

9

Land Acquisition

OBJECTIVES

- To identify the basic ways in which the right to use land for farming purposes can be acquired.
- To discuss joint farming as one of the ways in which the right to use land can be acquired and to explain and critically compare the different basic types of joint farming agreements.
- To distinguish the respective advantages and disadvantages of leasing land as opposed to buying it for farming purposes.
- To explain land price determination when buying land for farming purposes.
- To lay down certain guidelines that should be followed if a land purchase is to be financed with loan capital.
- To draw attention to the implications of too high land prices.
- To sketch the prerequisites for a successful land-lease agreement and to critically analyse the various basic types of land-lease agreements.

To operate a farming enterprise, the farmer must have the right to use the land and the way in which he acquires this right is one of the most important decisions that the prospective farmer or the established farmer who wishes to expand his farming activities, has to make.

There are three basic ways in which the right to use land for farming purposes can be acquired:

- By starting to farm with an established farmer;
- By buying land; or
- By leasing land.

These three ways will be analysed in this chapter.

JOINT FARMING

In these times of high land prices and advanced technological development, few prospective farmers have adequate capital and/or knowledge to start farming independently. One solution for them would be to join an established farmer temporarily until they have acquired enough capital and experience to become independent.

Although joint farming usually takes place within the family context (father and son or father-in-law and son-in-law), this need not necessarily be the case and many of today's most successful farmers started as "employees" of established farmers.

Unfortunately the tendency in many joint farming ventures, especially those with family ties, is to operate the enterprise for years without any clear understanding or agreement about the rights and commitments of each participant. Such undefined cooperation is naturally highly undesirable, especially from the point of view of the "junior partner".

To operate a joint farming enterprise successfully, a written agreement in which the rights and commitments of each participant are clearly defined, is usually a prerequisite.

A fixed agreement has the following advantages:

- It serves as an incentive for the junior partner to produce work of high quality.
- The enterprise becomes more efficient if the junior partner also has an active role in the long-term planning and routine decision-making.
- The participants can undertake long-term planning for expansions to and improvement of the enterprise (and possibly even the eventual transfer of the enterprise to the junior partner).
- The existence of a fixed agreement facilitates dissolution of the joint enterprise. This is particularly important if one of the partners should die.

It is difficult to make an exact evaluation of these advantages, but it does seem as if the relatively poor performance of many joint farming enterprises can be traced to a lack of incentive for the junior partner. This usually happens when the junior partner's rights and duties in the joint enterprise are not clearly defined in an agreement.

What follows is a discussion of the most common types of agreements between participants in a joint farming enterprise, namely, project, wage, branch, wage/profit-sharing and partnership or profit-sharing agreements.

The project agreement

A project agreement is the simplest form of joint farming, since a single or at most a few projects are involved in the joint enterprise. An example of such a situation is where an established vegetable farmer comes to an agreement with his young son to, say, produce and market five ha of tomatoes on a joint basis in a specific season. In such cases there are usually specific conditions about sharing the costs of and income from the project between the two participants.

In a project agreement, it is basically a single project that is involved in the joint farming enterprise.

Project agreements are normally of short duration and are usually used to give the young person some experience of farming and to determine whether the cooperation between the participants is such that a more sophisticated and permanent agreement can be built thereon.

The wage agreement

In the case of a wage agreement the junior partner receives a fixed cash salary. As in the case of project agreements, the wage agreement is also only the forerunner of a more permanent and satisfactory type of joint farming agreement. If a young man still has to do his military training, for example, or is not quite sure which career he wants to follow, the salary basis is usually preferable if he wants to start farming. If a project agreement already exists, this could be continued with the addition of a wage agreement to cover other duties that he will perform on the farm.

In a wage agreement, the junior partner receives a fixed cash salary.

From the junior partner's point of view it is important that the wage agreement does not continue for longer than is absolutely necessary since a protracted wage agreement has the serious drawback that it may cause both participants to develop approaches that could have a negative effect on farming results when a more permanent type of agreement is reached. In the case of a typical wage agreement, the owner usually takes the decisions alone and the junior partner is actually only a labourer or employee. Consequently he does not learn to take decisions independently. The owner, on the other hand, becomes accustomed to making

decisions on his own. Such approaches will naturally not promote efficient cooperation in the long term.

The branch agreement

In the case of the typical branch agreement the junior partner receives a fixed salary plus a share of the margin above specified costs of a specific branch of production, for which he is solely or mainly responsible. (As explained in chapter 3, the concept "margin above specified costs" means the remainder of the gross production value of a specific branch of production after deducting specified cost items.) In this way a junior partner could receive a salary of R100 per month plus a quarter of the margin above specified costs of the dairy branch. The fixed salary need not, however, necessarily form part of the agreement. His total remuneration may consist of part or the whole margin above specified costs of the specific production branch for which he is mainly or solely responsible.

In the typical branch agreement the junior partner receives a fixed salary plus part of the margin above specified costs of a specific branch of production for which he is responsible.

The greatest advantage of a branch agreement over a wage agreement is, firstly, that the junior partner gets the opportunity to develop his managerial skills and, secondly, there is the incentive to improve the quality of his performance because he shares in the "profit".

An important disadvantage of this type of agreement could be that the junior partner develops only a limited interest in the farming enterprise and will therefore tend to give too much attention to the branch from which he derives his income. Moreover, he is not being fully trained for the day when he might have to accept more responsibility for the whole enterprise.

The wage/profit-sharing agreement

In this type of agreement the junior partner receives a fixed minimum salary or a portion of the farm profit, whichever may be the greater. The net farm income may naturally serve as a basis instead of the farm profit. Where he shares only in the yield from a single branch in terms of the branch agreement, he would in this case share in the entire farm profit. However, in this type of agreement the junior partner is still merely an employee. He only makes his labour available and although he has some share in the management of the enterprise, the senior

partner provides the capital, he is responsible for paying the running farming costs and he also contributes labour and management skill.

