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What is Farm Business Management?

This chapter discusses the basic skills in Farm Business Management such as developing a set of key tasks and making the best use of service providers.

The main points in this chapter

- To be successful, today's farmers must be able to manage their resources to meet the challenges of varying costs, prices and climatic conditions.
- FBM provides a structured approach to decision making.
- Decision making is based on judgements which are influenced by farmers' beliefs as well as their economic, social and cultural values.
- Dairy farming essentially involves developing a set of key tasks for which there are key performance indicators to quantify their success or otherwise.
- Farmers have access to a diversity of expertise, much of which is free of charge, that they can use to improve farming practices and hence profit margins.
- Production technology can be broken down to nine key steps in the supply chain of profitable dairy farming. Just as a chain is only as strong as its weakest link, each step in the supply chain must be properly managed.
- Managing a farm business is essentially a hierarchy of decision-making processes, made more complex if dairying is one of several farming enterprises.

Farm management is about managing farms. Farmers manage farms whereas many other people are interested in how well they are managed. Such is the range of the target audience for this book.

A complete, somewhat clumsy definition of farm management is: 'The process by which resources and situations are manipulated by the farm family in trying, with less than full information, to achieve its goals.' Makeham and Malcolm (1986) consider two major tasks facing today's farmers in pursuing their goals:

- How best to incorporate new technology into the farming enterprise.
- How to be sufficiently flexible, mentally and financially, to adjust their management of their resources to meet the challenges of varying costs, prices and climatic conditions.

To achieve this second task, farmers must then become business managers. In other words, they must successfully manage the business of their farming enterprises. So Farm Business Management (FBM) is just one of a number of disciplines, each of which have important effects on the success (or otherwise) of their farming operations. The other key disciplines are covered in the practical sciences such as cropping, livestock production, farm engineering and resource management.

The skills of FBM are very diverse and many can not be learnt from a book such as this, but only from being a farmer. We call this experiential learning, or learning from experience, because only through making such decisions and living with the consequences do many farmers learn the difference between right and wrong choices, between good and poor decisions, and of most importance, the differences between profitable, less profitable and unprofitable farming practices.

Any form of management requires decision making. This process has six generally recognised steps:

- Having ideas and recognising problems
- Making observations
- Analysing observations and testing alternative solutions to the problem
- Choosing the best course of action
- Acting on this decision
- Taking responsibility for the decision.

Ferris and Malcolm (1999) expressed this concept in a slightly different way when they considered that managing a farm business is a continual process of planning to do something and then changing intentions as time passes and new circumstances, different to those which were previously anticipated, dictate that different actions be taken. Managing a farm business is about manipulating resources in situations where much is unknown, to try to achieve and establish situations in a future which is knowable. It is about deciding how the resources under control are best used to achieve objectives sometime in the future, when the only certainty is that ‘the future will be a different world, where they do things differently’.

Fundamental to good farm management analyses and decision making is identifying the real nature of the problems correctly, bringing to bear on them the technical, human, economic and financial conceptual and analytical skills. The greatest difficulty arises from the nature of the information that has to be used as most of it cannot be known with certainty. The vital information about production responses to inputs and future events has to do with seasons and markets. The ‘numbers’ which have to be used are matters of judgements about the key aspects of farm activities and about the whole farm business.

Economic analyses do not have to be complicated, as the technical foundations of the analyses just need to be sensible while the logic needs to be sound. The logic is ‘What is the situation, what is likely to be the new situation if I do this or that or nothing different at all, and am I likely to be sufficiently better off, all things considered, for it to be worthwhile doing this instead of that or nothing different at all?’

Farm business analysis is then the process of retrieving, organising, processing and analysing information used in business decision making. Put even more simply, three

questions have to be asked, namely, ‘Where are we? Where do we want to be?’ and ‘How do we get there?’

2.1 Decision making is based on value judgements

Farmers are resource managers who manipulate labour, land, capital and other resources to achieve their goals in life. As well as returning a profit from their farming ventures, such goals are very diverse. Providing materially for the farm family is a key goal for Western farmers, as is educating their children and reaching a personal living standard which is on par with that of peers in their community. Increasing the value of their assets may be important to some farmers, that is wealth creation. Many farmers do not own their own land, so their major resources are money, livestock, farm equipment and their own home.

