions can also be delegated to external experts such as consultants. In contrast, a **complex decision** involves many factors and has many 'right' answers. Some of these factors cannot be easily understood, measured or compared. Rational decision-making approaches such as cost-benefit analyses need to be complemented in these situations

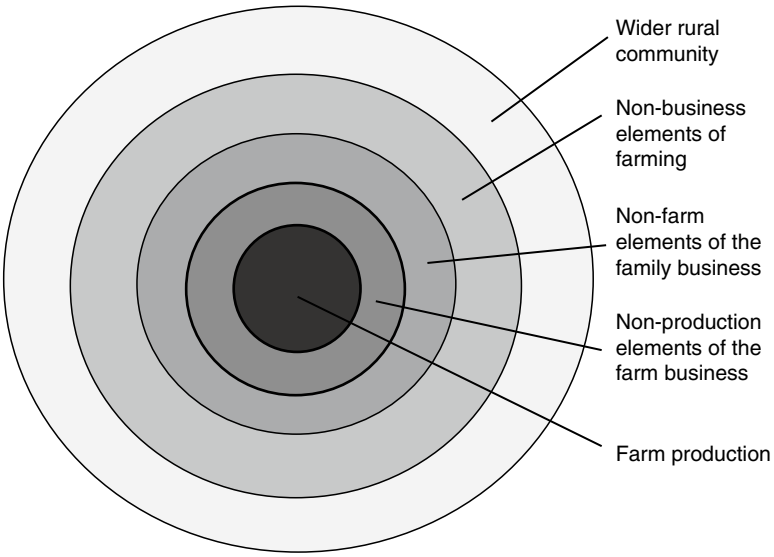

Fig. 30.1 The many layers of factors that farmers take into account in their decision making

with 'non-rational' tools such as 'gut feel' or intuition. Although parts of a complex decision can be delegated, ultimately it is up to the farm family or manager to make the decision.

In mixed farming systems, much decision making is complex. There are many considerations, which are constantly changing, many of the factors involved are unknown or difficult to quantify, or their relationship with other factors is poorly understood. For example, how heavily to graze a pasture on light soil can be a complex decision. The decision will depend on how much pasture is available for the sheep and what quality is required at a particular stage in pregnancy. It will also depend on how much damage grazing does to the soil (which differs between wet soil and dry), on the farmer's attitude to soil management and to the environmental values of the property. Running more sheep may make the property more viable in the short term, yet affect the family's ability to manage other enterprises or to go on holidays; and may lead to a workload that is too much for the family to handle. Questions about the sustainability and desirability of the situation and ultimately the question of whether the family can or should stay on the farm may then come into play. In this way, a myriad of interconnected factors and increasingly profound questions flow from a seemingly simple grazing management decision, thus illustrating the complexity of many seemingly simple decisions on a farm.

The relative complexity of mixed farm systems is increased if, as is common, they are family-operated. This is a consequence of there being multiple decision makers in often intricate relationships, and with a blurred professional-personal divide which stems inevitably from living in one's work place.

The vital social dimensions and consequent complexity of decision making on farms are often not acknowledged by farmers, nor taken into account by extension workers and researchers. Yet, our surveys suggest that the fundamental reasons for the farming family choosing their occupation are social ones; These reasons include: flexibility of lifestyle; the opportunity to work alongside their children; an attachment to the land; or simply that they like doing it. These, of course, are similar to the 'social' reasons used by most of the human population to make choices in life such as preference, family or convenience. Many business people make choices based on social reasons. For example, a builder may choose to run his own business because 'he wants to work for himself'. Farmers are sometimes criticised by the claim—'farming is not conducted as a business'. In fact, farming is a serious and professional business where the business owners, like many others, are motivated strongly by social drivers.

30.2 Changing Mixed Farming Systems

The arrangement of sub-systems on a mixed farm is constantly changing and being redesigned by the farm manager. Social factors strongly influence this also. It is often the view that farmers will change their system when the financial incentive is sufficient and that they will respond to market signals. But a change in commodity price does not necessarily lead to increased production of that commodity; there are many other factors at work. Because mixed farming systems are complex, changing them is also complex, as the farmer has to 'rejuggle' many interacting components. Adopting a suggested new practice therefore is not simply about the merits of that practice; it is about how it would fit into the farmer's whole system.