In the wage/profit-sharing agreement, the junior partner shares in the farm profit, but he is guaranteed a minimum income.

The basic principle in this type of joint farming agreement is that each participant shares in the farming profit in proportion to the labour, capital and management skill that he contributes towards obtaining that farm profit.

This type of agreement can be illustrated by means of a simplified numerical example.

Example 1

(a) *Calculating the contributions of participants to the farm profit of a joint farming enterprise*

Contributions by participants	Amount/value	Rate	Participant A	Participant B	Total
<i>Participant A</i>					
Land	R300 000	6%	R18 000	—	R18 000
Other assets	R200 000	8%	R16 000	—	R16 000
Labour	12 months	R1 000	R12 000	—	R12 000
<i>Participant B</i>					
Labour	12 months	R1 000	—	R12 000	R12 000
Total contributions			R46 000	R12 000	R58 000
Percentage contribution			80%	20%	100%

(b) *Distribution of the farm profit*

Say the farm profit for a specific year comes to R100 000 and the guaranteed salary of participant B (the junior partner) is R12 000.

$$\begin{aligned}
 \text{Participant A (80\% x R100 000)} &= 80\,000 \\
 \text{Participant B (20\% x R100 000)} &= 20\,000 \\
 &= \underline{\underline{\text{R100 000}}}
 \end{aligned}$$

Suppose, however, the farm profit for the next year is only R40 000, while participant B's annual minimum guaranteed salary is still R12 000.

$$\begin{aligned}
 \text{Participant B (20\% x R40 000)} &= 8\,000 && (12\,000) \\
 \text{Participant A (80\% x R40 000)} &= 32\,000 && (28\,000) \\
 &= \underline{\underline{\text{R40 000}}} && \underline{\underline{\text{R40 000}}}
 \end{aligned}$$

Judged on a contribution basis, participant B's share in the farm profit is only R8 000, but because he has been guaranteed a minimum income of R12 000, it means that participant A receives only R28 000 instead of R32 000 of the farm profit.

The partnership or profit-sharing agreement

The full partnership or profit-sharing agreement differs from the wage/ profit-sharing agreement in that the junior partner does not receive a guaranteed salary and/or a part of the farm profit. He shares on an equal or other basis with the senior partner in the profit remaining after each partner has been remunerated for the resources which he contributed to the joint venture. In the case of a partnership, the junior partner contributes capital, labour and management skill. His participation in the management of the enterprise is usually also greater than is the case in a wage/profit-sharing agreement.

In the partnership —

- each partner contributes a part of his time to the farm activities;
- each partner makes resources or property available;
- decision-making is on a joint basis; and
- profits (losses) are distributed according to the contribution of each partner.

Although the method of "profit sharing" may differ from one partnership to the next, there are three basic methods, namely:

- Profits are distributed in proportion to the capital and labour contributed by each partner.
- The capital contribution of each partner is remunerated at a pre-arranged rate and the remainder of the profit is distributed according to the labour contribution of each partner.
- The capital and labour contributions of each partner are remunerated at a pre-determined rate and the remainder of the profit is distributed between the partners according to a pre-determined ratio.

The following should therefore be steps in "profit sharing" in any partnership:

Step 1: Determine the rate of remuneration for capital and labour contributions:

Wage rate	=	R8 per hour
Interest rate	=	10%

Step 2: Determine the extent and value of each partner's capital and labour contribution:

Description	Extent of contribution		
	Partner A	Partner B	Total
Capital	R250 000	R150 000	R400 000
Labour	1 200 hrs (30%)	2 800 hrs (70%)	4 000 hrs
	Valuation of contribution		
	Partner A	Partner B	Total
Capital @ 10%	R25 000	R15 000	R40 000
Labour @ R8 per hour	R9 600	R22 400	R32 000
Total	R34 600	R37 400	R72 000
Percentage of total	48%	52%	100%

Step 3: Calculate the apportionable farm profit:

Gross production value	=	186 000
Production, marketing and administrative costs	=	68 000
Net farm income	=	118 000
Interest on loan capital and land rental	=	18 000
Farm profit	=	R100 000

Step 4: Distribute the profit according to the method agreed upon:

Method 1: Distribution of profit in proportion to the capital and labour contribution of each partner.

Description	Distribution of profit		
	Partner A	Partner B	Total
Farm profit	—	—	R100 000
Percentage contribution	48%	52%	100%
Profit share	R48 000	R52 000	R100 000

Method 2: Once the capital contribution of each partner has been remunerated at the pre-determined rate, the remainder of the profit is distributed in proportion to the labour contributed by each partner

Description	Distribution of profit				Total remuneration
	Partner A		Partner B		
	Contribution	Remuneration	Contribution	Remuneration	
Capital @ 10%	R250 000	R25 000	R150 000	R15 000	R40 000
Labour contribution	30%	R18 000	70%	R42 000	R60 000
Total remuneration	—	R43 000	—	R57 000	R100 000

Method 3: Once the capital and labour contributions of each partner have been remunerated at the pre-determined rates, the remainder of the profit is shared equally.

Description	Distribution of profit				Total remuneration
	Partner A		Partner B		
	Contribution	Remuneration	Contribution	Remuneration	
Capital @ 10%	R250 000	R25 000	R150 000	R15 000	R40 000
Labour @ R8/hour	1 200 hrs	R9 600	2 800 hrs	R22 400	R32 000
Subtotal	—	R34 600	—	R37 400	R72 000
Remainder	—	R14 000	—	R14 000	R28 000
Total remuneration	—	R48 600	—	R51 400	R100 000

Farm profit represents the remuneration to own capital, own labour and entrepreneur's remuneration to the farmer. According to *method 3* the remuneration for capital and labour contributions was allocated to the partners at a pre-determined rate and the remainder of the farm profit was then divided *equally*. The latter course assumes equal contributions of entrepreneurship (managerial skill and acceptance of risk) by the partners. The management acumen contributed by each partner and the risk taken by each are not, however, necessarily the same, which is why the remainder of the profit may also be divided differently.