FBM is an economic science essentially developed by Western farm management specialists specifically for farmers living in developed countries. The question then arises about its applicability to farmers living in developing countries who may have different outlooks on life, hence another set of value judgements about why they farm. In other words, can we assume that what motivates a dairy farmer in say Australia, to want to modify his farming practices is the same as for a dairy farmer in say, Vietnam or in Pakistan? Obviously there are many basic differences in the beliefs and values of these different societies, but are these likely to influence the motivation to change farming practices? Maybe yes, if such beliefs and values reflect one’s judgement on what is important in life.

2.1.1. Maslow’s hierarchy of needs

One way of addressing this question is to use a psychological approach called Maslow’s hierarchy of needs (Wikipedia 2008). Each one of us is motivated by needs, with our basic needs inborn, having evolved over thousands of years. Maslow argues that we must satisfy each need in turn, starting with the first, which deals with the most obvious needs for survival itself. Only when the lower order needs of physical and emotional wellbeing are satisfied are we concerned with the higher needs of influence and personal development. Conversely, if the things that satisfy our lower needs are withdrawn, we are no longer concerned about the maintenance of our higher order needs. Under stressful conditions, we regress to a lower needs level. As needs emerge only when higher priority needs have been satisfied, satisfied needs no longer influence behaviour, hence motivation to want to change.

Maslow originally prioritised needs into five levels, but they have since been increased to eight levels. The levels, the basic needs (in italics) and some relevant motivating factors for smallholder Asian dairy farmers to improve their farming practices are:

1. Biological and physiological needs: *air, drink, food, shelter, warmth, removal of body wastes, avoiding pain, sex, sleep*. All farming families require these ‘basics of life’.

2. Safety needs: *protection from elements, overcoming fears and anxieties, security, order, law limits, stability*. Environmental and civic protection are essential for family wellbeing.
3. Sense of belonging and love needs: *work group, family, overcoming loneliness, affection, relationships*. Many farmers like to mix with other farmers to share ideas.
4. Esteem needs: *self-esteem, self-respect, achievement, reputation, independence, status, dominance, prestige, managerial responsibility*. Status within a group is important to some farmers.
5. Cognitive needs: *knowledge, meaning, self-awareness*. The desire to know more about their farming system is important to most farmers.
6. Aesthetic needs: *appreciation and search for beauty, balance, form*. Many farmers place high credence on a neat looking farm.
7. Self-actualisation needs: *realising personal potential, self-fulfilment, seeking personal growth, peak experiences*. Most farmers have business goals to work towards.
8. Transcendence needs: *helping others to achieve self-actualisation*. Many people, including farmers, desire to help others achieve their personal goals.

Hunger and poverty can be a common feature of resource-poor farmers, so for them satisfying Need 1 is paramount. Obviously without fulfilling Needs 1 and 2, motivation to improve their farming business is a low personal and family priority. Once these two are fulfilled, satisfying Needs 3–8 would be similar for Australian, Vietnamese and Pakistani dairy farmers. However, there may be more potential stress factors (actual rather than perceived) with resource-poor farmers. The tendencies of self-actualising people are towards awareness, honesty, freedom and trust, which are not always possible to demonstrate in resource-poor situations.

The important conclusion from this discussion is that, as hunger, poverty and civil unrest would be more of an issue in developing than in developed countries, the motivation to set realistic goals to improve farm performances may also differ.

This conclusion has relevance with government and other support organisations as well as individual farmers themselves. Economic, social and cultural values can influence decision making in group as well as individual situations. This can be demonstrated using examples from developed and developing dairy industries as follows:

- Economic values: differences in the cost of labour relative to other farm costs influence the investment made by farmers on labour-saving devices, such as farm machinery and milking machines. The number of cows managed per labour unit is an important key performance indicator (KPI) in many developed countries but is not as high a priority in Asia.
- Social values: to westerners, Asian farmers appear overserved by government agencies, for example with the number of staff employed at Milk Collection Centres in Malaysia. The provision of employment opportunities is an important role for government agencies in Asia.
- Cultural (and religious) values: sometimes it is not easy to economically rationalise farm decisions that are overlain by religious beliefs, such as slaughter of cull cows in Hindu societies, a religious conviction that also influences income realisation in some Buddhist societies.

As well as understanding the types of value judgements farmers need to make to modify their behaviour (that is to undergo practice change) it is important to assess how close they are to making that decision to change. In other words, what makes farmers decide that they need to change?

