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**The Implications of Utilising Farm Forestry
for the Intergeneration Transfer of Assets in
Family-Farm Succession**

Samuel J.H. Zino

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the Degree of Master of Applied Science (Agroforestry) at Lincoln
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1996

In Memory of my Father
Who showed a great interest in this topic.

ABSTRACT

In modern-day rural society, for farms to be retained within families it is becoming increasingly difficult when assets are distributed evenly between children while also providing for the parents' retirement.

This report examines the implications of utilising farm forestry for the intergeneration transfer of assets in family farm succession. The concept of farm succession is explored in order to ascertain a successful process for intergeneration transfer of family farm assets. Farm forestry is investigated in terms of its benefits to crops, irrigation and livestock in order to ascertain its future role in succession planning for the family farmer. The benefits of investment in farm forestry, and legislation affecting its utilisation, are considered. Mechanisms which enable farm forestry to be utilised in farm succession are identified and discussed, with examples given. By examining the above points this report shows that when farm forestry is combined with the various mechanisms available, effective planning, and good timing, it is an effective tool in the intergeneration transfer of family-farm assets.

Key words: Farm forestry, intergeneration, family farm, succession, inheritance.

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Chapter 1

INTRODUCTION

In modern-day rural society, for farms to be retained within families it is becoming increasingly difficult when assets are distributed evenly between children while also providing for the parents' retirement. The result is that the farm is usually either sold to create a monetary income which can be evenly distributed among the family members, subdivided, or one family member has to acquire the estate by buying out the remainder of the family, creating cash-flow problems. Fairweather (1989) noted that the number of full time commercial farms are decreasing, as the large farms get larger and the small smaller as a result of the present agricultural economic climate. As a result, the small-farm holders, who are looking for a means of diversification, are taking advantage of the increasing demand of city dwellers for a block of land in the country, seemingly reacting to circumstance rather than planning for change. The very problem that is making it increasingly hard for them to survive in today's economic climate - the decreasing size of their property - is being exacerbated by selling off land in order to stay afloat.

In an agricultural market place, with declining prices which no longer have government subsidies or price support, the New Zealand family farmer must look to either increasing the size of the property or diversifying in order to create cash flows large enough to fund retirement and successful farm succession. With many farmers not having the option of increasing their land area, a means of diversification is sought. The key to investment has always been, and remains, sensible diversification. The use of farm forestry intensifies the land use as well as providing many other benefits. Also of great importance is the fact that both agriculture and natural resource management are under increasing pressure in New Zealand, through the Resource Management Act (1991), to implement practices that promote sustainable land-use.

The world's population is presently 5.4 billion, and by 2010 is predicted to be 7.2 billion (Gorman, 1995). The global annual demand for all wood is predicted to increase from 3.43 to 5.07 billion cubic metres between 1991 and 2010, due to the

increasing population and an increase in consumption per capita. With the anticipated rise in demand for forest products worldwide, and the increasing environmental pressures to stop felling native forests, plantation farm forestry seems to be sensible diversification.

Diversification into farm forestry does have its disadvantages as well as its benefits. The timescale involved with a forestry operation makes it essential to have long-term planning strategies in place if it is going to be an effective provider of superannuation or alternative income. The introduction of the Forestry Rights Registration Act (1983) has meant, however, that farmers can now utilise forestry equity before the crop is mature, allowing increased flexibility in what was a inflexible market. Because of legislation such as this, and mechanisms such as forestry joint ventures, partnerships, qualifying companies, the family trust and various gifting options available to the farmer, farm forestry is becoming increasingly more flexible and a more viable land use option for many farmers. Farmers can now develop forestry enterprises in ways which will benefit them and their families in the intergeneration transfer of farm assets. But in order to do this the farmer must plan ahead, putting into place secure structures which implement the various mechanisms and tools available to set in place a successful platform for intergeneration transfer of farm assets.

1.1 Aims and objectives

The general aim of this report was to ascertain the influence that farm forestry can have in planning a successful intergeneration transfer of family farm assets. This report therefore explores both the concept of farm succession and farm forestry in New Zealand society, identifying how farm forestry is presently utilised, and its future direction in succession planning. Due to the timescale involved with a forestry operation it is important to assess legislation affecting its utilisation. The report acknowledges the input from contemporary farm foresters who have provided working examples of how a farm forestry operation can be utilised to ensure the successful transfer of assets from one generation to another. The specific aims of the report are:

- to discuss the concept of farm succession
- to address the concept of farm forestry and explore how it is presently utilised in order to ascertain its future direction in succession planning
- to examine forestry investment and the legislation affecting its utilisation so that farm forestry owners can identify practical management solutions.
- To show how farm forestry can be utilised to provide for a successful intergeneration transfer of the family farm by using actual working examples and a hypothetical example.

The report does not cover the legal requirements set out in the various statutes mentioned and it is not, therefore, responsible for any misleading or incorrect information. It does, however, endeavour to give enough insight into this exciting topic to provoke action. It is recommended that further in-depth information should be sought from lawyers and accountants.

Chapter 2

THE CONCEPT OF FARM SUCCESSION - A NEW ZEALAND INTERPRETATION

Farmers continue to be five times more likely than any other profession to have parents in the same business (Symes, 1990) due to the high costs involved with the entry into farming, which practically make it a closed occupation. Once every generation, farmers are faced with the problem of handing on to their respective sons and daughters who wish to farm, the opportunity to do so. At the same time, however, this desire is balanced by the need of the farming parents to provide for their own retirement and to provide for non-farming children. Thus inheritance and succession are big problems faced by the farming family.

The problem of succession of the family farm is not new, and many researchers have acknowledged the importance of effective transfer. Keating and Little (1991) suggest that this is critical to the financial status of the farm, the quality of the older generation's retirement years, the nature of their ongoing relationships with the next generation, and the social and economic fabric of rural communities. Despite this, the evidence gathered by Symes (1990) suggests a lack of willingness on the part of some farmers to plan ahead, including making arrangements for retirement and succession, even though it is often advantageous to both the outgoing and incoming generations to make arrangements well in advance of the event.

Retiring farmers have many options for setting themselves up for retirement and the consequent succession by the next generation. However, established modes of succession and inheritance may be threatened by the emergence of new demographic trends in rural populations. The combination of earlier marriage age, smaller numbers of children born, and greater life expectancy imply a significant lengthening of the overlap of successive generations, thus further intensifying the complexity of intergeneration transfer of farm assets. For the three-generation farm family thus created, new strategies must be devised to avoid the stresses that arise between competing generations. Averill (1995) suggested that the key to workable solutions

in this difficult and often complex area, lies in three requirements which are all closely connected: planning, flexibility and timing. They form the basis for the second part of this discussion on the criteria that might be used to assess a successful process of intergeneration transfer of farming assets. Part one of this section provides the framework by introducing and defining the concepts of the family farm and farm succession as it relates to New Zealand. It also recognises that no two farms are the same, and no two families are the same. Every situation has unique elements, and consequently it would be fruitless to endeavour to cover every possibility. There are, however, common tools, principles and processes that are involved with successful intergeneration transfer of farming assets.

2.1 The concept of farm succession in New Zealand society

To prevent confusion over vocabulary, it is important at the outset to distinguish the meaning of terms frequently encountered in the discussion of intergeneration transfer of the family farm; 'family farm', 'succession' and 'inheritance'. In the decade from 1983 to 1993, New Zealand farming moved from a relatively high-income, protected, low-risk environment, to a low-income, unprotected environment. This change was caused by a number of factors: removal of government support to agriculture, a sequence of whole-economy policy changes, downward trends for real international prices for agricultural products, and a series of climatic disasters in New Zealand (floods, droughts and snowfalls) (Walker and Bell, 1994). Because of the removal of government price-support systems and subsidies, there is no reason for any agency being funded to define the 'family farm' as there would be no beneficial reward for such funding. Overseas, however, in such countries as America and Britain which have high levels of government support by way of direct payments, cheap loans, and price supports, it is understandable that they have a vested interest in defining the family farm. The contemporary American definition, by Tweeten, of a family farm is:

“...a family farm is an agricultural operation that is owned by a family or a family corporation, has an annual gross sales of between \$US40,000 and \$US200,000 per year, and does not hire more than 1.5 person years of labour” (cited in Gow, 1992, p. 2).

For New Zealand society it would be pointless to place cash-flow restrictions on the definition of a family farm, but the concept of family ownership and labour could well be included.

“The essence of the family farm is not in its capacity to make money but its capacity to connect the people with the land...” (Wendell Berry cited in Gow, 1992, p. 2).

Thus the concept of the family farm extends far beyond the bounds of ownership and labour of the farm. It involves the two overlapping systems of family and enterprise. Rosenblatt (1990) suggested that the following definition was more appropriate,

“The family farming operation can be seen as involving two overlapping but different systems. One of the two overlapping systems is the family, involving family relationships, family history, family myths, loyalties, rules, obligations, rituals, expectations, feelings about family matters and shared experiences. The other overlapping system is the enterprise involving economic choices, decisions and actions” (Rosenblatt, 1990, p. 27).

Strange (1988) observed a transformation in American agriculture from small-scale, broad-based family farming, to large-scale, industrial farming. Bryant (1991) found that in a contemporary analysis of agriculture in Australia the trend was also towards larger more efficient farms. Fairweather (1992), found that in New Zealand, between 1972 and 1990, the number of farms in the mid-size range (40-400 ha) was decreasing, resulting in a decline in the total number of farms. As of June 1990, 57% of all farms in New Zealand were producing 95% of the estimated value of agricultural output. In short, the agricultural economies of Australia and New Zealand have been restructured in favour of transitional agribusiness, through policies of deregulation and the introduction of new technologies to increase the efficiency of agricultural production, with the result that smaller farms have become increasingly marginalised. Ruth Gasson (cited in Gow, 1992) suggested that while the average size of farms in Britain has been increasing over the past forty years most are still family businesses in the sense that:

- a) the principals are related by kinship or marriage
- b) business ownership is usually combined with managerial control, and
- c) control is passed from one generation to another within the same family.

The strength of family farming is seen to be in its ability to adapt. For example, Fairweather (1992) found that family labour on farms increased between 1984 and 1990 and paid labour decreased, but total employment dropped only one percent, with the major change being a dramatic increase in the number of women in agriculture. Through family adaptability, the family farm may survive through self exploitation. Farming families can reduce their expenses and operations. Lifestyle thus plays a big role in the family farm; it is not just maximisation of profits. McLean (1995b) found evidence suggesting that New Zealand farmers have rarely made any fundamental changes to their land-use systems but have continued to specialise. By comparison, in America, Strange (1992) found that more people working on the land have little or no hope of owning it, and those who own the land often have no desire, or need, to farm for a living. This is, in-effect, a separation of the people from the land, and of ownership from work. Thus, many who actually farm have little long-term interest in conserving the land for future generations. Family farming in New Zealand is different in that it seeks to conserve the resource as the owner-operators maintain an 'interest' in the land.

Strange (in Gow, 1992, p.4) suggests that the term "family farming" eludes definition, but that it does have a commonly understood cultural meaning, particularly when it is used to describe a system of agriculture, rather than to categorise individual farms, as the definitions used in America and Britain do. He defines the family farming system as one which tends to be:

Owner operated:	Owners goal is to own farm assets.
Entrepreneurial:	Management decisions made by farmer. Internally financed plus use of debt. Ideally the system enables the farmer to pay for the farm from farming income alone.
Dispersed:	Ownership is widespread. Many farms of similar size.

Diversified:	Diversed cropping patterns ensure year round use of labour, full land use and reduced dependence on single market for income.
Perfect competitor:	At equal advantage in open markets.
Family centred:	Relies on family management and labour skills.
Technologically progressive:	Uses technology to reduce costs and lighten labour load.
Resource conserving:	Tolerates resource ruin only as a short term survival strategy.
Way of life:	Not just a business.