LEASING LAND FOR FARMING PURPOSES VERSUS BUYING IT

There is no definitive answer to the question of whether it is more advantageous to buy land for farming purposes rather than to lease it. Both methods of acquiring the right to use land have advantages and disadvantages, including the following:

- A big disadvantage of landownership as opposed to leasing is that the landowner can easily obtain excessive credit (a too high debt ratio) as a result of the attractiveness of land as security for loans, which may later land him in financial trouble. (In the previous chapter this aspect was also raised and it was pointed out that the tendency to obtain credit according to the security value of land rather than its income potential as basis, puts farmers' cash position under a severe strain in poor agricultural years.)
- Landownership has high prestige value and it gives greater satisfaction to make improvements on one's own, rather than someone else's property.
- Landownership creates an opportunity for incidental "profits" as a result of the appreciation of land value. Unfortunately, these profits can only be converted into cash on cessation of farming activities and selling the land to someone else. It must be borne in mind that deflationary conditions may arise and that land values would then depreciate.

- Landownership leads to less flexibility in the enterprise than would be the case when the land is leased. This is especially important in the case of the beginner.
- Landownership demands substantial capital investment. Where capital is a limiting factor, it may therefore be better to lease land and to use the limited capital as working capital. It often happens that the farmer ties up so much of his capital in the land that he does not have enough left over or cannot acquire enough to cultivate the land properly. The result is a constant lack of money.
- A major drawback of leasing land is the uncertainty that often accompanies lease agreements. These include uncertainties in respect of the period of lease, cancellation of lease, erection of fixed improvements, etc.
- Seen purely from a domestic or social point of view, there could also be disadvantages in living on leased land.

From the preceding overview of the advantages and disadvantages attached to the purchasing and leasing of land for farming purposes, it is clear that there is no hard and fast rule about when land should be purchased and when it should be leased. This depends on the circumstances of every individual. From a management point of view, the problem should be approached as objectively as possible and the farmer should make a clear distinction between economic and social considerations.

PURCHASING LAND FOR FARMING PURPOSES

When purchasing land for farming purposes, decisions to be taken concern various aspects such as the size, type and price of the land. This section will deal only with the land price — other aspects are dealt with elsewhere in this book.

Before laying down specific guidelines for determining land price when purchasing land for *bona fide* farming purposes, some general aspects of land values will be briefly discussed.

Land values

When thinking of land values, two questions immediately come to the fore:

- When does a property have value? (The concept of productivity.)
- What causes a farm to have productivity and therefore value? (Value-producing factors.)

It is also necessary to distinguish between two types of value.

- *Personal value* represents the amount of money that a specific person is prepared to pay for a specific farm at a specific moment in time.
- *Market value* represents the amount of money that a willing buyer is prepared to pay a willing seller for a farm at a specific moment in time.

This section will deal consecutively with productivity, value-producing factors, personal value and market value.

Productivity

The answer to the question why the market (or an individual) is prepared to pay a certain price for a farm is that there are both monetary and non-monetary advantages and disadvantages attached to owning a farm. For example, in the case of a cattle farm, the most important advantages are probably the income that can be obtained from selling slaughter stock (monetary) and stud animals (monetary), and the pleasure derived from that type of farming and the specific lifestyle (non-monetary) which it represents. The most important disadvantages would probably be the cost of dipping, stock remedies and feed (monetary), labour costs (monetary), transport costs (monetary) and having to do without good shopping centres, medical services and recreation facilities (non-monetary). Should the advantages of owning a farm outweigh the disadvantages for a specific individual, the farm has productivity for that person and he is prepared to pay a price for this productivity.

The productivity of a farm (as a net concept of advantages over disadvantages) may differ from person to person, and therefore also the price which different people are prepared to pay for a specific farm. This price that a person is willing to pay for the productivity which he attaches to a farm, is known as personal value.

Value-producing factors

The factors that contribute to value and therefore induce a person to pay a certain price for a farm, are of a three-fold nature:

- The physical nature of the land and improvements.
 - The situational network.
 - The use that can be made of the land (right of use).
- *The physical nature of the land and improvements:* In contrast with land in urban areas, the productivity of most farms is inherent in the soil itself. A cattle farm of which the veld has a higher carrying capacity than that of adjoining cattle farms, is usually worth more per unit area than that of the

other cattle ranches. Land that can be irrigated can potentially yield a higher income than dryland and is therefore more expensive.

Improvements do not only include the dwelling and necessary outbuildings, but also the improvements aimed directly at enhancing productivity of the soil. For example, a cattle farm could have a basic carrying capacity of 1 LSU per 10 ha. If this were to be improved by dividing the farm into camps and providing watering-places, the carrying capacity could be increased to 1 LSU per 8 ha. It is therefore clear that the unimproved farm will have a lower value than when the same farm has been improved.

- *The situational network:* The situational network of a farm refers to all those links which are necessary to keep in touch with other human activities. This includes schools and school hostels, shops, produce markets and recreation facilities. It is necessary to overcome distance in order to maintain any of these links, and this has a cost implication. It is therefore logical that a cattle farm situated 15 km from Johannesburg will sell at a substantially higher price per ha than an identical farm in the north of South-West Africa.
- *Right of use:* This refers to the legal use that can be made of the land. Although right of use is probably less important in the case of a farm than in urban properties, it is nevertheless an aspect that must be borne in mind. A farm that adjoins a town may already have been incorporated into the town and have been zoned for residential sites. This could have an important influence on the farm's value.

Personal value

Personal value can be defined as the price which a specific person is prepared to pay for a specific farm at a given time. The concept can be explained by a hypothetical example.