2.1.2. Bennett's hierarchy for developing objectives

An American extension specialist developed a seven stage process to describe the hierarchy of decision making, or as he called it, for developing objectives (Bennett 1979). The lowest level are the inputs, or the allocation of resources given to the program, while the highest level, the end result, deals with the impact of the extension program on the farmers' long-term goals. These and the steps in between are as follows:

1. Inputs: Resources to support the program; what sort of personnel, their time input and cost?
2. Activities: Specific extension activities, such as field days, meetings, newspaper articles, workshops or on-farm demonstration sites; how many and of what type?
3. Involvement: Involvement of the stakeholders; who were they, how many and what sort of contact?
4. Reactions: Degree of interest, credibility, perceptions; how were they recorded?
5. KASA: Knowledge (what do they now know?), Attitudes (how do they feel now?), Skills (what can they now do?), Aspirations (What do they want?); how were these modified by the extension activities?
6. Practice change: adoption and application of KASA; what was the adoption of new technology or their change in behaviour?
7. End results: social, economic, environmental and individual consequences of the program; how much did these change?

This process logically follows through a chain of events assumed to characterise most extension programs. It is much easier to quantify the lower order steps, but it is the more difficult higher order evaluations that are the most useful in assessing the program's effectiveness. This is where the impact of the program may vary with the types of value judgements influenced by Manslow's hierarchy of needs.

2.2 A set of key tasks for dairy farm managers

So what encompasses good farm business management for smallholder and large holder dairy farmers in the tropics? How can this book possibly cover the theory of such good farming practices? Jack Makeham's and Bill Malcolm's excellent and easy to read 1986 book, *The economics of tropical farm management*, summarises the essence of successful smallholder farming in the tropics. Of the eight key areas of knowledge they listed, five utilise skills in business management.

They list these key areas, with the three non-business management areas in italics, as follows:

- *Crop production and protection*
- *Animal production*

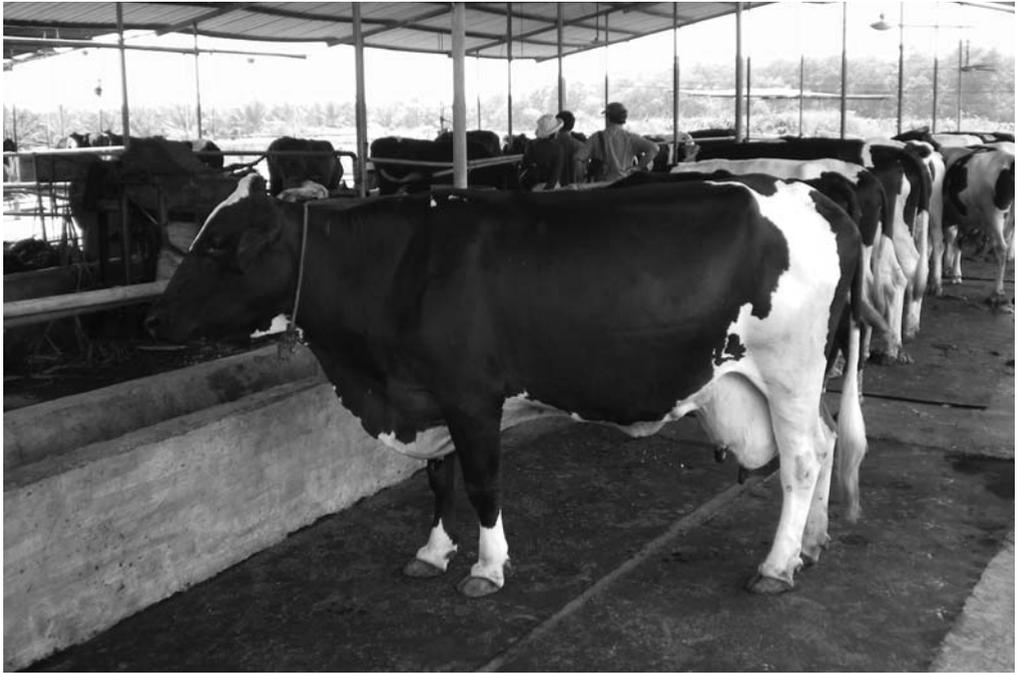


Figure 2.1 A well-bred and fed milking cow, Malaysia

- *Machinery selection and maintenance*
- Economic aspects of farm management
- Credit and finance
- Marketing
- Managing labour and communications
- Information gathering.