Farming in New Zealand could virtually be defined as a closed occupation, due to the high costs of entry. Fairweather (1992) found that purchase of farmland by business people has declined recently, and existing-farmer purchases have increased in number. Symes (1990) also found that the role of the family has become more, rather than less, influential, especially on larger farms. This factor, combined with the previous definition of family farming, suggests that the family farm is becoming increasingly well organised, is using family labour to a greater extent, and will continue to play an important role in New Zealand society.

The continuing importance of the family farm is therefore in no doubt, but the process by which the farm is handed from one generation to another often poses many problems to the farming family. It is likely that the aspirations and goals of the different members present within a farm family will pull ever more strongly in different directions, putting the principle of continuity at risk. The days in which the eldest son automatically got the farm are over. Now daughters and other sons must be considered. Farmers are increasingly realising that the children have to be treated equitably. McLean (1995a) reported that about 75% of farming families want to treat all of their children equitably. This, however poses new problems for farm succession. The simplicity of the old transfer mechanism has been replaced by a more complicated, unbiased system, as the courts increasingly recognise the rights of children to be treated fairly under the Family Protection Act (1955) (Averill, 1995). This, coupled with the 'cash flow' problems of treating family members equitably, has created difficulties that must be planned for.

Retirement and succession are part of the same process. With family succession, as with retirement, there is often no clear dividing line. It occurs as the resources, the rights, and the obligations of the farm are passed on. The process of farm succession involves the gradual passing on of labour, management decisions, financial control, occupation, and ownership of the farm (Eaton, 1993). Retirement may be considered to occur at the point the successor takes full control. Succession and retirement may thus be seen as a continuous or multi phase-process, beginning with a gradual assumption of specific responsibilities within the farm business (Symes, 1990). When handing on the family farm, farmers face two unavoidable problems - the necessity to provide for eventual retirement, and the necessity to provide for the non-farming family members (Thwaites, 1995). Thus, succession and inheritance may involve one or more persons as beneficiaries, sometimes, but not always, causing complications when succession and inheritance do not follow identical paths. Examples of this are where multiple succession is associated with legal inheritance of the land by only one person or, conversely, where the land is divided at the time of inheritance between two or more persons, of whom only one is committed to running the farm business (Symes, 1990).

Clearly, patterns of succession and inheritance relate to the timing of other life-cycle events. Ideally, succession and inheritance should be logical and progressive processes placing the successor generation in a position of responsibility and control at a reasonably young age. McLean (1995a) reported that over the last 20 years farmers have been dealing with increasingly larger assets. The problem is that, while the assets are large (in real money terms), the farmers themselves are more often than not cash-poor, making it increasingly hard to divide the total asset equitably without leaving the successor with heavy liabilities. The methods and processes used to pass a farm on from one generation to another may thus have serious repercussions on the viability of individual businesses.

2.2 The criteria for a successful process of intergeneration transfer of farm assets

There are many vehicles for successful succession planning of which each has advantages and disadvantages, and there is no straightforward answer to planning the intergeneration transfer of farm assets. This, coupled with the fact that no two farms and farm families are the same, makes succession planning an extremely complex subject which cannot be completely covered by this report. The eternal dilemma in farm succession planning is that the outgoing generation wants to take out of the farm sufficient capital for support in their old age, while the young generation is conscious of the sharp rises and falls in farm income and the danger of carrying too much debt (Helmore, MacDonald and Stanley, 1995). Consequently, farmers often delay succession planning because many of the business structures involved in passing the farm to the next generation are complex (McLean, 1995c). Effective advance planning can, however, give confidence and security and thus help to preserve harmony within the farm household.

Many farmers, however, leave consideration of succession and inheritance too late, and find themselves facing difficult decisions at a time when the options are much reduced. This results in confusion, uncertainty, suspicion and disharmony, which cause deeply damaging divisions between the adult generations present on the farm (Symes, 1990).

There are many issues which impact upon the farmer's ability to hand on the family farm to the next generation, which Averill (1995) summarised as follows:

- the productivity of the farm and its ability to service more than one family,
- the number of children who wish to farm and those who don't,
- the family attitudes towards farming as a way of life,
- parents' attitude towards retirement on or off the farm,
- the parents' dependence on farming assets to provide a retirement home and income,

- human attitudes- such as of loss of control or concerns as to ability of next farming generation to cope,
- the level of debt and debt-servicing ability of the farm.

Obviously the more profitable the farming operation, the easier the handover becomes, and conversely, the smaller or less profitable the farming unit, the more difficult the transfer from one generation to the next. The farm capable of supporting only one family has the big task of generating enough income to pay out the other family members, service the borrowing necessary to procure the retirement home, plus any additional income required for the retired parents, and much depends on the off-farm needs, both of the parents and other non-farming siblings. Eaton (1993, p.2) made an interesting comparison between the urban and rural situations.

“At the time when urban parents see their children leaving home and making their own way in the world, farming parents may have the opposite with a child wanting to take over the family farm, wanting more control of a business that has been the parents life for decades, and possibly hinting they would rather like to move the oldies out of their home”.

The first challenge for the family farmer wishing to transfer the farm to the next generation is to ‘plan for retirement’. This is for two reasons. Firstly, in the past there has been a certain dependence upon the government to provide a retirement income, but, the country cannot afford to sustain the current level of social welfare payments. Secondly, the succeeding farmer needs the freedom and flexibility of not having to provide for the parents during retirement, out of the farm income (Preston¹). The expenses involved with retirement include, purchasing a residence purchase and providing for retirement income. There are some drawbacks in the traditional thinking about retirement income, especially the effects of ‘inflation’ and ‘capital drawdown’. If a capital fund is invested in fixed securities then the purchasing power of that fund, and the income it generates, may gradually be eroded by inflation. Furthermore, the ‘capital drawdown’ exacerbates this effect because

¹ This publication is not dated.

with inflation, the income demand gradually rises each year but the income does not, thus eroding the capital fund (Appendix 1).

The second challenge for the family farmer is to plan for divestment (succession and/or inheritance) of assets, which can occur either before death (estate plan) or after death (will). There are many methods available for succession planning, such as trusts, partnerships, companies, wills, gifting options, off-farm investment, and diversification (farm forestry), which have many combinations and applications that could be utilised to suit each individual case (Tavendale, 1995). There will always, however, be situations that impact on the farming scene which may be difficult, or even impossible, for the farmer to control: the weather and natural disasters, the volatility of overseas markets and the ability to access them, changes in direction of political thinking, taxation and exchange rates, and problems with the domestic economy. All these will have a bearing on how well the farmer is able to plan for the future (Preston).

Preston noted that a great majority of farmers face two basic difficulties in considering how a transfer of farming assets is to be achieved. Firstly, many lack the 'off-farm' or 'alternative' assets necessary for allocation to the non-farming children, because farming assets are generally between 60 and 95 % of a farming family's total assets. This, is of concern, because funds will be needed for the purchase of a retirement home, provision for retirement income, and capital needs away from the farm. The second difficulty is that farmers often possess wills which do not reflect the reality of their situations (Preston). Wills provide funds for reducing debt, provide an adequate level of financial independence for a widow, and allocate money to non-farming children in settlement of their proper claims on the farmer's bounty. Therefore, a will is a mechanism on which other farm succession planning tools depend (McLean 1995a), and must be kept up to date with proceedings in the succession cycle.

The importance of 'off-farm' or 'alternative' investments which can provide an income separate from the farm cannot be over-emphasised. They reduce the financial burden on the farm so that the unit is not required to perform beyond its reasonable

productive capacity or carry a debt-loading which is difficult to sustain. These investments can also ultimately provide a payment to the non-farming family members. Fairness, not necessarily equality, is what is expected under the Family Protection Act (Averill, 1995). Forestry is the primary reason for referring to 'alternative' rather than 'off-farm' investment as an area planted today is hardly part of the prospective profitability of the farm in the immediate future. On the other hand, if current projections are even modestly accurate, a small area planted in forestry today will provide a very substantial return in 30 years, and in the interim there are tax advantages to be obtained. Forestry is an ideal use of areas unsuitable for profitable grazing or cropping. The Registration of Forestry Rights Act (1983) allows rights to establish, maintain and harvest forestry which can be registered against the farm title by outside investors. Obviously this provides a basis upon which to secure the rights of non-farming family members, or to enter into a joint venture with outsiders (Thwaites, 1995).

Chapter 3

THE CONCEPT OF FARM FORESTRY IN NEW ZEALAND SOCIETY

Innumerable examples exist, in many parts of the world, of traditional land-use practices involving combined production of trees and other agricultural species on the same piece of land. In New Zealand, however, people who actively integrated farming and forestry were an exception. But now, with the forestry boom in full swing, there has been an increasing realisation by the farming industry that there are many benefits associated with having trees on farms.

Combining agriculture and forestry has become known as 'agroforestry', which is a new name for a set of old, well established practices. However, the word and concept of 'agroforestry', while gaining a fair level of acceptability, has created a lot of ambiguity and confusion over its actual definition. Even the people who were supposedly experienced and knowledgeable about agroforestry in the late 1970s and early 1980s were unable to clearly define agroforestry (Nair, 1993). In recent years, however, the definition proposed by the International Council for Research in Agroforestry (ICRAF) has gained wide acceptance (Nair, 1990). To reduce any further confusion, farm forestry is a branch of the broader more flexible term 'agroforestry'. This chapter aims to clearly define agroforestry, and by defining agroforestry we can discuss how it relates to New Zealand, how and where it is presently used, and its future direction.

3.1 Defining farm forestry in New Zealand

Agroforestry has been subject to many definitions over the last few decades. The ICRAF current definition is;

"Agroforestry is a collective name for land-use systems and practices in which woody perennials are deliberately integrated with crops and/or animals on the same land management unit. The integration can either be a spatial mixture or in temporal sequence. In Agroforestry systems there are both ecological and economical interactions between the different components" (Nair, 1990, p. 1).

Nair (1993) recognised eighteen different agroforestry practices, each with many variations. Agroforestry is viewed as a land-use system in which trees are sequentially or simultaneously integrated with crops and/or livestock with the intention of developing a more sustainable form of land-use that can improve farm productivity and ecological integrity (Leaky, 1996). It has been said by Nair (1993) that:

- agroforestry normally involves two or more species of plants (or plants and animals), at least one of which is a woody perennial,
- an agroforestry system always has two or more inputs,
- the cycle of an agroforestry system is always more than one year,
- even the simplest agroforestry system is more complex ecologically and economically, than a monocropping system.

It does need to be emphasised that the essence of agroforestry is the purposeful growing, or deliberate retention, of trees with crops and/or animals in interacting combinations for multiple products or benefits from the same management unit (see Figure 3.1).

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FIGURE 3.1 Classification of Agroforestry Systems based on type of components.
Agrisilviculture - crops (including shrubs and vines) and trees.
Silvopastoral - pasture/animals and trees (farm forestry).
Agrosilvopastoral - crops, pasture/animals and trees.

Source: Nair 1993 Pp 25.

Agroforestry in New Zealand is dominated by silvopastoral systems (pasture/animals and trees). The Ministry of Forestry have a current definition of 'plantation forestry' which includes shelterbelts and woodlots along with 'other benefits' such as soil and water protection, and shelter. Their definition is as follows:

"a forest crop, stand, woodlot or multi-tier shelterbelt initially established/raised either artificially by aerial seeding or planting, or through natural seed regeneration or coppicing following harvesting or a natural disaster, and which is managed for the commercial production of wood or forest products, but which may confer other benefits such as soil and water protection, shelter, wildlife habitats and recreational uses" (Ministry of Forestry, 1994a).

With this definition, perhaps the Ministry of Forestry is recognising the integral role farm forestry has to play in future 'sustainable' developments of both the forest and agricultural industries.