Example 2

Say Jock Connor is a 65-year-old widower with no kin, who has been farming on his farm *Volens* for 45 years. He wants to sell the farm and retire at the seaside. To market the farm as professionally as possible, he decides to put it up for auction. He compiles a brochure explaining, among other things, the potential net farm income (NFI), and distributes it among interested parties. The information in the brochure was compiled with the assistance of the local agricultural extension officer after a thorough scientific analysis of the farm and reads as follows:

	NFI (R)
20 ha potatoes at R180/ha	3 600
90 ha wheat at R45/ha	4 050
30 ha maize at R40/ha	1 200
35 LSU (industrial milk) at R60/LSU	2 100
300 SSU (wool) at R17/SSU	5 100
<i>Total potential annual NFI</i>	<u><u>16 050</u></u>

With the above information at their disposal, prospective buyers attend the auction. Although more people attend, it soon becomes clear that there are only four serious prospective buyers:

- William Smith, a young prospective farmer presently employed by the local cooperative.
- "Smart John" Brown, generally known as a scientific farmer and whose farm adjoins *Volens*.
- "Miser" Morris, wealthiest farmer in the district, who already owns 20 farms. The one on which he lives also adjoins *Volens*.
- Dr "Forceps" Foster, the local dentist.

These four people calculated how much they were prepared to pay for the farm in the following ways.

(a) *William Smith*

He inherited some money a few years ago and invested this with a view to such an opportunity as the present one. This amount has now grown to R180 000. He is aware that Jock Connor is prepared to grant a first mortgage of up to R120 000 on *Volens* for 18 years at 12% interest per year. The bond will be repayable in 18 equal instalments of interest plus capital.

William calculated that the cost of living for himself and his family will come to R6 000 per year and that, in addition to the purchase price of the farm, he will need an additional R40 000 as working capital for buying implements and livestock.

With the above in mind, William calculates as follows what he can pay for the farm:

Potential net farm income	16 050	
Less: Cost of living	6 000	
Amount available for repaying mortgage	<u>R10 050</u>	
Maximum amount of mortgage	$\frac{10\ 500}{0,1379^*}$	R72 800 (72 878,9)

* See the annexure, table 3.3.

Amount that can be paid for farm:		
Own capital	180 000	
Mortgage	<u>72 800</u>	252 800
Less: Need for additional capital		<u>40 000</u>
Maximum amount available for farm		<u><u>R212 800</u></u>

William therefore decides that he can bid to a maximum of R212 800 at the auction.

(b) "Smart John" Brown

"Smart John" argues as follows: He makes a good living from the three farms which he already owns. If he can therefore buy *Volens* for a price at which the farm can pay for itself over the next 18 years, he will be satisfied. He has enough surplus capacity in implements, livestock and working capital to make optimum use of *Volens* and he is also aware that Jock Connor will grant a bond of R120 000. To achieve his objectives, he can therefore not pay more than $R \frac{16\ 050}{0,1379} = R116\ 300$ (116 388) for the farm.

(c) "Miser" Morris

"Miser" Morris cannot be bothered with "scientific calculations" and he sees the transaction as follows:

I have been waiting nearly 40 years for the chance to buy *Volens*, and I have R400 000 available, so come what may, I am prepared to pay R400 00 for the farm, even if just to show the other blighters that I can do it.

(d) Dr "Forceps" Foster

Dr Foster sees the farm purely as an investment and his calculations are as follows:

Potential net farm income	16 050
Salary for foreman	<u>7 200</u>
Balance	<u><u>R 8 850</u></u>

If he wants a minimum annual return of 7,5% on his capital, he can invest

$$R \frac{8\ 850}{7,5} \times \frac{100}{1} = R118\ 000 \text{ at most in the farm.}$$

He also estimates that, apart from the price of the farm, he will need an additional R40 000 capital for implements, livestock and working capital. He can therefore bid no more than $(R118\ 000 - R40\ 000) = R78\ 000$ for the farm.

At the auction "Miser" Morris bought the farm for R213 000.

Several illuminating conclusions can be drawn from example 2:

- The calculation of personal values can vary from a totally emotional approach to the more rational or scientific approaches.
- It would be moralistic to claim that any one of these approaches is right or wrong. In view of each person's particular objective, each one is right.
- The decision about how much one can pay for a farm is a highly individual one, and will vary from person to person. The farm has a different personal value for each prospective buyer.
- The decision about how much a person can afford to pay for a farm can be taken on a rational basis. It does not, however, mean that no assumptions can be made, since the question of risk and decision-making is an inherent part of the management task under uncertain circumstances.

Market value

The *market value* of a farm refers to the amount paid for it if it is bought from a willing seller by a willing buyer at a given moment.

Usually market value cannot be deduced from personal values, especially because personal values are so divergent. Estimating the market value of a farm is therefore an extremely difficult matter. The technique used is usually that of comparable selling prices, which in essence means that the farm concerned is compared with similar farms sold recently.

With the above discussion of land values as background, it is now possible to lay down certain guidelines according to which a person can determine the price that he can pay if he wants to purchase land for *bona fide* farming purposes.

Guidelines for determining land price when purchasing land for bona fide farming purposes

When a person buys land for *bona fide* farming purposes, the price that he pays should be based on the income potential of the land. This means that the potential net farm income that the land can yield must be adequate to —

- compensate the buyer for the risk he takes to invest capital in the land;
and
- ensure the buyer and his family a decent standard of living.

If the land price is based on the income potential of the land it (the price) is determined solely by —

- the anticipated net farm income from the land;
- the buyer's expectations in respect of interest remuneration on the total capital investment made to realise the net farm income (the capitalisation rate); and
- the amount which the buyer finds necessary to ensure a decent standard of living for himself and his dependents.

It is, however, difficult to decide how to quantify these factors to arrive at a land price.