There is a long history of investigating how to encourage farmers to adopt what are perceived to be desirable new practices and technologies. Motivated initially by a desire to increase farm production, and more recently by a desire to improve agriculture's environmental sustainability, much of the literature on the topic has focused on identifying 'barriers' to the adoption of these 'desirable' behaviours.[4] Work by Pannell et al. (2006) and others has identified key influences on whether a farmer is likely to adopt an innovation such as a new enterprise. These factors can be summarised as: landholder goals; landholder circumstances; landholder perception of the messenger; the transaction cost of change; and the practices already available to the landholder (Fig. 30.2).

All of these factors are taken into account when mixed farmers consider whether and how to change their system. If, for example, the *goal* of a mixed farmer is to

[4] It is important to realise that, as Vanclay (2004) argues, 'barriers to adoption' is an implicitly arrogant idea that denies the fact that from an individual's perspective, all of their decisions are made for legitimate reasons, even if those reasons are poorly understood by others.

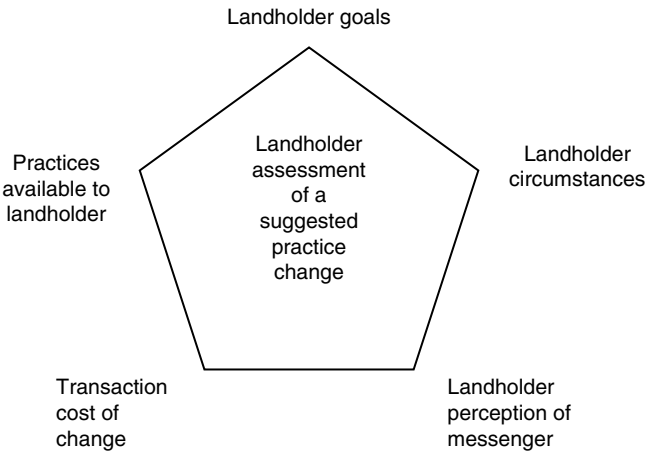

Fig. 30.2 An overview of five central factors landholders take into account when assessing any new practice or technology

maintain a well-balanced mixed system, the technical or financial merits of a change within a single enterprise may be tempered by the effects of that change on the overall balance of the system. The *circumstances* of mixed farmers are such that they have multiple enterprises to take into account and, as a result, they have many *practices already available for adoption*—both in theory and on the ground. A change in one enterprise may affect other enterprises, either directly or indirectly, such as through its effect on the farmer's time or resources. *Transaction costs* can therefore be significant. Finally, like all farmers, a mixed farmer's *perception of the 'messenger'* of a desired change (such as an extension officer or agribusiness representative) influences the farmer's level of interest in the proposed change. How trustworthy the messenger is perceived to be (which is often a factor of how long the farmer has worked with the person) is particularly important.

The Grain and Graze research attests to the centrality of the above five influences (Fig. 30.2) on farmers' willingness and ability to change. It also found that most farmers are uncertain about the best way to analyse information to make a decision about a potential change in land use. Many farmers use 'tools' to help them, but the variable way in which they use them points to the underlying complexity involved in their decisions. In determining their enterprise mix, for example, which is the area in which a large proportion of their on-farm changes are made, mixed farmers mentioned that gross margins, bench-marking, the accountant's figures, 'what the consultant says', and 'rules of thumb' are among the main things they consider.