The need for soil conservation measures is widespread in New Zealand, and many researchers have recognised the value of trees for that reason. About 4 million hectares of New Zealand hill country have been converted from forest to pasture, and for large areas of this land erosion by mass movement is threatening the sustainability of pastoral farming. The effects of soil erosion are dramatic, according to Eyles and Newsome (1992), with pasture production decreasing by 30% on moderate slopes and 60% on steep slopes. They also found that another 3.4 million hectares, or 12% of New Zealand, is effected by wind erosion. Mead (1995) reported that 28% of New Zealand's land area requires significant soil conservation measures to minimise erosion.

Plantation forests cover approximately 1.4 million hectares (5%) of New Zealand's total land mass of 27 million hectares (Figure 3.2). Historically the conversion of indigenous forest to exotic plantations has been the centre of environmental forestry issues. This is now a rare occurrence, with most new plantings taking place on pastoral land, a trend that is expected to continue (Maclaren, 1995). Much of the focus has now turned to the environmental and economical viability of plantation forestry activities, when compared to traditional pastoral agriculture. Plantation

forests, moreover, are increasingly being considered as long-term crops that are complementary to pastoral farming (New Zealand Forest Owners Association *et al.*, 1994).

Pasture and arable land comprises 14.2 million hectares (52%) of New Zealand's land area, and so there is an opportunity for the expansion of the forestry sector (Figure 3.2), exemplified by the growth in popularity of farm woodlots and plantations. Presently, approximately 80% of new planting is undertaken by smaller investors such as farmers and private investment syndicates. Mead (1995) found that the combinations of farm forestry practiced depend upon the farming objectives, climatic limitations, soils, farm size, and perceived economics and benefits of the agroforestry operation, which result in strong regional differences in the approach taken. For example, single-row timberbelts are typical of central North Island farms where shelter is not a priority, and multi-row shelterbelts typical of the Canterbury region where shelter from the prevailing winds is almost essential.

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Source: New Zealand Forest Owners Association Inc., 1995, p. 2.

Agroforestry, or more specifically silvopastoralism, is seen in New Zealand, as a way of improving agricultural productivity and, in the longer term, increasing farm incomes from the sale of tree products (Mead, 1995). The increased productivity comes from the reduction of site degradation, and from the improved microclimate for

animals and crops. The microclimate is created by the windbreak decreasing the wind velocity, and thus creating a protection zone to the leeward of the shelter. Sturrock (1988) further emphasised these benefits by suggesting that shelter has an impressive number of roles to play (Table 3.1), many of which are performed concurrently. He felt that the multi-functional role of shelter could be exploited more fully, especially in the use of shelter to improve irrigation efficiency, and also to produce an ultimate timber crop. These are especially relevant because resources of water and timber are becoming increasingly scarce and expensive world wide. Some functional roles of shelter (Sturrock, 1988, p.2) are:

- protecting soils, crops and livestock,
- conserving soil moisture/improving irrigation efficiency,
- increasing farm management options: flexibility and diversification of enterprise,
- improving working conditions and general efficiency of wind dependent farm operations,
- providing fuel from wood,
- producing timber for farm use or sale,
- conserving wildlife and other ecological values,
- enhancing landscape values,
- improving capital values.

3.1.1 Shelter and farm crops

Wind erosion is a problem in many parts of New Zealand. With the constantly improving knowledge of shelter, the use of windbreaks to protect agricultural fields is becoming increasingly popular. It must be noted, however, that the effects of shelterbelts on crops can be both advantageous and disadvantageous. The greatest benefits from the use of windbreaks occur in areas with winter snow and hot, dry, windy summers such as Canterbury. Shelter benefits develop gradually, growing with the trees, so that there is no sudden change after creating new plantations (Caborn, 1965). Gradually, as the trees grow, the vertical transport of heat is reduced and humidity is increased to the leeward of the windbreak which generally reduces evapotranspiration (Nair, 1993). There are also several other ways in which the

presence of shelterbelts alters crop production - land requirements, competition for moisture and nutrients, microclimate, and allelopathic effects.

Timber shelterbelts require land for their establishment which reduces the area available to plant in crops (Kort, 1988). However, the loss of production due to land loss and competition is more than offset by the increased production (Figure 3.3) for the entire crop (Caborn, 1965). Competition effects are restricted to the area where both shelter and crop root-systems compete within the same space. Other effects are shading, moisture drip from the trees, leaf fall, and allelopathic effects, all of which usually occur within a space equal to one height of the shelterbelt (Caborn, 1965; Kort, 1988). One major disadvantage is that weeds can flourish in shelterbelts and spread to adjacent fields, as weed control is more difficult in the plantation zone. Also wind dispersed seeds, particularly thistle, tend to collect near shelterbelts.

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FIGURE 3.3 Average effect of windbreaks on crop yields, U.S.A.

Source: Caborn, 1965, p. 76

The microclimate effect is due to the protection from hot, drying winds during critical stages of the growing season, reduction in the evaporation rates due to lower surface wind velocities, reduction in the evaporation of soil moisture, reduction in crop

damage by storms, reduction in injury to young seedlings by blown soil or through uprooting, and to the earlier warming up of sheltered soils (Caborn, 1965; Stringer, 1977). On a typical (no irrigation) pastoral farm in Canterbury, dry matter yields at 3-5 tree heights from the shelterbelt have been shown to be 48-66 % greater than those at 12 tree heights (Tombleson, 1986). Pollinating insects have also been observed to be more active when protected from boisterous conditions.

Windbreaks are used worldwide to check or prevent soil erosion, but they are not the only solution. Various cultural measures can reduce the erodibility of the soil: surface cultivation to replace ploughing, strip cropping, the maintenance of a trash cover or stubble on fallow (Caborn, 1965). Shelterbelts do, however, provide a second line of defence by breaking the force of eroding winds over a considerable distance. Because of the greater range of protection, and the small chance of harmful eddying (Figure 3.4), the less dense shelterbelt (40-50% porosity) (Figure 3.5 and 3.6) is preferred for protecting field crops and sheltering a reasonable area of land. The method used to manage a shelterbelt depends upon the desired shelter effect and end use for the timber. Figure 3.7 shows how different management regimes for timber production manipulate the porosity of the shelter.

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FIGURE 3.4 Diagrammatic representation of windflow through a permeable barrier (top) and an impermeable barrier (below).

Source: Mortimer and Mortimer, 1984, p. 54.

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FIGURE 3.5 Distribution of zones of shelter at ground level, expressed as a percentage of the wind velocity in the open. h -sheltered height. **A**- zones of shelter for an impermeable barrier. **B**- zones of shelter for a permeable barrier.

Source: Mortimer and Mortimer 1984 Pp 55.

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FIGURE 3.6 Patterns of wind reduction in the vicinity of shelterbelts of different density.

Source: Caborn, 1965, p. 33.

FIGURE 3.7 The management of shelterbelts for timber.

3.1.2 Shelter and irrigation

Water is recognised as the most important factor limiting crop production. This, combined with the fact that water resources are becoming increasingly scarce, has encouraged a resurgence of interest in irrigation. In the U.S.A it was found that irrigation accounted for 80-85% of all water used in agriculture, with on-farm efficiencies estimated in the range of 10-40% (English, 1984). In New Zealand, water

availability limits pasture and crop production more than any other factor, and therefore various measures are being advocated to improve utilisation efficiencies. Combining shelter with irrigation can produce complementary or synergistic, effects with significant potential water savings. Both Flemer (1974) and Bayoumi (1976) illustrated the economic potential of shelterbelts on crops. Sturrock (1988) summarised their findings by suggesting that shelter effectively increases the efficiency of an irrigation system due to the decreased evaporation upon application of the water, and it also decreases evapotranspiration by the plants. Thus the irrigator is able to irrigate a larger area of land but still utilise the same amount of water that would have been used in a smaller, unsheltered block, thus achieving a dramatic water saving. Figures 3.4, 3.5 and 3.6 all show how the wind speed is affected, and thus how the rates of transpiration and evapotranspiration are reduced, behind the different types of shelterbelts.

3.1.3 Shelter and livestock

It is accepted that in cold weather an animal requires more nourishment to balance the considerable loss of heat (Holmes and Sykes, 1984). With the provision of adequate shelter, it is possible to reduce the metabolic requirements of cattle and sheep which results in a better utilisation of feed intake (Caborn 1965). Stock decline rapidly in the cold because the feed, which would otherwise support body growth and metabolism, is used to maintain body temperature. In Montana, U.S.A., it was found that a herd of cattle protected by a tree and shrub plantation gained 39.4lb per head more during a mild winter and lost 10.6lb less per head in a severe winter than a herd on a more open feedlot (Caborn, 1965). A further example is the farm of P.W.Smail, on the Canterbury plains, which suffers from extreme weather conditions. When Mr Smail started farming in the 1950's there were 1200 livestock units. With the development of shelterbelts, which were interconnected with woodlots, the stock units increased to over 5000 (Sturrock, 1988), as well as developing a valuable timber resource. Thus, shelter enables the available feed to go further, either in terms of bigger weight increases or allowing heavier stocking rates, which results in increased production.

Food and shelter go hand in hand; scarcity or lack of one or the other leads to the same disastrous result. Over a long spell of bad weather shelter without food is of little value, although it does decrease the metabolic requirements of the stock, which in turn means a decrease in energy consumption and an increased period of survival. During times of severe bad weather, therefore, the farmer's supply of supplementary feed will last longer, thus maintaining the condition of the animals for a longer period of time.

Winds at low temperatures, the wind-chill factor, can prove disastrous. The ability of an animal to insulate itself may be inadequate at certain times, for example a newly born lamb or a freshly shorn sheep (Holmes and Sykes, 1984), therefore it is important to provide shelter for animals to reduce the wind-chill factor.

Sheltered patches attract the stock and are thus grazed intensively and manured heavily. This is often referred to as 'camping', which induces more protein-rich grasses (Caborn, 1965). Hedges, because of their density and reduced height, are inefficient forms of shelter. Because of the limited area of shelter they provide, stock congregate in the small sheltered area (for shade in the summer and warmth in the winter), which compounds the problem of nutrient transfer and soil compaction. Taller, more porous shelter provides a larger area of protection for the stock and reduces this problem (Stringer, 1977). Snow-falls can build up behind shelterbelts that are too dense and stock sheltering behind these belts may be trapped in snow drifts and suffocate (Holmes and Sykes, 1984). A porous shelterbelt allows air movement to be maintained, the snow is not trapped in a pocket of cold still air, and the stock are able to maintain their mobility.

3.2 The future of farm forestry in succession planning

Chapter 2.2 discussed the importance of 'off-farm' or 'alternative' investments which can provide an income separate from that of the farm. Farm forestry shows real potential in this area as it can be used as a tool in succession planning, reducing the financial burden on the farm by producing an income for payment to the non-farming family members, providing an income for the retiring parents, or both. The previous

sections indicate that farm forestry may improve agricultural productivity and, in the longer term, increase farm incomes from the sale of the tree products. Mead (1995) noted that the development of intensively managed shelterbelts that provide high quality wood, in addition to the shelter benefits, has been particularly successful in New Zealand, creating an opportunity for farmers to plan for retirement and subsequent farm succession.

The key to farm investment has always been sensible diversification. In a market place with declining prices, which no longer have government subsidies or price support the New Zealand family farmer must look to alternative incomes (diversification) in order to fund retirement and successful farm succession. While the primary opportunity of farm forestry is 'alternative' income, also of great importance is the fact that both agriculture and natural resource management are under increasing pressures in New Zealand, through the Resource Management Act (1991), to implement practices that promote a land ethic which is environmentally sound. Farm forestry may be considered as a dynamic, ecologically based, natural resource management system which, through the integration of trees on a farm, diversifies and sustains small-holder production for increased social, economic, and environmental benefits (Leaky, 1996).