From lists such as this, a set of key task areas for good dairy managers can be selected, and within each task area progress can be quantified through developing a series of key performance indicators (KPI). This has been undertaken in Chapter 14. The following example lists of key tasks are for three major management areas on any tropical dairy farm:

2.2.1 Production technology

- Prepare land then plant, fertilise, weed, water (in some situations) and protect the crop; likely to be a forage crop.
- Harvest, store and market the crop (through livestock rather than in the marketplace) to get the best return with minimum waste.
- Feed animals properly, prevent disease outbreaks and recognise disease symptoms.
- Achieve high reproductive and survival rates.
- Obtain or produce nutritionally correct feed at the optimum (generally lowest) cost.

- Provide the right housing for effective production, protection, hygiene and harvesting of the animal product.
- Where machinery is involved, be able to choose the most appropriate types for the job, ensure they are properly maintained and serviced, and when necessary, find a good mechanic.

2.2.2 People skills

- Have harmonious relationships with farm workers by giving them a reasonable amount of responsibility.
- Be interested in the welfare of people working with the farmer.
- Know how to establish a clear chain of command so each person knows to whom they are responsible and so does not have several bosses telling them what to do.
- Set up a system of supervision to ensure the work done is of a proper standard.
- Create a system of communication and involvement, so that all know what progress is being made in achieving the goals and objectives of the farm operation.

2.2.3 Business management

- Use specialist advisers to help analyse the important physical and financial aspects of the farm business.
- Through appropriate records, and other relevant information, be able to work with an adviser to produce annual farm plans, together with budgets, aimed at producing as much food and money as they need or are able to.
- Prepare plans of action in case of abnormal seasons and/or price.
- Plan well in advance so that all inputs are available when required, and in correct quantities.
- Prepare physical and financial reports at regular intervals, which are timely, accurate, relevant, brief and clear for the persons who control the farm.
- Determine the most favourable forms of credit which can be obtained for different activities.
- Develop good honest working relationships with bankers, financiers or other credit managers.
- Be able to prepare realistic applications and finance budgets to obtain credit.
- Have the ability to know when borrowings are too great to be repaid from farm income.
- Assess the different ways of preparing and selling the farm products.
- Work out the best way(s) of marketing (assembling, preparing, transporting, selling) to return the greatest long-term benefit.
- Be able to obtain relevant information about any problem quickly. Information sources could be other successful farmers, extension agents, private agribusiness companies, research workers, libraries, teachers and friends.
- Develop effective thinking and reasoning skills which should be combined with common sense and even mini 'trial and error' experiments.

2.3 Making the best use of service providers

A good farm business manager should know exactly what he (and his employed and family labour) has to do on his farm to generate profit, how to find out from others what can be done to improve his profit margins and when to seek outside expertise (labour as well as ideas). Smallholder farmers generally depend on themselves and their family for labour, however there are numerous sources of 'good ideas' available, many of which are free. Such personnel are called service providers and they include suppliers of services, equipment as well as good ideas. All the service providers in the following list may not be readily available in every smallholder dairy farming community but if there is sufficient demand, they can be found, particularly for farmers belonging to a dairy cooperative. In many regions there are dairy equipment suppliers (resellers) or private consultants that can advise on various aspects of farm management. Service providers have a diversity of roles that will help to improve the technical capabilities and the decision-making skills of dairy farmers both small and large scale. These include:

- **Sampling and analysing soils for essential plant nutrients.** This is a routine service utilised by many Western dairy farmers to plan fertiliser programs for their forage crops. It is frequently undertaken by the fertiliser agent in Asia who mainly deals with farmers growing plantation or other cash crops.
- **Selection of most suitable forage crops for the soil type and local climate.** Agronomists working for dairy cooperatives or suppliers of crop seeds can also advise on the optimum agronomic practices such as irrigation scheduling (if available), spreading shed effluent, weed and pest control or harvesting interval for improved grasses and legumes.
- **Purchasing concentrate feeds.** Cooperatives often have the buying power to bulk purchase feeds more cheaply than individual farmers. In some cases they may be the only source of feeds, such as imported calf milk replacers or vitamin/mineral premixes. Cooperatives usually include formulated rations as part of their service to farmer members. It is important for farmers to compare the cost (and milk returns) from formulated concentrates with those for a concentrate mix prepared on-farm, particularly if wet by-products (which have a short shelf life) can be sourced quite cheaply.
- **Purchasing forages.** Because of low labourer's wages in countries such as Indonesia, farmers often spend many hours each day walking around the paddy fields and along the roads to hand harvest forages for their stock. In certain areas, non-farming villagers do this to supply dairy farmers either via direct sale to each farmer or a 'grass market' where farmers can purchase their forage requirements in the marketplace. Forage markets have also been established for purchasing crop by-products, such as maize (or corn) stover, delivered by trucks from distant sweet-corn-growing areas. Following rice harvest, cheap rice straw frequently becomes readily available. It is important to assess its likely milk response and even undertake a cost: benefit analysis to compare it to other forage sources.
- **Nutritional management of the dairy herd.** This is an essential service to get the best out of the young and adult stock in the dairy (or the dairy beef) herd. Nutritionists

can advise on availability and cost of alternative feeds, both roughages and ingredients or home-made concentrate mixtures. They can also advise on the cheapest source of liquid nutrients for milk-fed calves, such as raw milk versus calf milk replacer. Cooperatives or commercial feed mills usually employ nutritionists, but free advice can also be sought from agents dealing with feed additives or other nutritional products. Because feed constitutes the highest cost on-farm (60–70% of total costs), it is important to get ‘a second opinion’ before radically changing the feeding program.

- **Testing feeds for nutrient contents.** There are university, government, or even private laboratories that can undertake this service, usually for a fee. It is essential that managers of dairy cooperatives or feed mills routinely test the range of feeds they use rather than simply depend on an average nutritive value, particularly for concentrations of feed energy and protein.
- **Animal health.** Dairy cooperative or government veterinarians are frequently the major (and only) source of advice on biosecurity and on veterinary drugs and procedures for smallholder farmers. Cooperatives may also employ foot trimmers to routinely treat housed stock, particularly those living on concrete floors. A lot depends on the skills and knowledge of such veterinarians and farmers to ensure the most appropriate action to take for sick stock, and farmers should occasionally seek ‘a second opinion’ from other animal health service providers (such as university staff or resellers of veterinary products). Good dairy managers need to develop a thorough animal health program to plan routine and emergency protocols for all their stock. These include vaccination, drenching and other routine veterinary practices as well as emergencies such as calf scours, heat stress, metabolic diseases or sudden deaths.
- **Best practices for breeding management and artificial insemination.** Dairy cooperatives or government livestock officers usually supply inseminators who should be expected to advise on all things regarding breeding, or at least be able to source the relevant information or equipment. In some areas, commercial suppliers of dairy semen are also available to advise of breeding programs.
- **Milking cow performance, such as herd recording.** These service providers are important to monitor long-term changes in cow milk yields and reproductive performance and other important measures of genetic improvement. Cooperatives frequently have computer programs to facilitate such recording and help plan realistic breeding programs, whether it be herds with 10, 20 or 50 milking cows.
- **Milking machines.** The performance of milking machines should be checked at least once each year, with routine testing of their efficiency by monitoring pulsation rates and vacuum pressure and also assessing the condition of liners and other rubber ware. Checks should be made of temperatures of milk storage equipment and of hot water to clean milk harvesting apparatus. Advice on chemicals for washing and sanitising machines, buckets, sieves and teat washing cloths should also be regularly updated. Suppliers of milking machines should have the necessary skills and measuring apparatus. Some milk processors also employ field officers to visit farmer suppliers and advise them on improving both milking hygiene and farm milk yield, to increase their supplies of quality milk.