Calculating gross margins has been one of the changes that some extension efforts have encouraged farmers to adopt in an effort to make them more 'rational' in their decision making. Some farmers indicated they are sceptical of the value of this tool. Others indicated that, even if they do not actually calculate their gross margins,

they thought it would be a useful exercise or they used some approximation of it. When pressed in the interview to say exactly how they analysed information to make decisions, the typical responses included:

> Can't tell you exact figures but we know what is profitable.
> If we didn't have sheep over the last four years, we would have struggled—we do figures in our head, per hectare.
> We are confident it is the best land use. We need models to compare cattle options.
> We haven't seen anything to prove cropping is better. We are interested in the bottom line. It's what we want to do.
> We are often not comfortable about the numbers.
> Got to keep the balance—numbers don't matter so much.
> The last thing you do is the books.
> We are not confident—which makes me worried.
> Economics are important but we stopped chasing production and are trying to develop a long term ecological state.
> What we want to do influences how we do the figures.

This range of responses was consistent throughout most interviews. The attitudes in these quotes could be summarised as:

- The tools to make decisions are either not well understood or are not adequate to make complex mixed farming decisions.
- Because the decisions are complex and have many unknown variables and risks, a detailed assessment of the costs and returns is considered of little value.

Rather, as mentioned above, it is social factors that predominantly determine decisions about land use. The Grain and Graze research suggests that the overall mixed system designed by farmers is driven by four main factors:

- hassle reduction—the desire to keep a system simple and avoid complexity
- labour—the desire to use labour more efficiently and the ability to find it when required
- recreation—the desire to find time for recreation
- personal preference—the desire for a system that (predominantly) includes the enterprises a farmer enjoys.

We will now look at each of these in turn.

30.2.1 Hassle Reduction (Simplicity)

Like the general public, many farmers are looking for ways to make life simpler and easier. Simple farming systems are generally preferred because less can go wrong, they lower costs and they are easier to manage with less skilled labour. People will often avoid a new technology because it adds to the complexity of the system; this becomes more important as farms become larger and are run by a smaller labour force.

30.2.2 Labour

Many farmers are now designing their systems around the available labour force,—which increasingly is just the farm family. While farms commonly employed labour in the past, it is difficult to finding reliable labour with the required skills among declining rural populations. Further, the growing bureaucratic complexity of employing a worker (through requirements in tax, occupational health and safety, training and professional development) has meant that most farming families have opted, instead, to either work harder or reduce the workload on the farm. This decision then further reduces the employment available in the region and accelerates the process of rural depopulation.

Given the desire or goal of simplicity, much technology adoption is driven specifically by the desire to reduce the need for labour. For example, the adoption of laser grading of land for flood irrigation in Australia was encouraged by extension officers to reduce soil salinity. But its rapid and widespread adoption often occurred because it allowed a farmer to manage more irrigation water and therefore run a larger farm, without employing extra staff.

It should be noted that a few interviewees actually reported a preference for labour-intensive enterprises because it allowed them to keep on a full time employee. As one interviewee said: 'If we didn't have the sheep, we would have to let him go and then we wouldn't have someone to do all the jobs'.

30.2.3 Recreation

Associated with the workload or labour requirements of a farm is the degree of freedom the farm offers farming families to participate in other things, such as off-farm employment or recreation. The ability to have a family holiday emerged in the Grain and Graze research as a real concern for some families. A perceived limitation of mixed crop–livestock farming systems is that they require not only a higher workload, but also a more constant workload throughout the year. Keeping sheep on a mixed farm, for example, means stock need to be checked throughout summer, especially during drought conditions. This often means the family cannot leave the farm during the school holidays. Many families reported having great difficulty finding a time for their family to have a holiday. Such a lack of time off can increase the stress the family experiences, as discussed further below.

30.2.4 Personal Preference for an Enterprise

A preference for particular enterprises also strongly influences overall system design. Farmers interviewed often had a strong preference for or were against an enterprise because of factors involving labour, or for more intrinsic or personal reasons.

Two-thirds of farmers, for example, expressed a strong aversion to running sheep. While for some this is because of the level of work required—'Running sheep wouldn't allow us to have our holiday'—for others it was because of a lack of familiarity or confidence with sheep or a simple dislike of the animal. As one farmer stated simply: 'I hate the sheep'.