Chapter 4

INVESTMENT IN FARM FORESTRY AND LEGISLATION EFFECTING ITS UTILISATION

Small growers, until very recently, have been a minor part of New Zealand's plantation forestry landscape (Maclaren, 1993). The resurgence of the forestry industry, however, has encouraged farmers to include forestry in their farming operations. There is clear evidence of this growth in farm forestry, as small-forest ownership during April 1994 was nearly one quarter (24%) of New Zealand's planted production forests (Figure 4.1, Ministry of Forestry, 1994b), growing to 31% by February 1996 (Perley, 1996), which represents a significant shift in the forest ownership pattern. If this trend continues, within fifteen years half of New Zealand's planted production forests will be owned by small forest growers rather than major forestry companies. Increasingly, forestry is becoming an attractive investment, or alternative form of land-use and income for the farmer. This is because there have been some dramatic changes in the economics of forestry and farming operations in recent years. Export log prices, for example, rose dramatically in 1993 at the same time as returns from other forms of investment were falling (i.e, farm incomes from traditional forms of agriculture). This, together with amendments to the Income Tax Act in 1991 (which resulted in a neutral tax regime), has renewed interest in forestry investment as a form of superannuation or as an alternative land use (Ministry of Forestry, 1994a). Also, over the past decade, there has been the introduction of the Forestry Rights Registration Act (1983) which has made forestry a more flexible investment opportunity.

Many farmers are now realising the potential of farm forestry to promote 'sustainable agriculture' on a best-land-use basis. Farm forestry has therefore become a form of diversification which enables farmers to maximise the production of the land, according to its particular qualities and potential while utilising the skills and satisfying the wishes of the owner (Burdon and Miller, 1995). The 1990's saw the introduction of the Resource Management Act (1991), the New Zealand Forest Accord (1991), and the Forests Amendment Act (1993), as well as amendments to the

Income Tax Act (1991). These pieces of legislation, combined with appropriate forestry codes of practice and the Forestry Rights Registration Act (1983), will ensure that New Zealand farmers can develop farm forestry in a way that will benefit all parties in the intergeneration transfer of farm assets. This chapter will therefore discuss investment in forest growing, how and why it is different from most other forms of investment, and the legislation that effects the utilisation of farm forestry as a form of investment.

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FIGURE 4.1 Planted forest ownership. As at April, 1994.

Source: New Zealand Forest Owners Association Inc., 1995, p 5.

4.1 Farm forestry investment

If plantation forestry in New Zealand offers an income of 13 times its outgoings, why do farmers regard it as a poor investment? By conventional agricultural standards, plantation forestry is seen as not only a relatively new but also a very radical land-use (Sutton, 1991). This deep-seated view of plantation forestry stems partly from the fact that earlier land clearance (of native vegetation), for pastoral or arable cropping, has subsequently instilled in some farmers a reluctance to break from what has

become an established land-use pattern in which trees play little or no part. Thus, historically, farm forestry benefits were not very apparent as there was little or no understanding of shelter, silviculture, and marketing, and consequently their associated benefits have not been fully recognised (Sturrock, 1988). This has resulted in ineffective use of trees for shelter and investment.

Investment in forestry is very different from other traditional forms of investment in terms of the length of time the investment takes to mature, the greater market risks associated with this time-frame, and the early timing of expenses relative to obtaining a return. The Ministry of Forestry (1994a) summed up forestry investment with the following three points.

- Forest growing is a long term investment. Forest growers usually have to wait 25 to 30 years (longer for species other than *Pinus radiata*) before obtaining their return on investment. While it is now possible to exit early from forestry investment, there is often an associated exit cost.
- Most expense is incurred during the first 10 to 12 years of a crop. The amount and timing of early cash flows are vital, as without timely and effective tending, the final crop quality, and hence the return at harvesting, can be severely compromised.
- The long time frame associated with forestry investment means a greater likelihood of markets changing and substitution occurring than for other crops. Forests are also more exposed over these long rotations to biological and environmental risks and to government policy or taxation changes.

Not only is this kind of investment new, but there appear to be no other investment areas with a comparable pattern of expenditure and return. This absence of experience means that there is a poor understanding of the investment by the potential investors (farmers). However, farmers throughout New Zealand have the following means of sustaining a major expansion of the country's plantation resource:

- The need to diversify more away from traditional agricultural crops.
- The land, some of which is in urgent need in a shift of land use.

- The plantation now how and skills. New Zealand is at the forefront of forestry research.
- The capital, especially the need for long term investments for retirement/pension funds.
- A labour surplus.

Investment in farm forestry can be achieved in many ways, and van Rossen (1995) outlined the main types of investment structures that can be utilised for forestry projects. Those that could be used by farmers to aid in family farm succession are: individual ownership, forestry joint ventures, partnerships and qualifying companies. These, and family trusts, are discussed in depth in the following chapter.

4.2 Legislation effecting farm forestry

Forestry now competes for land with drystock farming because of increasing conservation pressures which limit the opportunities for forest operations in the 'natural' forests, and the fact that pasture and arable land (farmers) take up a large majority of New Zealand's available land (Figure 3.2). While many of the issues faced by those in the forestry sector are the same as for other commercial and agricultural activities, there are some concerns for the forestry industry (Nolan and Christensen, 1994) and thus the farm forester. The most important piece of resource legislation is the Resource Management Act (1991). This regulates the use of land, and has potentially wide-reaching effects on forestry. However, other legislation exists, such as the Forests Amendment Act (1993), Forestry Rights Registration Act (1983), and the Income Tax Amendments Act (1991), all of which may have a dramatic effect upon the utilisation of farm forestry in farm succession. This section (4.2) explores the implications of each of these acts on farm forestry when being utilised to aid in farm succession. A list of statutes relevant to forestry has been included in Appendix 2.

4.2.1 The Resource Management Act (1991)

The New Zealand forestry industry, along with all other sectors of the economy is now subject to the Resource Management Act (RMA), which came into effect on 1

October 1991. It has widespread implications for forestry activities. The growing, harvesting, transport, processing and distribution aspects of forestry are all now exposed to the regulations of the RMA. It is essential for all persons who undertake forestry operations to be familiar with the main features of the RMA. The Act provides the basis for environmentally sustainable forestry operations in New Zealand by providing a broad framework for the environmental regulation of industries. The key feature of the Act is that decisions about the appropriateness of a land use or industrial activity are not based on the nature of the industry, but only upon its environmental effects (Treeby, 1996). Its purpose is therefore to promote the sustainable management of natural and physical resources. Sustainable management is defined in the Act as:

“managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural wellbeing, and for their health and safety, while:

- *sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonable foreseeable needs of future generations,*
- *safeguarding the life-supporting capacity of air, water, soil and ecosystems,*
- *avoiding, remedying or mitigating any adverse effects of activities on the environment” (Resource Management Act, 1991, p. 21).*

Decisions now focus on results or ‘intended outcomes’ rather than on the regulation of resource use. The emphasis is now on controlling the effects of industry on the environment instead of controlling the activity itself. This provides incentive for resource users to devise efficient and creative ways of achieving good environmental standards, and gives local authorities greater flexibility in achieving environmental goals (Ministry of Forestry, 1995).

The Act sets out the responsibilities of Regional and District Councils with regard to land-use activities and their potential effects on the environment. The main interest of

a District Council in the activities of the small forest grower will usually relate to the effects of the development and use of the land (such as shading and visual effects), the services which that use may require (such as roading) and any subdivision activities. Regional Councils are interested in issues relating to the quality of water and air, soil conservation, natural hazards, and the coastal environment. The main methods used by councils to carry out these responsibilities are regional policy statements and plans, and district plans (Ministry of Forestry, 1995). District plans describe objectives, policies and methods which may avoid potential adverse effects from a land use activity and achieve sustainable management. The main way that district plans control impacts on the environment is by classifying activities according to their potential effects as follows:

- *permitted activity* - as of right,
- *controlled activity* - resource consent has to be applied for and will be granted,
- *discretionary activity* - require a resource consent which may be granted or refused,
- *non-complying activity* - a activity may contravene a rule in the plan, but may be allowed if a resource consent is obtained,
- *prohibited activity* - these activities are not allowed and no resource consent can be sought.

A resource consent must be applied for when a district or regional plan classifies an activity as controlled, discretionary or non-complying (Ministry of Forestry, 1995). Regional plans have a range of responsibilities under the Act, but the main areas which involve small-forest growers are: water management, controlling the discharge of contaminants into water and onto land, and land-disturbance activities (such as harvesting).

Despite its intention of streamlining procedures, the Act many cause greater delays and costs than previously encountered. The complexity of assessing plans and applications against the purpose and principles of the Act can be onerous, as can be the need for what may be quite extensive impact assessment material. One matter that

the Act does not explicitly provide for is the recognition of existing investment. This has implications for harvesting because the RMA does not provide for any certainty as to the right to harvest (Nolan and Christensen, 1994), thus increasing the risks involved with forestry investment.

4.2.2 The Forests Amendment Act (1993)

There are approximately 1 million hectares of privately owned indigenous forest in New Zealand, of which about 25% is capable of sustaining an ongoing production of a relatively small quantity of indigenous timber (Griffiths, 1995). The purpose of the Forests Act (1949), as amended by the Forests Amendment Act 1993, is to promote the long-term sustainability of indigenous forests by regulating their management for the production of timber and the maintenance of their natural values (Ministry of Forestry, 1993). The Act seeks to focus on three specific areas to achieve its purpose: export controls, sawmill controls, and provisions for sustainable management. This Act thus affects farm foresters who wish to harvest and sell timber from indigenous remnants on their property. It only allows such activities to take place under the provisions of an approved sustainable forest management plan. Enforcement is ensured by prohibiting mills from processing native timbers that cannot be shown to have been produced under such a plan (Treeby, 1996). The Act does not, however, prohibit landowners from felling indigenous forest on their land, unless subject to any required land-use consents under the RMA. A landowner (or farmer) is not prevented from converting land to other uses or cutting trees for firewood, providing the firewood is not cut by a mill or plant capable of producing sawn timber (Griffiths, 1995). To this extent the Act is not a land-use control. The primary land-use control in all situations is the RMA, which enables local authorities to set policies and notify plans governing the cutting of trees and clearing of vegetation. All land, even when managed in accordance with a sustainable forest management plan or permit, is subject to the RMA.

4.2.3 Forestry Rights Registration Act (1983)

The Forestry Rights Registration Act (1983) is a simple piece of legislation. The expression 'forestry right' is defined as the right to establish, maintain and harvest

trees (Ministry of Forestry, 1994). In essence, the Forestry Rights Registration Act separates ownership of standing forests from the ownership of the land on which it stands. Registration of a forestry right is very simple, as the Act allows the forest area to be defined on an aerial photo without the need for costly surveying. A 'forestry right' is created by registering a joint venture agreement (discussed in 5.1) against the 'title' of the land with a District Land Register under the Land Transfer Act (1952). The vehicle for doing this is termed a 'Memorandum of Transfer'. This registered document provides recorded security and specifies the basis upon which the parties have agreed to enter into the venture (Ministry of Forestry, 1994).

The creation of a forestry right has major ramifications, especially for farm forestry, for the following reasons:

- It gives asset-rich but cash-poor farmers the opportunity to attract investment capital for joint-venture forestry projects without having to mortgage the farm.
- It allows investors to take an interest in a growing forest without having the associated cost of land acquisition.
- It enables trading of partially grown and immature forests, thereby increasing the liquidity of investments in forestry.
- It allows farmers to use the right as collateral for bank loans.
- It is providing farm foresters with more flexible options in estate planning.

This tradeability of forestry rights has more significance when the value of the forest estate may exceed the value of the farm property, as is the case with many farm foresters whose plantings are approaching maturity.

4.3.4 Income Tax Amendment Act (1991)

Forestry taxation, as with most taxes, has been subject to many changes over the years. In 1984, the government introduced a tax regime unfavourable to forestry which resulted in a dramatic decline in new plantings. From 1 April 1991, more favourable taxation rules were implemented, with the majority of the expenses associated with the establishment of a forest becoming immediately deductible, and

many other expenses were also able to be depreciated in accordance with Schedule 13 of the Income Tax Act. This has resulted in a massive surge of new planting, with much of the impetus for this surge coming from small private investors (Blackburne, 1995; Purey-Cust and Hammond, 1995). Income from the sale of trees, on application by the farmer, may be spread for assessment purposes, retrospectively under section 81(A) of the Act. This means that for tax purposes the income may be spread over the year in which it was received and the preceding three years. This concession takes cognisance of the fact that trees take many years to grow and are likely to be felled in one or more years, when the accumulated income that might be derived could put the taxpayer in an unusually high income class. This concession is designed to help the investor (or farmer) who makes sales of timber at intervals over a period of years, and has no significance where a forest owner sells trees regularly and therefore has a steady income from timber. Amendments to the Income Tax Act in 1991 allowed forestry expenditure to be categorised into three distinct types.