- **Routine maintenance of farm machinery.** All machinery requires regular attention such as grease and oil changes for farm vehicles or replacement of worn parts. Such maintenance protocols should be provided by machinery agents.
- **Milk testing.** Most farm gate milk payments are based on measures additional to milk weight or volume, such as milk composition and milk quality. Milk composition measures the concentration of three important components of raw milk: milk fat, milk protein and milk solids-not-fat. Milk quality, on the other hand, measures the degree of bacterial contamination and the inclusion of adulterating agents. Unit price for milk can have a big influence on farm profitability (Moran 2005). Because of its economic importance, milk testing is a routine undertaken by dairy cooperatives and/or milk processors.
- **Milk transport to collection centres.** As dairy regions develop and grow in farmer population, farms can become more distant to milk collection centres. As with every bulk commodity, the situation arises when it is cheaper to pay someone to collect the raw milk from the farm and transport to the central location, rather than have to use farm transport and valuable time to take it, twice each day, to the cooperative or collecting centre.
- **Monitoring farm business management.** This service can be supplied by cooperative staff or government staff and by private accountants/advisers. Lending agencies may also assist but they generally require budgets detailing farm costs and predicted financial benefits arising from their investment in any farm development program. To improve the likely success of such a loan application, smallholders should seek professional advice.
- **Contractors for capital improvement programs.** Because of the high labour costs, dairy farmers in Western countries have access to a wide range of contractors with specialist skills and equipment for a diversity of tasks ranging from forage conservation, routine young stock practices, fencing, building sheds or other farm infrastructure, through to employment agencies to find the 'right person for the job'. Apart from builders to construct cowsheds, such contractors would be hard to find in Asia.
- **Cooperative service providers.** Some dairy cooperatives, for example those in Thailand, provide a range of services for their smallholder farmer members (Moran 2007). These include contract calf and heifer rearing, where the cooperative has a facility to milk rear the calves, using the waste milk from the milk testing laboratory, after which the heifers are group reared, mated, then returned to the farm just prior to their first calving. Some cooperatives also grow fodder crops on communal land, after which they harvest and ensile them either in tower or pit silos. The cooperative might also bulk purchase other wet material for ensiling, such as agro-industrial by-products. Some cooperatives even have feed centres where all the ingredients for total mixed rations are blended and placed in large containers, such as 500 kg old wool sacks. These are then delivered to each farmer every few days already formulated for direct feeding to his milking or dry cows. In other countries, such as Indonesia or China, the cooperative service also extends to machine milking, either using mini milkers if all the stock are housed in the one big shed or a separate milking parlour for larger herds housed at different nearby locations.



Figure 2.2 Smallholder dairy farm in West Java, Indonesia

- **Service provision as part of development projects.** Over the last two to three decades, many national and foreign governments, international aid agencies and private sector/non government organisations have initiated dairy development programs throughout tropical Asia. Such programs provide smallholder farmer support through the provision of technical services (usually at subsidised or nil cost), credit (for specific aspects of farm management or infrastructure) and training. This is still continuing (e.g. APHCA 2008) and will for many years. Astute dairy farm managers take advantage of such opportunities.

The major role of service providers is to allow the farmer to outsource as much of his farm input as possible, so long as it is viable in an economic sense. He can then concentrate his efforts on what he probably does best, namely convert feed (forages and concentrates) into milk.

2.4 The dairy farming business

2.4.1 Breaking down dairy production technology

Dairy farming is a business and as with any business, only by providing the production units (namely the milking cows) with the most appropriate inputs (that is, the correct housing, feeding and herd management), will the business be profitable. In other words, the business of dairy farming starts off with an understanding of the theory and practice of dairy production technology.