Others expressed a strong positive preference for working with sheep. As one interviewee explained, he found working the sheep the most enjoyable work on the farm because it meant he got to work with his sheep dogs. Others value sheep because of their role in the system, above and beyond their functional contribution. As one interviewee said: 'A farm without sheep is a dead farm. You've got to have some life out there'.

Positive preference was also expressed for other enterprises. Many farmers, especially younger ones, have a strong preference for growing crops because of their interest in agronomy, reduced tillage technology or machinery in general. Others are drawn to the visual satisfaction crops can provide. Looking out over a freshly sown field or tall green crop, farmers can see the 'fruits' of their hard work. The intrinsic motivation such an experience provides should not be underrated.

30.3 The Role of Drought

30.3.1 The Difficulty of Decision Making

The CBP research suggests that the current drought in Australia is increasing farmers' desire to improve their systems in order to reduce their vulnerability to drought effects. Drought adds a large degree of uncertainty and introduces an increasing number of issues for farming families to deal with. Problems in one area (e.g. mental health and family cohesion) flow through to other areas (e.g. ability to cope with work load and financial decisions), flowing back in positive feedback loops (Fig. 30.3). Farming families' physical, financial and social/personal reserves are

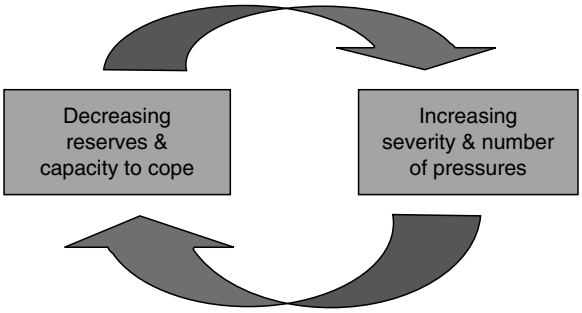

Fig. 30.3 An illustration of the positive feedback that drought sets in place between a family's reserves and capacity to cope, and the severity and number of pressures they face

intimately interlinked, and drought eats away at all of these. This means drought can dramatically increase the complexity of decisions facing farmers at a time when their desire to reduce hassle (stress) is maximal. The CBP research suggests that despite farming families' desire to improve their situation and reduce their vulnerability to drought effects, the complexity that drought introduces, combined with their reduced ability to cope with complexity while under stress, mean that drought also stalls their decision making. There are too many factors involved and too many are unknown. Thus, although farming families want to act to improve their circumstances, many feel unable to do so.

The CBP research suggests that farming families are asking more difficult and profound questions about their actions and their future than many have ever asked before. As they question their goals and try to understand their circumstances, the 'practices available' to them (Fig. 30.3) come into question. In particular, the question of 'whether to stay or go' is one that some are facing for the first time. Often this decision is constrained not only by a stalling on all decisions, but by a perceived lack of alternatives.

Those who are deciding to stay on the farm despite drought are asking serious questions about how to do so. General approaches to farming—philosophies of management and 'rules of the game'—are being reassessed. There seems to be a move to a more low-input approach, forced by economic necessity but sparking interest in its other benefits. For risk management reasons there is a move among some farmers to more 'mixed' systems as families seek to reduce their vulnerability to drought effects by spreading their efforts over more enterprise types. Thus, just as drought is seriously challenging rainfed agriculture, it is also perhaps increasing the popularity of mixed farming. Understanding such systems and how best to help those involved in them is therefore more important than ever.

30.3.2 Choosing an Appropriate Enterprise Mix

Choosing an appropriate enterprise mix is a key to coping with drought. As discussed above, what is 'appropriate' for any particular farming family depends on a range of factors, many of which are social as much as financial. For example, many in farming families are looking to devote more time to off-farm employment, either because of immediate financial necessity or a desire to diversify their income away from farm income.

Drought also accentuates farming families' need to get away from the farm, either for temporary recreation or a holiday. Yet, due to the work required on the farm or the cost of fuel and other costs of socialising or holidaying, many farming families feel financially unable to leave the farm. This can reduce their social and financial involvement in their local community, which is, in turn, also affected.