- Capital expenditure that is never deducted or depreciated for tax purposes ie. land purchase/lease, stamp duty, legal fees, accounting fees, survey fees, valuation fees;
- Deductible expenditure, expenses that are deductible when incurred ie. all expenditure incurred in planting and maintaining trees is fully deductible in the year that it is incurred (section 74(15)); and
- Deferred deductions, expenses that are capitalised and depreciated, or deducted on the eventual sale of the timber. Only relevant to trees planted before 1 April 1991 (Blackburne, 1995).

With income from timber sales, Section 74(2) of the Act states that all profits or gains derived from the extraction, removal, or sale of timber, are assessable on a net profit basis. For this purpose, the sale of timber includes any disposition by way of licence or easement, or the sale of any right to future profits derived from the logging of the forest, or receipt of insurance proceeds (Blackburne, 1995).

Chapter 5

THE MECHANISMS WHICH ENABLE FARM FORESTRY TO BE UTILISED IN FARM SUCCESSION

Preceding chapters have defined farm succession and farm forestry, outlined the benefits of investment in such an activity, and legislation affecting its utilisation. This chapter discusses the mechanisms enabling the utilisation of farm forestry for the intergeneration transfer of farm assets. The main types of investment structures that can be utilised for forestry projects, as outlined by van Rossen (1995), are individual ownership, forestry joint ventures, partnerships and qualifying companies. All of these, with the help of other mechanisms such as the family trust, the various gifting options under the Estate and Gift Duties Amendment Act (1993), the Matrimonial Property Act (1976), the Wills Act (1837), and the Wills Amendment Act (1955), provide a variety of ways in which the intergeneration transfer of farm assets can be achieved. This chapter also discusses the advantages and disadvantages of the various 'mechanisms'. It is recognised that no two farms or families are the same, thus any number of mechanistic combinations can be used for planning farm succession using farm forestry, and it would be fruitless to endeavour to cover every possibility.

5.1 Forestry joint ventures

Forestry joint ventures have been becoming increasingly popular in recent years. They are not new, but the Forestry Rights Registration Act (1983) has simplified their use. Under this Act investors can enter into a joint venture agreement with a land owner to develop a forestry block, and this agreement may cover any or all of the rights to establish, manage, and harvest a forest. (Ministry of Forestry, 1994a). Joint ventures avoid expensive surveying and subdivision costs, and provide long-term project security by registering the agreement on the land title. The respective in-puts of the land owner and the investor are identified in the agreement and provision is normally made for sharing the income in proportion to each party's contribution. As the land owner and investor both contribute to growing the trees, both are entitled to a share of their harvest value, they also share the risks involved in growing the trees (Ministry of Forestry 1994a; van Rossen, 1995). The Ministry of Forestry (1994a)

outlined the following three key legal documents that are involved in a forestry joint venture.

- “A forestry right, which is the formal registration of rights using the Forestry Rights Registrations Act (1983). A Memorandum of Transfer is the ‘vehicle’ by which a right is registered under the Land Transfer Act (1952).
- A joint venture agreement, which embodies the agreement between land owner(s), and investor(s), including the specific responsibilities of the respective parties. This agreement can be included as part of the forestry right.
- A management plan, which describes the project and sets out its aims, objectives, and the various management operations. Generally the management plan is kept separate from the forestry right so that changes in management do not have to be registered through a Memorandum of Variation”.

It is important, however, to note that every joint venture is unique, as it depends on the agreement reached between the parties involved. A prominent feature of a joint venture is that the landowner retains the ownership of the land. It is not a form of leasing, as leasing provides the exclusive possession of a piece of land by the lessee for a set time-period (Ministry of Forestry, 1994a). This system has a number of advantages for farm succession, which are listed below.

- It allows the ‘asset rich’ farmer to provide the land and a ‘cash-rich’ investor to provide the finance.
- It is a way for the incoming generation to gain a ‘monetary’ interest in the farm in order to build up capital, or conversely, it is a way for the outgoing generation to maintain an income by maintaining cutting rights.
- It allows a forestry rotation to be started with minimal capital outlay for the farmer.
- It allows the farmer to continue to farm in the traditional manner but utilise the land on a ‘best land-use’ basis (Often farmers do not take up forestry because they want to be farmers not foresters and a joint venture allows another party to do the work for the benefit of both).
- By utilising a forestry joint-venture the exclusive possession of the land is retained, thus keeping the family farm intact.
- The risks of growing trees are shared between two parties.

However with advantages there are always disadvantages and they are as follows;

- As the land owner and investor both contribute to growing the trees, both are entitled to a share of their harvest value, so the farmer has a smaller return than that obtained under individual ownership.
- Stamp Duty is charged by the Inland Revenue Department, and is based on an assessment of the duty payable, not just on the land value but also on the estimated value of the trees that are growing or are planned to be grown on the land. As the value of the trees is generally much greater than the land on which they are grown, a large amount of Stamp Duty is required to be payed.
- Before a joint venture is registered against the title, consent is required from any mortgagee who holds a mortgage against the property.

5.2 Partnerships

The main principles of the law of partnerships were codified by the Partnership Act (1908). The definition of a partner is a person who has entered into a partnership, i.e, a relationship which exists between persons 'carrying on a business in common with a view to profit'. There are three essential elements, according to New Zealand law, without which no partnership can exist. There must be a business, carried on with a view to profit, by or on behalf of the partners (Webb and Webb, 1987). There possible terms of a partnership, but its creation almost invariably involves the simple transfer of an interest in the farming assets (including or excluding farm land) to another family member, or members, with assets held in the shares set out in the partnership agreement (Tavendale, 1995). The profits or losses are usually shared in the same proportions. Security is provided through a legal contract, and under the current taxation regime each partner qualifies for deductibility and depreciation provisions. In this investment structure, the investors face unlimited liability in the venture (van Rossen, 1995). Partnerships have some advantages for family farm succession utilising a forestry operation. Tavendale (1995) listed them as bellow.

- A partnership enables the farm to be handed on in stages.
- The financial arrangements upon creation of a partnership are entirely flexible.

- All family members can be included in the partnership and if there are young children a trust can be a silent partner for those children.
- If a property can not be satisfactorily subdivided, a partnership may enable it to support more than one family of the same generation.
- Taxation advantages can be achieved by the spreading of income.

5.3 Companies

Qualifying companies can be used as an investment vehicle for up to five investors and their immediate family members. A major advantage of a qualifying company, over direct investment through a partnership, is that shares in a qualifying company can be transferred without triggering tax liabilities on the underlying forest and farm interest, and that there may also be protection for shareholders from liabilities arising against a partnership (van Rossen, 1995). Although the cost of setting up a qualifying company can be quite high, it has a number of advantages when compared with other forms of ownership. Goodman (1995) outlined them as follows.

- The company has an 'indefinite' lifespan and consequently the farm can remain in the same company's ownership through several generations (refer to s15 Companies Act (1993)).
- The transfer of effective ownership, by the transfer of shares in the company is a much simpler and less costly process than the transfer of the farm itself.
- By the use of preferential and ordinary shares, complete control of the company (and consequently the farm) can be retained, even if beneficial ownership is held by others. This is difficult, if not impossible to achieve with a trust or with partnership ownership.
- On 1 July 1994, the Companies Act (1993) was enacted, effecting significant changes to the ways in which farming companies could be run. The awkward situation in which a family member may wish to quit his or her shares in the farming company, but no other family member can afford to purchase those shares, was addressed. One effect of the changes is that the company itself may now purchase, and thus cancel, the shares (under s58), or alternatively, provide finance to enable one or more other family members to purchase them (s76).

The company, therefore, must be given every consideration as a method of handing on the family farm, especially if multiple ownership cannot be avoided.

5.4 Trusts

The family trust has, for many years, been the common vehicle for handing on the family farm. Despite the frequent application of a trust to the family farm situation, however, Tavendale (1995) reported that the concept of a trust is often misunderstood. The modern trust has many uses, particularly:

- to tie up a property so that successive generations may enjoy it,
- to enable property to be held by two or more persons although the legal title is in the name of one person only,
- to make secret provision for dependents and others,
- to enable property to be held for persons who cannot themselves hold it, for example, children). (Maxton, 1985).

There are many types of trusts and the ones useful for farm succession all come under the heading of private trusts. A private trust is to “benefit private individuals who are able to enforce the trusts themselves with an aim to benefit either one particular or a defined number of persons” (Maxton, 1985). This type of trust is effectively a separate entity administered by trustees and capable of holding assets as capital, and the income produced from that capital is used for the benefit of the trust’s beneficiaries. A trust is formed when all or part of the farming assets are transferred by the ‘settlor’ (the farmer) to trustees (one of whom may be the farmer) who hold the assets for the beneficiaries (Tavendale, 1995). The trust can be one of the following.

- **Fixed trust** - On the creation of a fixed trust the number of beneficiaries, and each person’s share in the trust property, is precisely ascertained. From that time on each beneficiary has an equitable interest in the property, and is able to enforce his/her right there-to.

- *Discretionary trust* - Under a discretionary trust, the trustees are at liberty to determine who the beneficiaries are, and/or the size of their shares. Until they exercise their discretion, the potential beneficiaries have no rights in the trust property itself, only rights to be considered as potential recipients.
- *Express private trust* - This type of trust is created by transfer, declaration, or will (Maxton, 1985).

Discretionary trusts are currently the most common. With these trusts the settlor and/or the trustees can decide, from time to time, to which beneficiaries the capital and income are to be distributed or paid, with the beneficiaries normally being the farmer's spouse, children, grand-children, or a trust in which any of these are beneficiaries. The advantage of this is that the decision as to the ultimate distribution of the trust assets can be made whenever appropriate. The major advantage of a trust, however, is that some asset protection is achieved because assets held by a trust cannot be claimed under the Family Protection Act (1955) or the Matrimonial Property Act (1976). Another major benefit of a trust is that its discretionary nature provides flexibility, thus making future decisions less difficult. Of secondary importance are the taxation advantages which can be achieved by spreading the income between the beneficiaries (Tavendale, 1995). A summary of the important aspects of a trust follows.

- A trust is a fiduciary (a person bound to act for another's benefit) relationship which requires;
 - a) A trustee who has control of the property (equitable duties imposed to deal with the property for the benefit of the beneficiaries).
 - b) Trust Property. The relationship concerns property, it does not merely involve personal duties (equitable interest in the property).
 - c) A beneficiary or beneficiaries. These are the person(s) for whose benefit the trust is managed by the trustee(s). The trustee may be a beneficiary.
- A trust arises as a result of a manifestation to create it. The creator of a trust is generally known as the settlor. A settlor may constitute him/herself a trustee, and

also be a beneficiary of the trust but cannot be the sole beneficiary and trustee in which case the trust is extinguished.

- It is apparent from the foregoing that there are different types or classifications of trusts, which although they share certain common characteristics, differ in other respects.
- A trust will survive the death of a trustee, settlor or beneficiary.

5.5 Various gifting options

The Matrimonial Property Act (1976) and the Estate and Gift Duties Act (1993) both provide gifting options for the intergeneration transfer of the family farm and its forestry operation. The Estate and Gift Duties Act (1993) defined a gift as follows:

“Gift means any disposition of property, wherever and howsoever made, otherwise than by will, without fully adequate consideration in money or money’s worth passing to the person making the disposition. Provided that where the consideration in money or money’s worth is inadequate, the disposition shall be deemed to be a gift to the extent of that inadequacy only”.