The technique of land price determination based on the income potential of land

The following is the basic formula used to determine land price based on the income potential of land:

$$\text{Land price} = \left(\frac{\text{NFI} - \text{cost of living}}{\text{capitalisation rate}} \right) - \text{Additional capital needs}$$

Application of the formula can be explained by means of a numerical example.

Example 3

Say N. Farmer intends buying a farm and that he has the following information:

Potential net farm income:	R88 000 per year
Capitalisation rate (before tax):	9%
Estimated cost of living, including tax:	R16 000 per year
Estimated additional capital investment (implements, livestock and working capital)	R180 000
The question is: How much can N. Farmer pay for the farm?	

$$\text{Land price} = \left(\frac{\text{NFI} - \text{cost of living}}{\text{capitalisation rate}} \right) - \text{additional capital needs}$$

$$= R \left(\frac{88\,000 - 16\,000}{0,09} \right) - R180\,000$$

$$\begin{aligned}
 &= \frac{72\,000}{0,09} - R180\,000 \\
 &= R800\,000 - R180\,000 \\
 &= R620\,000.
 \end{aligned}$$

Under the given circumstances N. Farmer can therefore pay R620 000 for the farm, while his total capital investment in the enterprise will come to R800 000.

To apply this technique, the potential buyer must have the following information:

- The potential net farm income;
- The capitalisation rate; and
- The expected annual cost of living.

The potential net farm income

Also read the discussion in chapter 6. When land or a farm is purchased for farming purposes, it is purchased with a view to the net farm income that will hopefully be yielded in the *future*.

The net farm income of the past is therefore only relevant insofar as it can give an indication of what can be expected in the future.

If the farm which the farmer wants to purchase has been in production for some time and therefore has a profit history, this profit history could serve as basis for income projections for the foreseeable future. The "profit" which such a farm produced must, however, be approached with great circumspection. For example, the prospective buyer must ensure that the present owner wrote off enough depreciation and he must also find out whether he indulged in over-cropping.

The trend in net farm income over the past few years is also important. It may look as follows:

Example 4

Year	Annual net farm income			
	Case A	Case B	Case C	Case D
	R	R	R	R
1981	100 000	100 000	120 000	80 000
1982	120 000	95 000	110 000	90 000
1983	100 000	100 000	100 000	100 000
1984	80 000	105 000	90 000	110 000
1985	100 000	100 000	80 000	120 000
Average	R100 000	R100 000	R100 000	R100 000
Capitalisation rate	8%	7%	10%	6%
Valuation	R1 250 000	R1 428 000	R1 000 000	R1 667 000

Over the past five years all four cases showed an average annual net farm income of R100 000. The income of Case C declined annually, while that of Case D increased annually. The income of Case A fluctuated more than that of Case B.

The causes of the trends shown in the example must be carefully examined. For example, it is necessary to determine whether they can be attributed to management quality, price fluctuations, climatic conditions or inherent weaknesses in the land.

(If the farm does not already have a profit history, an indication of the potential net farm income can be obtained by approaching farmers with comparable land in the vicinity. It must, however, be borne in mind that all soil on the same farm is not identical and that results achieved on neighbouring farms can merely serve as an indication.)

Once the profit history has been analysed, the prospective buyer must try to project the net farm income for the foreseeable future (the next five or ten years).

Net farm income is compiled from physical yield multiplied by price minus costs. He must therefore project all three of these elements, which is an extremely difficult task. One can therefore expect that the projection will be subject to error.

If however, it is done on a scientific basis, with the profit history as background, it could nevertheless lead to usable estimates. This is particularly true in respect of products that are subject to control and therefore to smaller price fluctuations. Always guard against over-optimistic projections; rather err on the conservative side.

The capitalisation rate

It is practically impossible to prescribe the correct capitalisation rate for each individual under all conceivable circumstances.

As point of departure for determining the capitalisation rate, it must be borne in mind that the rate at which the potential net farm income will be capitalised must make provision for capital and entrepreneur's remuneration. The problem can be approached in different ways:

The first is to base the capitalisation rate on the yield rate that the capital can earn elsewhere. The loan rate of money in the case of a secured loan (e.g. mortgage loan) can also be used as a basis.

Whatever the basic rate may be, it must be further adjusted to the risk of the farming situation concerned in comparison with the basic situation which served as point of departure. As a rule it can be said that the greater the risk, the higher the capitalisation rate must be, and vice versa. Put differently, one is willing to pay more for a property with a sure income than for one with an uncertain income.

The income trend also plays a role when determining the capitalisation rate. In the case of example 4, and based on the assumption that the potential buyer will

be prepared to capitalise the income in Case A at a rate of 8%, he will, because of the more stable income in Case B, be prepared to pay more for the farm — and therefore use a lower capitalisation rate. In Case C, which displays a downward income trend, the buyer will use a higher capitalisation rate and a lower one in Case D, which has an upward income trend.

The expected annual cost of living

Under normal circumstances it should be possible to determine the amount needed to assure the prospective buyer and his dependents a decent standard of living fairly accurately. Guard against a too conservative estimate, and also bear in mind that provision for income tax must be included in the expected needs for maintaining a decent standard of living.

Final remarks

Although the application of the technique of determining land price according to the income potential of a farm or piece of land is based to a large extent on subjective judgement, it nevertheless provides a reasonably scientific basis for determining price. Such an approach is therefore preferable to a "blind" emotional approach which is often stimulated by an insatiable hunger for land. As will be shown later in this chapter, the latter approach is often the first step towards ultimate ruin or a constant lack of funds.

As a result of the high degree of subjective judgement in the determination of land prices, it should also be clear that it is unlikely that two or more individuals will decide on the same price for a farm. Even if the calculation of the potential net farm income does produce the same result (which is already unlikely), no two individuals have the same sensitivity to risk or an identical need for the maintenance of a standard of living. The results of implementing this technique will also differ considerably if the one potential buyer farms on a neighbouring farm so that his existing enterprise provides him with the necessities of life and he has reserve capacity, compared with another potential buyer who is just entering the farming industry and will be totally dependent on his enterprise for the necessities of life.