The desire to have time for something other than farming—work or rest—has implications for the kind of enterprises farmers choose to run. For this reason, and the desire to save on employee costs, the labour requirements of different enterprises

are more pertinent than ever and are part of the mix as farmers try to weigh up the pros and cons of different enterprise types and combinations.

Drought accentuates the greater labour demanded by livestock by often requiring that water and feed are carted. The need for livestock feed illustrates how the links between crops and livestock can be accentuated during drought, as either grain or crops-cut-as-hay are used for feed. Other stresses of keeping livestock include animal welfare issues, which can engender an extra sense of responsibility to livestock, relative to crops—'like having 10,000 hungry children' as one farmer in the CBP research put it. Watching hungry animals become increasingly distressed during drought can take a serious toll on farmers, as can watching crops dying. One of the reasons why farmers and their families should have some recreation time during drought is to get away from such scenes, especially given that they live as well as work with them.

In contrast to the difficulties livestock create in a drought, they have two important benefits. One is a degree of financial security relative to crops. A mob or herd represents a source of equity that can be sold at a later date or used to start off a post-drought recovery. The work involved in looking after animals during drought can also be an advantage. While over-work can be an issue of concern, the need to look after livestock during drought does avoid the negative consequences of underwork that 'pure croppers' can experience during drought, when there are no crops to manage. Given that work plays an essential role in meeting our psychological as well as physiological needs—giving us a social role and social interaction—the loss of work can be a serious cause of stress. Thus the continuity of livestock during drought can be important in maintaining a sense of normality and purpose for farmers.

30.3.3 Decision-Making Assistance

Financial management and decision-making emerged in the CBP research as two areas farming families are focused on and would like to be helped in. While there is a desire for technical production assistance concerned with 'drought-proofing' farms, it is the higher level family, financial and business decisions that seem to be weighing on people's minds. Part of the reason for this is a felt lack of skill in this area. Many older farmers, for example, are less skilled in financial and business management than technical production because of the past emphasis in formal agricultural education and extension on science and production issues. The complexity of the financial environment has also increased rapidly over time. Profitability is now seen as more important than production *per se* and there is a desire to become more confident in making the business decisions needed to improve the profitability of the farm business—or family income—as an entirety. Training is therefore needed in this area.

In the shorter term, many farming families expressed their desire for assistance with the immediate decisions they are facing about their future. Such assistance needs to be offered with a deep understanding of the complex array of factors that farming families are likely to take into account. Given the impossibility of understanding all

the intangible factors they will be considering, such assistance also needs to be offered with an appreciation that the ultimate decision rests with the individuals involved and, as Vanclay (2004) emphasises, even if the decision is nonsensical to an outsider, it needs to be respected.

More than by introducing completely new issues, the main way the drought is affecting families and communities is by exacerbating existing issues, making them more complex than ever. These existing issues include the decline of Australia's rural communities as people move away because it is no longer economically, socially or emotionally viable for them to remain. Other non-farming businesses and families in rural towns are being forced to ask profound questions about their future as the impact of a declining agricultural population flows through to the towns. This loss of non-farming community and services in turn flows back to the farming families that rely on them (WDA 2007). Farming families indicated in the research that what others in their region do, including those in the towns, is a major factor in their decisions about whether to stay or go, as the options for off-farm employment, education and social interaction for family members, among other things, are affected. Often it is difficult for them to put these factors into words, much less quantify them or weigh them up against the predicted financial viability of their business. Yet such factors are no less influential in determining the future direction a farming family will take.

30.4 Implications for Extension

This chapter highlights both the importance and limitations of extension. Extension is important because many farming families want and need assistance with the increasingly complex decisions they are facing. It is limited because outsiders can help their complex decision-making only so far.

There are three main ways in which advisors/extension officers can help farming families with their complex decision making:

1. providing information and advice about particular complicated 'bits' of the complex decisions
2. providing a listening ear or small group forum in which farming families can learn from each other and about themselves through 'telling their story' and talking through their decisions
3. providing strategies, tools and models to help farming families streamline or simplify their farming systems and decisions.

We will now look briefly at each of these in turn.

30.4.1 Providing Information and Advice

There are many types of information farming families need to accumulate to make informed decisions. Yet conditions are changing so rapidly for farming families that

it is difficult for them to know the questions to ask, much less the answers to act on. There is also an increasing amount of information available. Sorting through this 'information glut' to find the most credible and pertinent pieces of information is one of the most important services extension officers can provide. The Grain and Graze and Birchip Cropping Group social research suggests that the following issues are currently areas of particular interest for many farming families.

30.4.1.1 Financial and Business Management

Traditionally, financial and business management skills have been neglected in agricultural extension and formal education relative to science-based technical skills. But, with the financial and business environment in which farm enterprises are operating becoming more complex and arguably more difficult, this is a key area for skill development for many farmers. The CBP research in particular highlights that, with the current drought reducing the amount of time many farming families are currently spending on production decisions (due to crop failure or selling of livestock, for example), and with it also creating painful financial and business problems, many families have turned their focus towards financial and business management.

30.4.1.2 Best Management Practices in the Field and Beyond

One of the consequences of the extended drought is that the practical 'rules of thumb' farmers have used are now in question. There is therefore a strong need to advise farmers on how best to operate in the current changed conditions. Farmers are told to work on 'drought-proofing' their farms yet there is little up-to-date information on how to go about this. What enterprise mix is best in their area during a drought, or in anticipation of longer term climate change? Much research is needed into technical production issues such as crop choice in the context of drought and climate change. Locally-specific climate projections are also needed to help farmers plan for the future.

'Best management practice' is also needed, including calls for managing risk through diversified investments. The drought has highlighted that assistance with managing superannuation and succession issues would be helpful for many.

30.4.1.3 Sector and Regional Information

Climate projections are one sort of information that helps farming families understand the context in which they are living and working. The CBP research found that many farming families are hungry for information about the changes going on around them in both the agricultural sector and more broadly. How is their region or local community changing? What are the trends? What is the likelihood of key services remaining local? What is happening to agribusiness, employment opportunities

and schools in the area? This kind of information will help them understand the environment in which they are living and working and so to plan for the future.

Helping farming families with particular 'bits' of information for making their complex decisions is far more effective when it is done with a sharp awareness of the larger picture that the 'bits' fit into. This does not mean that advisors need to understand all aspects of farming families' work and life situations, but it does mean that they need to understand that these aspects exist and that the information and advice they provide will be integrated with factors that the advisor is not privy too. Advisors should not be prescriptive or patronising in offering their information or advice.

30.4.2 Providing a Forum for Story Telling

While providing information and advice is useful, putting it all together and deciding how to act on it that is hardest. An advisor can assist farming families in this process by encouraging them to work out what is important and best for them through telling their 'story', to themselves and/or to others. Telling one's story involves reflecting on and implicitly communicating where you have come from, the choices you have made, why you made those choices and what the implications have been. It involves bringing together such aspects of life as your patterns, assumptions, limitations, motivations, goals and the personal preferences discussed above. This process can be enormously helpful in establishing the 'boundaries' in which one can reasonably make future decisions. By setting the bounds on one's decision making in this way, the process is significantly simplified and the appropriate options can become clearer.

Often it is easier to see the above aspects of story telling when one is listening to others tell their stories. Creating a safe, confidential environment in which people can listen to and help each other reflect can be an enormously valuable role that an extension officer can fulfil. Small discussion groups can also share financial and other data to help clarify the circumstances each person is in. This 'benchmarking' also helps to satisfy people's hunger for information about what is going on around them and how they are progressing relative to others; such information can quickly shine a light on people's relative strengths and weaknesses.

Communicating in this open way can be a serious challenge for many people. Skills training and role modelling of the kind of honesty and empathy that is needed is another area for extension to provide, both for many extension officers as well as for farming families.