The Wills Amendment Act (1955) has been excluded from the definition of ‘gifting’ but it does play an important role in the intergeneration transfer of farm assets. The following subsections will discuss the mechanisms of transfer.

5.5.1 Matrimonial Property Act (1976)

The principal New Zealand legislation on the division of property belonging to married or formerly married persons is the Matrimonial Property Act (1976). The Act does not generally affect ownership or dealings with property until an application for division is made under the Act. However, the Act operates in several ways while the parties are still living together with no intention of separating.

The Matrimonial Property Act (1976) was introduced to reform the law of matrimonial property. It seeks to recognise the equal contribution of husband and wife to the marriage partnership; to provide for a just division of the matrimonial property between the spouses when their marriage ends by separation or divorce, *and in*

certain other circumstances, while taking account of the interests of any children of their marriage; and to reaffirm the legal standing of married women. The above-mentioned '*certain other circumstances*' allows the Act to operate in several ways while the parties are still living together with no intention of separating (The Butterworth Group, 1993a). The recognition of marriage as a partnership of equals means that the courts should be willing to divide property even while the partnership is still in existence. It is possible to avoid the usual rules relating to matrimonial property by entering into an agreement under the provisions of the Act. For example, section 21(3) of the Act (Power to make Agreements) states that the parties to a marriage may wish to enter into an agreement which provides for the division of some or all of the matrimonial property, much in accordance with the rules the court would have to apply on an ordinary application under the Act. Such an agreement could lead to considerable tax advantages through income splitting and avoidance of gift and estate duty. The transferred property must not, however, exceed 50% of the total matrimonial property belonging to both spouses, as any excess would count as a gift and be taxed accordingly (The Butterworth Group, 1993b).

This act can be useful to farmers in some circumstances. If the farm is owned in the sole name of the husband, it is usually a very simple matter for the property to be split between the husband and wife by agreement under the Act. This has the effect of doubling the platform from which duty-free gifts can be made. As handing on the family farm inevitably involves gifting to some extent, this step can be very important (Tavendale, 1995).

5.5.2 Estate and Gift Duties Amendment Act (1993)

The Estate and Gift Duties Act (1993) affects the intergeneration transfer of farm assets through the rate of 'gift duty' ('gift' is defined on p. 43). Section 62 of the Act states that gift duty shall be charged and assessed, on each dutiable gift, in accordance with the following formula:

$$a/b \times c$$

- Where a is the volume of the dutiable gift
 b is the value of the dutiable gift
 c is the amount of gift duty payable on item 'b' at the rate set out in the third schedule of this Act.

The rates of gift duty are set out in the third schedule of the Act as in Table 5.1.

VALUE OF ITEM 'b' IN SECTION 62 (\$)		RATE NOTE: Excess - excess of the value in complete dollars.
Exceeding	Not Exceeding	
-	27,000	Nil
27,000	36,000	5% on excess over \$36,000
36,000	54,000	\$450 plus 10% of excess over \$54,000
54,000	72,000	\$2,250 plus 20% of excess over \$54,000
72,000	-	\$5,850 plus 25% of excess over \$72,000

TABLE 5.1 Rates of Gift Duty.

SOURCE: Estate and Gift Duty Act (1993). Third Schedule.

This Act also states that (s75A(5)):

“Any disposition of property by or pursuant to any order of the court under section 25 of the Matrimonial Property Act (1976) shall not constitute a gift to the extent that the disposition is to a spouse or former spouse or is solely for the benefit of minor or dependent children of the marriage” (Estate and Gift Duties Amendment Act, 1993).

This Act therefore affects the rate at which farm assets can be gifted (if the farmer is trying to avoid paying duty) to the in-coming generation. Since, under s75A(5), a division of matrimonial property does not constitute a 'gift' this allows a double platform of gifting to occur, thus speeding up the process of intergeneration transfer.

5.5.3 Wills Amendment Act (1955)

A will is a document executed in a prescribed form evidencing the intentions of the testator (the outgoing farming generation) to take effect upon death. Until the time of death, the will may be revoked or altered, and the beneficiaries have no interest in the testator's property. Although a testator may execute a will disposing of his or her property in any way he or she sees fit, statutory provisions may operate to curtail such

apparent testamentary freedom. The Family Protection Act (1955) and the Law Reform (Testamentary Promises) Act (1949) provide the means whereby a will may be recast into a socially more desirable form should the testator have failed to deal adequately with his/her responsibilities (Maxton, 1985). It is important, therefore, for the testator to have a complete and thorough will in order to avoid such complications.

Wills have the advantage at present, of not being subject to the Estate and Gift Duties Amendment Act (1993), as 'Death Duty' has been abolished. However, due to the differing opinions of the major parties in central government, it is advisable to protect the family assets (for the long-term) against the possible reinstatement of death duty, which could effectively place a duty of perhaps 20-25% on the value of an estate. In today's economic climate this could be disastrous for many family farms. The major disadvantage of a will is that the incoming generation has no 'interest' in the testator's property, and thus does not have any control over either the financial or managerial aspects of the farming operation until the death of the testator.

Chapter 6

EXAMPLES OF HOW FARM FORESTRY CAN BE UTILISED FOR THE INTERGENERATION TRANSFER OF FARM ASSETS

The Farm Forestry Conference held in Nelson, April 15-19, 1996, provided an opportunity to meet farmers who have successfully utilised farm forestry in farm succession. A short questionnaire (see Appendix 3) was sent to each of the selected farmers to gain a better understanding of how they utilised farm forestry in farm succession, and to determine what mechanisms they had used to achieve the desired outcomes, and what benefits they had obtained by utilising such an approach. This chapter discusses these selected examples. The farmers' and farm names have been with-held, and only broad regional descriptions used. The intention of this chapter is to show how investment in farm forestry can promote 'sustainable' agriculture, both economically and ecologically, and provide a successful platform for the intergeneration transfer of farm assets.

6.1 Study-farm one

'Study-farm one' is a sheep and beef operation located in the Wairarapa, North Island. This 720 hectare property is owned jointly by a children's trust and a partnership (consisting of the retiring parents), and is on steep, sloping hill-country, with a highly erodible soil type. The stock numbers are as follows:

4,000 breeding ewes	120 cows
1,200 ewe hoggets	30 yearling heifers
100 rams (including 50 studs)	25 two year heifers

In addition to the sheep and beef operations, the farm has 161 hectares of farm forestry. This farm forestry operation started out as conservation plantings, but since 1968 the trees have been intensively tended to provide for high-quality end uses. While conservation still has the highest priority for this operation, the diversification and security (able to be sold when returns from sheep and beef are low) which it has bought to the farming operation has been welcomed. The new plantings are now planned on a best land-use basis to improve the efficiency of the whole farming

operation, with such benefits as increased shelter resulting in improved grazing and animal weight gains. The species utilised so far are:

<i>Pinus radiata</i>	155 ha
<i>Acacia melanoxylon</i>	3 ha
<i>Eucalyptus regnans</i>	3 ha
<i>Salix matsudana</i> and <i>Populus</i> sp.(various hybrids)	Sparse planting over at least 400 ha for soil conservation.

The mechanisms utilised for farm succession were a children's trust and a joint venture partnership. The farm was sold, in two sales, to a children's trust in 1979, with 55 ha of mixed-age forest being retained by the retiring parents. The 55 ha of forest provided the retiring parents with some security with which to meet unexpected cash demands. The trees were sold, in 1991, to a joint-venture partner for \$385,000 (before tax). Without this ability to sell the trees the family could have been required to sell a considerable land area. Also, an extra 100 ha planted in trees is under joint ownership, with the children's trust as one partner (holding a two-thirds share) and a partnership consisting of the retiring parents (holding a one-third share), as the other partner. The trust has the larger share so that it can easily operate separately. The mechanisms utilised in the succession planning provided many benefits to both the out-going and in-coming generations. The joint venture has given flexibility to the operation, and the children's trust is able to operate independently, and fund its own thinning and pruning. The result is absolute flexibility, with farm succession able to be achieved very rapidly by the trust assets being given to one child and the trees to the other.

6.2 Study-farm two

'Study-farm two' is a 613 ha coastal hill-country sheep and beef operation, located on the East Coast, Wairarapa, North Island. The farm was purchased from the retiring parents by a matrimonial partnership, in 1985, taking the farm into the third generation. A brief history of the ownership follows.

- 1952: The first generation and second generation formed a partnership.
- 1963: First generation died leaving the farm to the partnership (second generation).

- 1985: Farm sold to third generation (son).

The stock numbers are as follows:

2400 ewes	105 M.A breeding cows
1070 hoggets	30 two year heifers
35 rams	30 mixed sex weaners
	5 bulls

In conjunction with this sheep and beef operation the farm has 60.2 ha of plantation forestry. To date the species used are as follows (the areas of each species are not known, but the plantings are dominated by *Pinus radiata*):

Pinus radiata
Cupressus macrocarpa
Eucalyptus viminalis
Pseudotsuga menziesii
Cedrus deodara
Populus sp.

The first generation planted trees for shelter and beautification, and soon realised the value of trees for timber, posts and battens. In 1933 *Populus* sp. were used in conservation plantings along creek beds. The plantations are now based on a best land-use basis with production forestry in mind. The plantations have proved to be extremely beneficial to this farm, giving a better economic return from hard-hill country than the sheep and beef operation.

The forestry is an integral part of the whole farm operation, and is proving to be very beneficial in the intergeneration transfer of farm assets. The legal framework consisted of a children's trust (which owned a second farm), a partnership, and the registration of a forestry right. In 1952 the second generation took over the ownership in a partnership situation. Over the next 22 years an annual income of \$100,000 was obtained by farming, and selling trees. Because of the extra income from trees, the third generation were able to be sent to boarding school, and the surplus was used to invest in town flats. After a period of 10-12 years these flats were sold, providing \$150,000, to purchase a retirement home. The second generation retired (in 1985) and sold the farm to their second son (third generation).

Because money was not needed to buy a retirement home, a loan was raised on the farm and the money lent to the eldest son (third generation) to help him buy his own farm. Income for the parents (second generation) comes from interest on loans left on the two farms. A third son was also lent some money to buy a small farm. A fourth son was given \$108,000 to help buy his own home, and the only daughter was given \$120,000 to help her husband into business. A lot of this extra capital was provided by selling the small farm owned by the trust.

In 1993-4 30 ha of trees were sold for \$424,280 (net), and most of this money was invested with the intention of leaving the estate to the original discretionary trust so that the money could be then used to distribute between the three younger children in order that they may receive capital sums equal to that which the two eldest sons received to buy their farms. In 1995 this 30 ha was replanted, and then sold to a trust set up by the second generation for the benefit of the grandchildren. The costs of providing 30 ha for the grandchildren were as follows:

survey and legal fees	\$ 4,596
spray chemicals and helicopter	\$ 5,206
contract planting 32,000 trees	\$ 6,480
cost of 32,000 trees @ \$293/100	\$ 6,496
Total	\$22,247
minus GST	\$ 2531
Net	\$20,247 (paid by grandfather, second generation)

cost of purchasing 30 ha for family trust	\$15000
provision for future silviculture 30 ha @ \$1562/ha	\$46860 (Paid by trust)

By utilising a partnership and a trust, the income was spread three ways, and tax advantages were gained. The farm forestry operation provided equity in order that the assets could be evenly distributed among family members. In this example four generations will have benefited from the planting of farm forestry.

6.3 Study-farm three

'Study-farm three' is a 1256 ha sheep, beef, and forestry operation located in West Otago. The farm is presently carrying the following stock:

7800 ewes
2000 ewe hoggets
130 cows

In conjunction with these 10,000 stock units the farm has an area of 230 ha of shelterbelts and plantation forestry. The species used so far consist of:

<i>Pseudotsuga menziesii</i>	120 ha
<i>Pinus radiata</i>	57 ha
<i>Cupressus macrocarpa</i>	14 ha
<i>Eucalyptus delegatensis</i>	25 ha
<i>Eucalyptus nitens</i>	8 ha
<i>Eucalyptus regnans</i>	2 ha

As this is a high-altitude farm (the homestead is 550 m above sea level), with cold winters and frequent snowfalls, trees were initially planted for shelter. Now trees are also planted for high quality timber production. The plantation sites are selected on a best land-use basis.