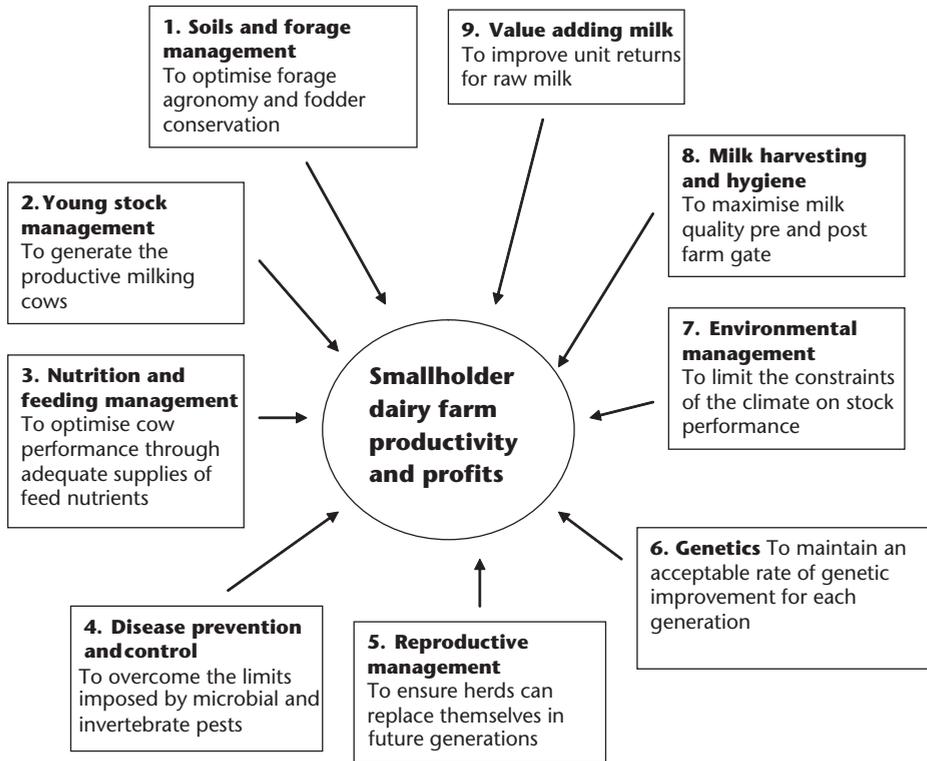


Figure 2.3 The nine steps in the supply chain of profitable dairy farming

On any dairy farm, no matter its size or location, this production technology can be broken down into nine key task areas, which can be considered as steps in the supply chain of profitable dairy farming. These steps are more specific than the key areas suggested by Makeham and Malcolm (1986) because they deal with all the technical complexities of successful dairy farming.

Just as any chain is only as strong as its weakest link, each step in this supply chain must be properly managed. Weakening any one link through poor decision making can have severe ramifications on overall farm performance and hence profits. In chronological order of their role in ensuring a profitable dairy enterprise, the 'links' are presented in Figure 2.3.

This book has combined these various links into three chapters on dairy production technology, presented as introductions to the more detailed chapters on farm business management. Chapter 4 discusses Link 1, Chapter 5 discusses Links 2, 3, 4, 5, 6 and 7 while Chapter 6 discusses Links 8 and 9.

2.4.2 Developing a hierarchy of business management

Throughout this book there will be many references to dairy FBM and in this introductory chapter, it is opportune to present a hierarchy of the farm business for the most relevant FBM decisions to be made. This is presented in Figure 2.4.

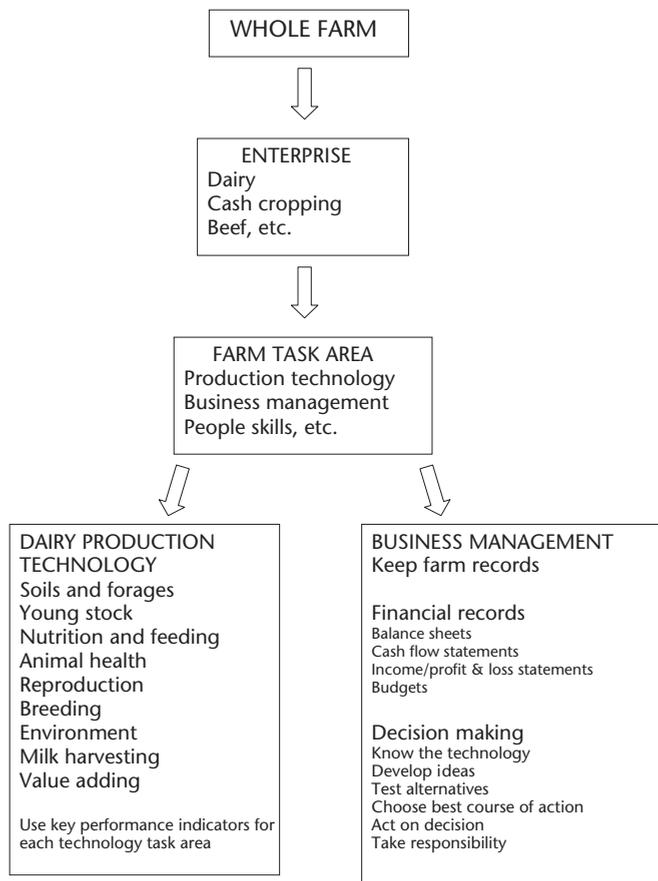


Figure 2.4 The business hierarchy of a dairy farm

Dairying can then be the sole enterprise or one of several enterprises on a mixed farm. Many of the FBM decisions are more complex in the latter case.