30.4.3 Providing Strategies and Tools for Streamlining Complex Systems

As suggested in the discussion above about reducing hassle (Sect. 30.2.1), another way to help set 'bounds' on complex decisions is to help streamline complex farming

or business systems. There is a range of financial and production tools that can help to highlight the pertinent information about a business. This allows farming families to better understand their current situation and options for the future. For example, at RMCG (RM Consulting Group), we have designed a simple spreadsheet which helps farmers to see on one page what their figures suggest about three central questions:

- Am I profitable enough?
- Can we afford to expand/contract?
- Can we afford to retire?

The Grain and Graze research confirms what years of consulting experience have found, that these three questions encapsulate much of the complex decision-making that many farming families face. By even posing these three questions, advisors can assist farming families to focus in on what they need to decide.

Specific ways in which farming families can work to streamline their farming systems include reducing their requirement for labour, including their own labour, and reducing enterprises that they dislike.

Overall, extension has a critical role in helping farming families make decisions, particularly the complex decisions that many are facing about their future plans in a changing environment. Yet, it is also vital to understand and respect the limitations of any advisory role with farming families. In the end, the farming family must decide for themselves what they want to do even though this decision may not be readily understandable from an outside perspective. Hopefully, the support and assistance that has been provided to them along the way means that the decisions they make are not just complex, but confident and constructive.

30.5 Conclusions

To improve the social, environmental and financial sustainability of rainfed farming systems, we need to understand better the decisions that farming families are making about them. This chapter has presented some concepts and empirical data drawn from extensive social research into the decision making of mixed farming families in southern Australia. It highlights the importance of understanding the social character of, and social influences on, decision-making. These may be in terms of the multiple influences involved in a farmer's decision to adopt an innovation, or in terms of large questions many are asking about their future role in the agricultural sector and the rural communities they live in. In particular, this research highlights the importance of understanding the inherent complexity of many decisions in the farming environment.

Mixed farming is an important component system of Australian agriculture that is being both encouraged and tested by the severe drought conditions many areas of the country are experiencing. On the one hand, the risk management approach that multiple enterprises inherently involve is proving even more necessary than ever.

On the other hand, the complexity and challenges of mixed farming are also being heightened by drought. Many farming families are seriously asking whether it is desirable or even possible to stay in their business. It is important to assist them with this decision to stay or to go. If assistance such as training in decision-making skills or advice about specific issues is offered with a sophisticated and empathetic understanding of the types of factors and decisions farming families make, it promises to help provide mixed farming with a more sustainable basis.

References

Alvesson M, Skoldberg K (2000) Reflexive methodology: new vistas for qualitative research. Sage, London

Birchip Cropping Group (2007) Critical breaking point? The effects of drought and other pressures on farming families. A report prepared by L. Rickards of RMCG for the Birchip Cropping Group, Birchip. http://www.bcg.org.au

Bryman A (2004) Social research methods, 2nd edn. Oxford University Press, Oxford

Davidson BR (1981) European farming in Australia – an economic history of Australian farming. Elsevier, Amsterdam

Glaser B (ed) (1993) Examples of grounded theory. Sociology Press, Mill Valley

Glaser B, Strauss A (1967) The discovery of grounded theory: strategies for qualitative research. Aldine, Chicago

McGuckian N (2006) Social dimensions of managing mixed farming systems, grain & graze discussion papers Nov 06. http://www.grainandgraze.com.au/library/scripts/objectifyMedia.aspx?file=pdf/82/74.pdf&siteID=11&str_title=Grain & Graze Discussion Papers Nov 06.pdf

Pannell DJ, Marshall GR, Barr N, Curtis A, Vanclay F, Wilkinson R (2006) Understanding and promoting adoption of conservation practices by rural landholders. Australian Journal of Experimental Agriculture 46:1407–1424

Snowden DJ (2003) Managing for serendipity or why we should lay off "best practice" in KM. ARM Knowl Manage 6:8

Vanclay F (2004) Social principles for agricultural extension to assist in the promotion of natural resource management. Australian Journal of Experimental Agriculture 44:213–222

Wimmera Development Association (2007) State of the Wimmera Southern Mallee Region Report. A report prepared by RMCG for the Wimmera Development Association and the Rural Development Victoria section of the Victorian State Government, Melbourne