Farm forestry has been an integral part of this farming operation for some time. Trees have been sold to set the out-going parents up on a small 40 ha property, funding the purchase of the property, the building of a new house, roading, power and water supply, a tractor and some machinery. Trees sold over the last five years, 1990-1995 bought in \$30,000 - 40,000 annually. The parents (out-going generation) are now off the farm, but retain ownership of the trees through the registration of a forestry right. There was no other legal framework. The forestry operation provided all the money required to move the parents off the farm, and provides for their continued income through the forestry right.

The division of the farm assets was a simple affair, with the two sons getting the property divided into two separate titles, except for a 115 ha forest block which is retained by the parents. The daughter will have a share in this, and on the parents' death will have their 40 hectare retirement block. A brief summary of the intergeneration transfer follows:

- 1982: Parents bought 40 ha block to retire to.
- 1993-4-5: Sold trees to provide a fund to cover costs of house building etc.
- Nov. 1995: Parents moved off the farm.
- Jan 1996: Surveyors divide property creating two separate properties.
- July 1996: Sons take over their own properties.
- Nov 1997: All debt cleared on retirement block.

Trees have been planted on this farm every year since 1930. Trees were sold to finance the purchase of the entire farm in 1979, and in other years when there was a requirement for cash. The farmer stressed that trees should be part of every farming operation, with care taken to have realistic areas planted to supply the required timber volume.

6.4 Hypothetical example

This 600 ha sheep and beef operation, located on the Canterbury Plains, carries 4700 stock units and has 70 hectares of farm forestry, consisting of the following species:

<i>Pinus radiata</i>	60 ha
<i>Pseudotsuga menziesii</i>	10 ha
<i>Cedrus deodara</i>	Used in a shelterbelt as the slow growing
<i>Cedrus atlantica</i>	species.

The farm forestry has been developed to provide effective shelter for the farm as well as providing an extra source of income (on a continuous rotation basis). The plantings began in 1977, with 3 ha planted every two years until 1997, 30 ha in total. In addition, a block of land (30 ha) was subdivided off in 1980 to provide an area for a forestry operation, on a separate title, to belong to a discretionary trust for the benefit of the children (hereafter the Forestry Trust). This land was planted in *Pseudotsuga menziesii* (10 ha) and *Pinus radiata* (20 ha). This farm-forestry operation was intended for use in farm succession.

In 1986 the property (livestock, plant, and the land, but excluding the separate 30 ha forestry block) was split under the Matrimonial Property Act (1976). The parents then formed a company, to which the farm land was sold for \$650,000, with

controlling preference shares held by the parents, and ordinary shares held by a discretionary family trust. This purchase price was left owing to the parents, but over the last 10 years it has been reduced by gift to \$110,000, and will be fully gifted in a further three years (Table 6.1). The parents' income is, however, still derived from farming as they own the livestock and plant.

YEAR	AMOUNT GIFTED (\$)	TOTAL LOAN OUTSTANDING (\$)
		650,000
1986	54,000	596,000
1987	54,000	542,000
1988	54,000	488,000
1989	54,000	434,000
1990	54,000	380,000
1991	54,000	326,000
1992	54,000	272,000
1993	54,000	218,000
1994	54,000	164,000
1995	54,000	110,000
1996	54,000	56,000
1997	54,000	2,000
1998	2,000	NIL

TABLE 6.1 The gifting of money to pay off outstanding loans.

NOTE: Under the Matrimonial Property Act (1976), which allows the property to be divided evenly between two spouses, and the Estate and Gift Duties Amendment Act (1993) the parents can gift \$27,000 each (\$54,000 in total) annually.

In 1991, one of the three children, a farming daughter, borrowed money from the bank, to purchase a half share in the livestock and plant (at valuation), costing her \$117,550, and thus forming a farming partnership with her parents. With retirement in mind, the parents took the following steps in 1996. By registering a forestry right the parents sold the oldest 5 ha (of the forestry held by the farming company) to an investor for \$116,838 (Table 6.2), with the company paying the taxation that arose from the harvesting income. Again borrowing from the bank, the farming daughter purchased her parents' remaining interest in the livestock and plant, and the partnership was dissolved. The retiring parents had then received:

1991 - half share in livestock and plant	\$117,550
1996 - half share in livestock and plant	\$117,550
1996 - forestry right sold	\$118,708
Total	\$353,808

The parents now purchase a retirement home for \$250,000, investing the remaining \$103,808. Half the ordinary shares held by the trust are transferred to the farming daughter under the discretionary powers in the Trust Deed. The remaining ordinary shares are held by the trust, and the controlling preference shares are held by the parents to ensure that the transition goes smoothly. After another five years (2001) the parents transfer the preference shares to the daughter, and wind up the family trust on such terms that the daughter receives the remaining ordinary shares and then forgoes her interests in the Forestry Trust (30 ha block).

When the parents die the trust will be dissolved. They will leave their estate, which consists of invested funds worth \$200,000, and the retirement home now valued at \$300,000 to the non-farming children. The farming daughter owns and controls assets worth over \$1.5 million, and the non-farming members will each receive \$250,000 upon their parents' deaths, and also ownership and control of 30 ha of forestry. This forestry block will have a future value of:

Year	2010	20 ha <i>Pinus radiata</i>	1,124,900 (Table 6.4)
		10 ha Production thin <i>Pseudotsuga menziesii</i>	269,567 (Table 6.7)
	2035	10 ha <i>Pseudotsuga menziesii</i>	709,722 (Table 6.8)
		Total	\$2,104,189

The company, trust, and partnership provided a framework which enabled the parents to retain control while still having the flexibility to complete the intergeneration transfer. The trust ensured that claims could not be made under the Family Protection Act (1955), and the Matrimonial Property Act (1976) provided some tax savings and assisted gifting by both parents in the early years. The forestry became a vital element in helping the parents to fund their retirement and also to achieve, at least partly, an equitable intergeneration transfer of farm assets. The forestry right provided flexibility, because if more money was needed by the parents at any stage of the

transition another 'right' could be registered, providing valuable equity for the parents.

PROJECT DESCRIPTION		Site Topography: Flat		Species: <i>Pinus radiata</i>		Site Index: 25		Final stems/ha: 300																						
Location: Canterbury		Existing Vegetation: Pasture		Regime: Prune and thin to waste		Initial stems/ha: 1143		Rotation Length: 30 years																						
Project Name: Example																														
		\$ per hectare cost and revenues																												
Project year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Calendar year	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
CAPITAL INPUTS																														
Roads/tracks	N/A																													
Fences	500.00																													
Land Preparation	250.00																													
Other																														
FORESTRY INPUTS																														
Seedling Purchase	285.75																													
Planting	228.60																													
Fertiliser	171.45																													
Releasing	137.16	137.16																												
Prune 1							450.10			300.00			360.00																	
Prune 2																														
Prune 3																														
Thin 1							126.00			108.00																				
Thin 2																														
Other																														
Other																														
ANNUAL INPUTS																														
Land (rental)	N/A																													
Rates	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Insurance																														
Other (Fence maintenance)		10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Other																														
TOTAL COSTS	1582.96	157.16	20.00	20.00	20.00	20.00	616.10	40.00	40.00	448.00	40.00	40.00	400.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	
REVENUES																														
Grazing	N/A																													
Production Thinning	N/A																													
Harvesting																														56245.00
TOTAL REVENUES																														56245.00
NET CASH FLOW	1582.96	157.16	20.00	20.00	20.00	20.00	616.10	40.00	40.00	448.00	40.00	40.00	400.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	
NET DISCOUNTED CASH FLOW	1582.96	132.28	15.44	14.17	13.00	11.93	337.03	20.07	18.42	189.24	15.50	14.22	130.47	11.97	10.98	10.07	9.24	8.48	7.78	7.14	6.55	6.01	5.51	5.06	4.64	4.26	3.90	3.58	3.29	
DISCOUNT RATE	9%																													
NET PRESENT VALUE /ha value of future payment now	4617.50	5033.07	5486.05	5979.79	6517.97	7104.59	7744.00	8440.96	9200.65	10028.71	10931.29	11915.11	12987.47	14156.34	15430.41	16819.15	18332.87	19982.83	21781.28	23741.60	25878.34	28207.39	30746.06	33513.21	36529.39	39817.04	43400.57	47306.62	51564.22	56245.00

TABLE 6.2 The net present value per hectare of *Pinus radiata* at example farm.
 NOTE: The parents sold the Forestry Right to 5ha in 1996 (year 20).
 5*NPV of year 20 = Sum received for Forestry Right.

HARVESTING THE CROP								
Project Year: 30								
Area: 5ha								
Total Recoverable Volume/ha (m3/ha): 575								
Species: Pinus radiata								
Log Grades	Rec.Vol (m3/ha)	Delivered Price (\$/m3)	Roading Cost (\$/m3)	Harvesting Cost (\$/m3)	Cartage Cost (\$/m3)	Commission (\$/m3) 7%	Stumpage Net Return (\$/ha)	Stumpage Net Return Total (\$)
Pruned Logs P1	185.00	200.00		18.00	16.00	14.00	28120.00	140600.00
P2	210.00	130.00		18.00	16.00	9.10	18249.00	91245.00
Domestic Sawlogs S1	130.00	115.00		18.00	16.00	8.05	9483.50	47417.50
Domestic Sawlogs S2		115.00						
L1/L2		75						
S3/L3		70						
A Grade - Japan		110						
K Grade - Korea		90						
Posts & Poles								
Chip/Pulp Logs	50.00	45.00		18.00	16.00	3.15	392.50	1962.50
Other								
TOTAL	575.00						56245.00	281225.00

TABLE 6.3 The yield table determining the final crop value of the *Pinus radiata* plantings used in the sale of a Forestry Right.

HARVESTING THE CROP								
Project Year: 30								
Area: 20ha								
Total Recoverable Volume/ha (m3/ha): 575								
Species: Pinus radiata								
Log Grades	Rec.Vol (m3/ha)	Delivered Price (\$/m3)	Roading Cost (\$/m3)	Harvesting Cost (\$/m3)	Cartage Cost (\$/m3)	Commission (\$/m3) 7%	Stumpage Net Return (\$/ha)	Stumpage Net Return Total (\$)
Pruned Logs P1	185.00	200.00		18.00	16.00	14.00	28120.00	562400.00
P2	210.00	130.00		18.00	16.00	9.10	18249.00	364980.00
Domestic Sawlogs S1	130.00	115.00		18.00	16.00	8.05	9483.50	189670.00
Domestic Sawlogs S2		115.00						
L1/L2		75						
S3/L3		70						
A Grade - Japan		110						
K Grade - Korea		90						
Posts & Poles								
Chip/Pulp Logs	50.00	45.00		18.00	16.00	3.15	392.50	7850.00
Other								
TOTAL	575.00						56245.00	1124900.00

TABLE 6.4 The yield table determining the final crop value of the 20 ha of *Pinus radiata* held by the Discretionary Forestry Trust.