The financing of land purchases by means of loan capital

Determining the land price as explained above, is only the first step in the process of purchasing land. If the seller is prepared to accept the prospective buyer's offer, the potential buyer must determine whether he can "afford" the purchase.

In the previous chapter attention was drawn to the fact that land purchases — theoretically speaking — should only be made with own capital. If the potential buyer has enough own capital to finance — fully — the land transaction plus the

additional capital needs, there are no problems. However, this is rarely the case under the present financial circumstances and loan capital usually has to be added to own capital. There is no objection to this, provided that the repayment conditions are such that they can be covered by the net interest remuneration on the capital investment (net farm income less cost of living and tax). As also shown in the previous chapter, this will, under normal circumstances, mean that the term of the loan will have to be a fairly long one.

In example 3 the potential net farm income was estimated at R88 000 per year and the expected cost of living and tax at R16 000 per year. Assuming that these estimates are realistic, it leaves an annual amount of R72 000 available for repaying debt and interest. With this figure as point of departure, it is possible to make different calculations for financing purposes.

Example 5

Suppose that the seller accepts N. Farmer's offer of R620 000 for the farm. He is further prepared to grant a first mortgage of R500 000 for a period of 20 years at an interest rate of 15% per annum, and repayable in 20 equal annual instalments of interest and capital. What is the maximum mortgage loan that N. Farmer can afford under these circumstances?

From table 3.3 in the annexure it appears that the annual instalment will be R0,1598 per R1 of the mortgage loan ($n = 20, i = 15\%$).

$$\begin{aligned} \text{Maximum mortgage loan} &= R\left(\frac{1}{0,1598} \times \frac{72\,000}{1}\right) \\ &= R450\,563 \end{aligned}$$

Should N. Farmer therefore decide to accept the mortgage loan, this means that he must have a minimum of own capital amounting to R349 437 (R620 000 - R450 563) to be able to buy the farm, operate the enterprise and realise R16 000 annually for cost of living and tax. Division of the different redemption instalments between interest and capital can now be determined as follows:

Year	Mortgage loan	Interest at 15% p.a.	Instalment	Capital redemption
1	450 563	67 584	72 000	4 416
2	446 147	66 922	72 000	5 078
3	441 069	66 160	72 000	5 840
Total	—	R989 437	R1 440 000	R450 563

From this table it is clear that N. Farmer, under the given circumstances, cannot cope with a mortgage loan of more than R450 563 (in practice probably R450 000).

If he therefore does not have own capital of ±R350 000, he cannot afford the transaction, unless he can bargain for a lower purchase price — something which is doubtful under prevailing conditions in the RSA.

Example 6

Suppose the same circumstances as in example 5 applied, except that N. Farmer has own capital amounting to R430 000. To operate the planned farming enterprise under the given circumstances, he therefore requires a mortgage loan of R370 000. The seller is prepared to grant a first bond for this amount at 15% interest per year on the further condition that repayment is made in equal annual instalments of interest and capital. What is the minimum term for which N. Farmer should accept the loan?

Mortgage loan required	R370 000
Annual amount available for interest and capital repayment	R 72 000

If N. Farmer borrows R370 000, he can repay R72 000 annually. If he therefore borrows R1, he can annually repay

$$R\left(\frac{72\,000}{370\,000}\right) \\ = R0,1946.$$

Table 3.3 in the annexure shows the following:

n	15%
10	0,1993
11	0,1911

N. Farmer therefore needs a repayment period of between ten and eleven years. He will naturally have to choose the longer period of *eleven years*, which means an annual redemption rate of R0,1911 per R1 of the mortgage loan. The total annual instalment will then come to less than R72 000 - R70 707 in this case.

Instalment	= R(370 000 x 0,1911)
	= R70 707

Division of the annual instalment of R70 707 between interest and capital can again be determined:

Year	Mortgage loan	Interest at 15% p.a.	Instalment	Capital redemption
1	370 000	55 500	70 707	15 207
2	354 793	53 219	70 707	17 488
3	337 305	50 596	70 707	20 111
Total	—	R407 777	R777 777	R370 000

From the discussion and examples so far, it appears that there are techniques according to which the financing implications when purchasing land can be determined. The prospective buyer should use these techniques to prevent him from experiencing serious repayment problems, even if he paid a realistic price for the land.

The implications of too high land prices

It would not be inappropriate at this stage to remark that a prospective farmer will find it difficult to purchase a farm if he should base his offer solely on the income potential of the farm. The fact of the matter is, however, that that is the highest price that can be paid for a farm for *bona fide* farming purposes. Any price higher than that will mean that the expectations in respect of interest remuneration and/or cost of living will not be met.

As the gap between the price (market value) of farm land and the value based on its income potential widens, the less the buyer's expectations in respect of interest remuneration and/or provision of the necessities of life will be met. That is why the unrealistically high land prices in the RSA contain the germ for the destruction of the South African farming community.

The above statements can be elucidated by expanding the data that served as illustration thus far.

Example 7

Description	Case A	Case B	Case C	Case D
	R	R	R	R
Farm price	620 000	750 000	900 000	1 000 000
Additional capital	180 000	180 000	180 000	180 000
Total capital investment	800 000	930 000	1 080 000	1 180 000
NFI	88 000	88 000	88 000	88 000
Cost of living	16 000	16 000	16 000	16 000
Interest remuneration	72 000	72 000	72 000	72 000
Interest remuneration as percentage of total capital investment	9,0%	7,7%	6,7%	6,1%

The data in the table are self-evident and the implications of the higher land price do not appear too serious. Apart from the fact that the interest earnings on capital invested in Case D only come to 6,1% instead of the expected 9,0%, the implications are indeed not serious, but this is only valid where the buyer is moneyed and can finance the land transaction with own capital. The picture changes drastically once the matter of loan capital is raised:

Description	Case A	Case B	Case C	Case D
	R	R	R	R
Total capital investment	800 000	930 000	1 080 000	1 180 000
Own capital	350 000	350 000	350 000	350 000
Mortgage loan at 15% interest over 20 years	450 000	580 000	730 000	830 000
NFI	88 000	88 000	88 000	88 000
Interest and capital redemption: R 0,1598 per R1 borrowed	71 910	92 684	116 654	132 634
Cost of living	16 090	(4 684)	(28 654)	(44 634)

Again the data in the table are self-evident. Only in Case A does the buyer still have the R16 000 necessary for maintaining a decent standard of living for himself and his dependents. In all three the other cases the net farm income is inadequate to cover interest and capital commitments.

It should now be clear that unless a person has enough money, he is doomed to poor financial results and eventual ruin if he pays too much for land.

LEASING LAND FOR FARMING PURPOSES

An alternative to purchasing land for farming purposes, is to lease it. In many developed countries there is a very clear trend of an ever-widening division between owning land and its cultivation. Fewer and fewer landowners are cultivating their land — they lease it to someone else to farm for his own account. Although statistics on this in the RSA are fairly dated and do not reflect the same trend, there are nevertheless indications that this is also becoming applicable to South Africa.

Prerequisites for a successful lease agreement

Before entering into a lease agreement, there are a number of factors that should be considered to minimise later disputes and misunderstanding between the lessee and the lessor:

- The agreement should hold economic benefits for both the lessee and the lessor.
- There should be no misunderstanding about each party's contributions.
- Comprehensive and accurate physical and financial records must be kept and there must be absolute clarity about who is responsible for keeping these records.
- The parties must agree about who will make the final decision in case of disputes.
- There must be clarity about which party is responsible for which activities or production branches.
- There must be absolute clarity about when the rent has to be paid.
- A decision must be reached about who is responsible for the maintenance of assets such as buildings, equipment, vehicles and soil fertility.
- The compensation that will be paid to the lessee on termination of the contract for improvements made during the period of the lease contract must be stipulated beforehand.
- A written contract including the decisions mentioned above must be drawn up.

Types of lease agreements

There are the following *four* basic types of lease agreements, although many variations occur in practice:

- Fixed cash lease
- Crop share lease
- Livestock share lease
- Flexible cash lease

Fixed cash lease

As the name indicates, the lessee in this case periodically pays a fixed amount of cash to the lessor per unit area leased, for example R200 per ha per year.

The lessee periodically pays the lessor a fixed amount in cash per unit area leased.

This type of lease agreement is usually uncomplicated. Apart from a stipulation about the amount of rent and the time of payment (single payment or in instalments), the agreement may contain certain stipulations concerning the type of crops that may be cultivated and the rotational cropping system that has to be

followed. For the rest management of the enterprise is left exclusively to the discretion of the lessee. This fixed cash lease agreement is usually found in the case of crop production, although it may also occur in livestock farming.

A fixed cash lease agreement is particularly attractive for the lessor who:

- prefers a fixed annual income;
- has little knowledge of or interest in farming; and/or
- does not reside in the area.

The fixed cash lease agreement has advantages and disadvantages for both lessee and lessor.

- A considerable advantage for both parties is that this type of agreement is relatively simple, leaving little opportunity for misunderstandings.
- It gives the lessee wide discretion. Apart from possible restrictions concerning the type of crop and crop rotation, the lessee has virtually unlimited decision-making scope concerning the management of the enterprise.
- On the other hand, this type of agreement relieves the lessor of any management inputs. This is especially important for the landowner who lives elsewhere or has retired.
- A disadvantage of such an agreement for the lessee is that he alone carries the production and price risks. This is something that could weigh very heavily under unfavourable climatic and/or market conditions. The opposite applies to the lessor - under favourable conditions he does not share in the prosperity.
- For the lessor there is the danger that the lessee may practice overcropping with a view to short-term benefits and leave the owner with a less productive farm on termination of the lease. Because the lessor does not share directly in the profits, the lessee may, on the other hand, find that the lessor tends to be reluctant to incur any maintenance costs for fixed improvements. Problems such as these can, however, be prevented by including the necessary stipulations in the lease contract.
- A potential problem for both parties is that it may be difficult to decide on a reasonable amount of rent. The general trend is that rent is too low in times of increasing product prices (an advantage for the lessee), and too high when prices and yields are low (disadvantage for the lessee). It is also true that the

lessor can bargain for a better rent if the land concerned is more productive or bigger than normal for the area, and vice versa.

Crop share lease

Crop share lease agreements are found especially in the case of cash crops, although it may also be used in the case of forage crops and pasturage.

In this type of lease agreement the lessee and the lessor share the inputs and outputs involved in the production of the crop(s) concerned.

An example of an agreement of this nature is the so-called 50/50 agreement, where the lessor receives half of the crop(s) concerned (in cash or in kind) for the use of his land and fixed improvements. He often also pays half of the costs involved in inputs such as fertiliser, seed and pesticides. The lessee receives the other half of the crop and, in return, he supplies all fuel, equipment, vehicles and labour and is naturally also responsible for half of the costs of fertiliser, seed, etc.

Depending on the relative importance of land and fixed improvements as input component on the one hand, and labour and machinery as input component on the other, the crop need not necessarily be shared equally (a crop-sharing procedure will be briefly explained later in this chapter).

This type of lease agreement has the following specific characteristics:

- Price, climatic and other natural risks are borne by both parties.
- Improved technology leads to increased production (quantitative or qualitative) and it is to the benefit of both parties to adapt to such improvements.
- Since the lessor contributes to the variable production costs (seed, fertiliser, etc.) it reduces the working capital needs of the lessee compared with a fixed cash lease agreement. This necessarily means a lower risk for the lessee, while the opposite naturally applies for the lessor.
- Compared with a fixed cash lease agreement, the lessor in this type of lease agreement has a bigger say in the management of the enterprise. Although many landowners have special farming knowledge and experience which could be used to the benefit of both parties, it nevertheless limits the managerial freedom of the lessee.

Entering into a crop share lease agreement could present the following problems:

- Determining a fair method for sharing the crop based on each party's contribution.

- Adapting the agreement to make provision for the cost involved in using new technological developments.
- Reaching finality about who has the final say about the annual crop production programme to be implemented.
- Determining an acceptable price for the lessee's use of the dwelling and other facilities on the farm where applicable.

Livestock share lease

The problems and opportunities in a livestock share lease agreement are similar to those in a crop share lease agreement. Both parties contribute to the resources and both share in the costs and income.

In the typical livestock share lease agreement, the lessor provides the land and fixed improvements, the lessee the labour and other equipment, and both parties the livestock.

This type of lease agreement is usually more complex than the one discussed in the previous paragraph because it calls for additional decisions. For example, it includes decisions concerning the type(s) of livestock, the size of the different livestock branches, whether feed must be purchased or produced, herd expansion by natural increase or by purchasing, and the marketing stages. If these problems are analysed, it is clear that they could lead to serious differences of opinion if there is no prior agreement about who has the final say.

It is often held that this type of lease agreement has the characteristics of a partnership in so far as it concerns the joint decision-making process. Before entering into such an agreement, both parties must therefore make quite sure that they want to and can, in fact, work together.

Flexible cash lease

The flexible cash lease agreement is in essence a combination of the fixed cash lease agreement and a share lease agreement.

The purpose of this type of agreement is to retain some of the characteristics of the fixed cash lease agreement, while simultaneously giving the lessor the opportunity to share in price and yield risks.

In the case of this type of agreement, the basic fixed-cash rental is lower than "normal". The following variations may occur:

- The additional credit/debit for the account of the lessor could be based on price changes. Thus it may be stipulated that if the price of wheat rises above a certain level, the lessor must receive a certain percentage of the increase.
- The additional payment to the lessor could be based on the price of a fixed yield. The tariff could, for example, be R100 per ha plus the price of one ton of maize.
- The additional payment to the lessor could be based on a percentage of the production yield, for example 30% of the tomato crop yield. The lessor himself then sells the product where and when he wishes, and at his own price.

The major problem with this type of agreement is to find the basic tariff and the formula for calculating the additional payment as a function of price and/or size of yield.

Sharing under lease agreements

The critical problem when concluding share agreements (crops or livestock) is the matter of dividing the income and some of the costs between the lessor and the lessee.

In a share agreement it is absolutely essential for each party to understand what his own and the other party's contribution to and claim on the income involve. Only where there is complete understanding about this, is it possible to come to a fair agreement between the lessor and the lessee. "Fair" implies that the income share of each party must be proportionate to his contribution towards achieving the yields that provide the total income. The starting point for developing a fair share agreement is therefore the determination of the contribution which each party is to make.

On p 231 there is an example of a procedure that could be followed when entering into a share agreement (example 8). The point of departure is the contribution of each party; this forms the basis for division of the costs and income. This is done by calculating the percentage contribution of each party to the *total value* of the contributions and then dividing the remaining costs and income in the same ratio.

From the example it appears that the lessee provides $\pm 55\%$ and the lessor $\pm 45\%$ of the total contributions. This means that the income and the remaining costs

Item	Contribution		Party's share	
	Cost/value/source	Rate	Value of annual contribution	Lessee Lessor
<i>Land</i>				
1 Interest at percentage of market value	R500 000	6%	30 000	30 000
<i>Fixed improvements</i>				
2 Depreciation	Depreciation schedule R100 000	6%	3 000 6 000	3 000 6 000
3 Interest at percentage of replacement value	Average annual costs		1 000	1 000
4 Maintenance costs			500	500
5 Insurance				
<i>Machinery, equipment and vehicles</i>				
6 Interest at percentage of cost price + salvage value 2	R40 000	8%	3 200	3 200
7 Depreciation	Depreciation schedule		8 000	8 000
8 Maintenance costs at percentage of cost price	R80 000	3%	2 400	2 400
9 Insurance			800	800
<i>Livestock</i>				
10 Interest at percentage of present value	R40 000	10%	4 000	4 000
11 Depreciation (only applicable to non-commercial livestock)	Depreciation schedule		500 200	500 200
12 Insurance				
<i>Labour and management</i>				
13 Own labour: 12 months			6 000	6 000
14 Hired labour plus rations	Wage register	R500 p.m.	3 500	3 500
15 Management at percentage of GPV	R200 000	10%	20 000	20 000
16 Subtotal (1-15)			89 100	48 600
<i>Variable costs</i>				
17 Purchased stockfeed				
18 Other livestock costs				
19 Seed				
20 Fertiliser				
21 Herbicides and insecticides				
22 Packaging material				
23 Fuel			5 000	5 000
24 Sundry costs			2 000	2 000
25 Total Contribution (16 + 23 + 24)			R96 100	R53 600
26 PERCENTAGE OF TOTAL CONTRIBUTION			100%	55,8%
				R42 500 44,2%

(those mentioned in lines 17 - 22) will be divided in the ratio 55:45 between the lessee and the lessor.

SUMMARY

This chapter dealt with the ways in which the prospective farmer, or the farmer who wishes to expand his activities, can obtain the right to use land. For the young man who is entering the farming industry for the first time, a joint farming agreement is often the best method. As other methods for obtaining the right to use land for farming, a distinction was made between purchasing and leasing. When purchasing land it is very important to pay a realistic price for land, since a too high land price is often the first step towards failure. When leasing land, it is important to give due consideration to the nature and detail of the lease agreement to be entered into.