Production Thin								
Project Year: 30								
Area: 10ha								
Total Recoverable Volume/ha (m3/ha): 410								
Species: Pseudotsuga menziesii								
Log Grades	Rec.Vol	Delivered	Roading	Harvesting	Cartage	Commission	Stumpage	Stumpage
	(m3/ha)	Price	Cost	Cost	Cost	(\$/m3)	Net Return	Net Return
		(\$/m3)	(\$/m3)	(\$/m3)	(\$/m3)	7%	(\$/ha)	Total (\$)
Pruned Logs P1								
P2								
Domestic Sawlogs S1	20.00	180.00		18.00	16.00	12.60	2668.00	26680.00
Domestic Sawlogs S2	35.00	140.00		18.00	16.00	9.80	3367.00	33670.00
L1/L2								
S3/L3	260.00	120.00		18.00	16.00	8.40	20176.00	201760.00
A Grade - Japan								
K Grade - Korea								
Posts & Poles								
Chip/Pulp Logs								
Other (residual)	95.00	45.00		18.00	16.00	3.15	745.75	7457.50
TOTAL	410.00						26956.75	269567.50

TABLE 6.5 The yield table determining the value of production thinning of *Pseudotsuga menziesii* at age 30 (year 2010) for valuation of the Forestry Trust.

Harvesting the Crop								
Project Year: 55								
Area: 10ha								
Total Recoverable Volume/ha (m3/ha): 843								
Species: Pseudotsuga menziesii								
Log Grades	Rec.Vol	Delivered	Roading	Harvesting	Cartage	Commission	Stumpage	Stumpage
	(m3/ha)	Price	Cost	Cost	Cost	(\$/m3)	Net Return	Net Return
		(\$/m3)	(\$/m3)	(\$/m3)	(\$/m3)	7%	(\$/ha)	Total (\$)
Pruned Logs P1								
P2								
Domestic Sawlogs S1	145.00	180.00		18.00	16.00	12.60	19343.00	193430.00
Domestic Sawlogs S2	192.00	140.00		18.00	16.00	9.80	18470.40	184704.00
L1/L2								
S3/L3	415.00	120.00		18.00	16.00	8.40	32204.00	322040.00
A Grade - Japan								
K Grade - Korea								
Posts & Poles								
Chip/Pulp Logs								
Other (residual)	88.00	45.00		15.00	16.00	3.15	954.80	9548.00
TOTAL	840.00						70972.20	709722.00

TABLE 6.6 The yield table determining the value of *Pseudotsuga menziesii* at age 55 (year 2035) for valuation of the family trust.

Chapter 7

SUMMARY

The intergeneration transfer of family-farm assets is undoubtedly made a lot easier with the successful integration of farm forestry into the family farm operation. It is not the farm forestry alone, however, which makes the transfer successful, but rather the intelligent use of the available mechanisms. This report has shown that by utilising the mechanisms a forestry operation can form an integral part of the intergeneration transfer of family farm assets.

Chapter 2 defined the family-farm system as: owner operated, entrepreneurial, diversified, family centred, resource conserving and a way of life. In light of this definition, farm forestry appears to strengthen the commonly understood cultural meaning of the family farm. Farm forestry should not therefore be looked upon as a threat to the established agricultural sector, but rather as a way of strengthening the already well-founded values. Farm forestry also provides an opportunity to create a separate income, as long as planning is not left too late. With careful and precise planning, the rotation length can be fully exploited and provide benefits to both the incoming and out-going generations.

Farm succession has become increasingly complex over the years with the emergence of new demographic trends. The combination of earlier marriage age, smaller numbers of children born, and greater life expectancy, imply a significant lengthening of the overlap of successive generations. These effects, combined with the increasing farm size needed in today's economic climate, intensify the complexity of the intergeneration transfer. A successful intergeneration transfer, therefore, will involve extensive planning, unbounded flexibility, and precise timing. Since it is becoming increasingly risky for retiring generations to rely upon social welfare payments for retirement income, the careful planning of retirement, and consequently farm succession, is essential in order to provide a retirement income that is separate from the farming operation. By creating a separate income for the retiring parents, the incoming farming generation maintains the freedom and flexibility that their predecessor had. The methods and processes used to pass on a farm from one

generation to another can have serious repercussions on the viability of the family-farm business, therefore retirement and succession play an integral role in farm transfer which should, ideally, be a logical and progressive process.

Farm forestry is therefore not only concerned with timber production, but also the many other beneficial uses of trees (as outlined in 3.1.1, 3.1.2 and 3.1.3). It can be seen as a form of diversification which enables farmers to maximise the production of the land, in line with its particular qualities and potential, while enforcing the skills and wishes of the owner, and in doing this it creates an opportunity for farmers to plan for retirement and subsequent farm succession. By conventional standards farm forestry is a radical land-use. It is time for farmers to drop this naive interpretation of farm forestry and move forward. The different nature of investment in farm forestry has for so long been to its detriment, but now there is enough factual information and mechanisms available for farmers to exploit what farm forestry has to offer.

This report has outlined many of the mechanisms available for farm succession, and with the use of working examples has shown how various combinations of these mechanisms can help in the utilisation of farm forestry for the intergeneration transfer of family-farm assets. The variety of gifting options provided by the Wills Amendment Act (1955), the Matrimonial Property Act (1976), and the Estate and Gift Duties Amendment Act (1993), prove to be very beneficial in dividing the family assets evenly between the spouses, avoiding undue tax payments, and speeding up the process of gifting. Structures such as qualifying companies, joint ventures, partnerships, and family trusts all provide ways in which the family-farm assets can be owned and operated (giving various forms of control) so that the intergeneration transfer of these assets maintains flexibility, and the maximum benefit is gained for each generation.

Farm forestry, combined with the various mechanisms available, is shown by each of the study farms and the hypothetical example, to play an integral role in the successful intergeneration transfer of family-farm assets. These examples showed that there is more than one way in which successful intergeneration transfer can occur. The

mechanisms chosen depend upon the needs, desires, and speed at which the transfer has to take place. What all the examples expressed was that with effective planning, so that flexibility is maintained, and good timing, farm forestry is an effective tool in the intergeneration transfer of family-farm assets.

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APPENDIX 1

		RETIREMENT INCOME			
		\$400,000	\$40,000 Retirement Income		
		10%	3%		
Lump Sum					
Return on investment					
Inflation					
YEAR	LUMP SUM	EARNINGS return on inv	CUMULATIVE	INCOME inflation incl	NET FUND
1	400000	40000	440000	40000	400000
2	400000	40000	440000	41200	398800
3	398800	39880	438680	42436	396244
4	396244	39624	435868	43709	392159
5	392159	39216	431375	45020	386355
6	386355	38635	424990	46731	378619
7	378619	37862	416481	47762	368719
8	368719	36872	405591	49195	356396
9	356396	35640	392036	50671	341365
10	341365	34137	375502	52191	323311
11	323311	32331	355642	53757	301885
12	301885	30189	332074	55369	276704
13	276704	27670	304375	57030	247344
14	247344	24734	272079	58741	213337
15	213337	21334	234671	60504	174167
16	174167	17417	191584	62319	129265
17	129265	12927	142192	64188	78004
18	78004	7800	85804	66114	19690
19	19690	1969	21659	68097	-46438
20	-46438	-4644	-51082	70140	-121222

		LUMP SUM \$500,000			
		(same interest and inflation rate)			
1	500000	50000	550000	40000	510000
2	510000	51000	561000	41200	519800
3	519800	51980	571780	42436	529344
4	529344	52934	582278	43709	538569
5	538569	53857	592426	45020	567406
6	547406	54741	602146	46731	555776
7	555772	55578	611353	47762	563591
8	563591	56359	619950	49195	570755
9	570755	57076	627831	50671	577160
10	577160	57716	634876	52191	582685
11	582685	58628	640953	53757	587197
12	587197	58720	645916	55369	590547
13	590547	59055	649602	57030	592571
14	592571	59257	651828	58741	593087
15	593087	59309	652396	60504	591892
16	591892	59189	651081	62319	588763
17	588763	58876	647639	64188	583451
18	583451	58345	641796	66114	575682
19	575682	57568	633250	68097	565153
20	565153	56515	621668	70140	551528
21	551528	55153	606681	72244	534436
22	534436	53444	587880	74412	513468
23	513468*	51347	564815	76644	488171
24	488171	48817	536988	78943	458044
25	458044	45804	503849	81312	422537
26	422537	42254	464791	83751	381040
27	381040	38104	419143	86264	332880
28	332880	33288	366168	88852	277316
29	277316	27732	305048	91517	213531
30	213531	21353	234884	94263	140621
31	140621	14062	154683	97090	57593
32	57593	5759	63352	100002	-36650

Source: R.J. Preston (not dated) Cost of Retirement. Chartered Accountant, Christchurch.

APPENDIX 2

Directly Relevant	Indirectly Relevant	Relating to Forestry as a Commercial Venture or Business	Regulations
Cooperative Forestry Companies Act 1956 Crown Forests Assets Act 1989 Forests & Rural Fires Act 1977 Forestry Encouragement Act 1962 Forestry Rights Registration Act 1983 Forests Act 1949 (amended by the Forests Amendment Act 1993)	Biosecurity Act 1993 Conservation Act 1987 Fencing Act 1978 Historic Places Act 1993 Land Act 1948 Maori Reserved Land Act 1955 Misuse of Drugs Act 1975 National Parks Act 1980 Native Plants Protection Act 1934 New Zealand Walkways Act 1990 Pesticides Act 1979 Plant Varieties Rights Act 1987 Plants Act 1970 Reserves Act 1977 Resource Management Act 1991 Tarawera Forest Act 1967 Te Ture Whenua Maori (Maori Land Act) 1993 Transport Act 1962 Treaty of Waitangi Act 1975 Trespass Act 1980 Wild Animal Control Act 1977 Wildlife Act 1953	Commerce Act 1975 Companies Act 1955 Companies Act 1993 Contracts Enforcement Act 1956 Employment Contracts Act 1991 Health & Safety in Employment Act 1992 Holidays Act 1981 Land Transfer Act 1952 Local Government Act 1974 Machinery Act 1950 Minimum Wage Act 1983 Overseas Investment Act 1973 Public Works Act 1981 Sale of Goods Act 1908 Trade Marks Act 1953	Forest & Rural Fires Regulations 1979 Forest Disease Control Regulations 1967 Forest Produce Import and Export Regulations 1966 Forestry Encouragement Grants Regulations 1983 Forestry Encouragement Loans Regulations 1967 Forestry (Indigenous Timber Milling) Regulations 1993 Forestry (East Coast Grants) Regulations 1992 Indigenous Forest Timber Advisory Committee Regulations 1966 State Forest Parks & Forest Recreation Regulations 1979 Timber Floating Regulations 1955 Timber Industry Training Centre Advisory Committee Regulations 1979 Timber Production Advisory Committee Regulations 1949 Timber Regulations 1948

LIST OF STATUTES RELEVANT TO FORESTRY

Source: McSorley, 1995, p. 220.

APPENDIX 3

1. GENERAL FARM DESCRIPTION

- 1.1 Locality:**
- 1.2 Area:**
- 1.3 Ownership:**

- 1.4 Farm Type:**

- 1.5 Stock Numbers and/or Crop Production:**

2. FARM FORESTRY OPERATION

* In Addition could you please provide a map of the farm with the areas of forestry (shelterbelts, timberbelts, plantations, conservation areas, and amenity plantings).

- 2.1 Total Area of Farm Forestry:**

- 2.2 Type of Farm Forestry:** (Please specify total area of each)
 - Plantation
 - Shelterbelts/timberbelts
 - Conservation
 - Amenity

- 2.3 Species Utilised:** (Please list with approximate areas)

- 2.4 What was the prime objective of the farm forestry operation:**
ie. to create a monetary income for retirement, create equity for other family members (children that are not interested in farming), best land-use, conservation, increase agricultural activity.
- 2.5 How was the farm forestry operation utilised in farm succession and what was the legal framework:**
Trusts, Partnerships, Companies, Joint Ventures, Gifting Options, Matrimonial Property Act, Wills, Forestry Rights Registration Act.
- 2.6 What did you find beneficial/successful or conversely difficult about the legal framework you utilised:**

2.7 Did the farm forestry operation provide you with the equity needed for a successful intergeneration transfer. What percentage of the equity was provided/or is expected to be provided by the forestry operation and where the assets able to be divided equitably among family members:

2.8 How long did the process of farm succession take/or is expected to take. Please outline the order in which the major steps that where or will be taken and the time scale involved.

Other comments: