

# CHAPTER THREE

## FORESTRY

### Introduction

This chapter outlines the current state of forestry and discusses government policy towards it, including in particular the role of government owned forestry enterprises.

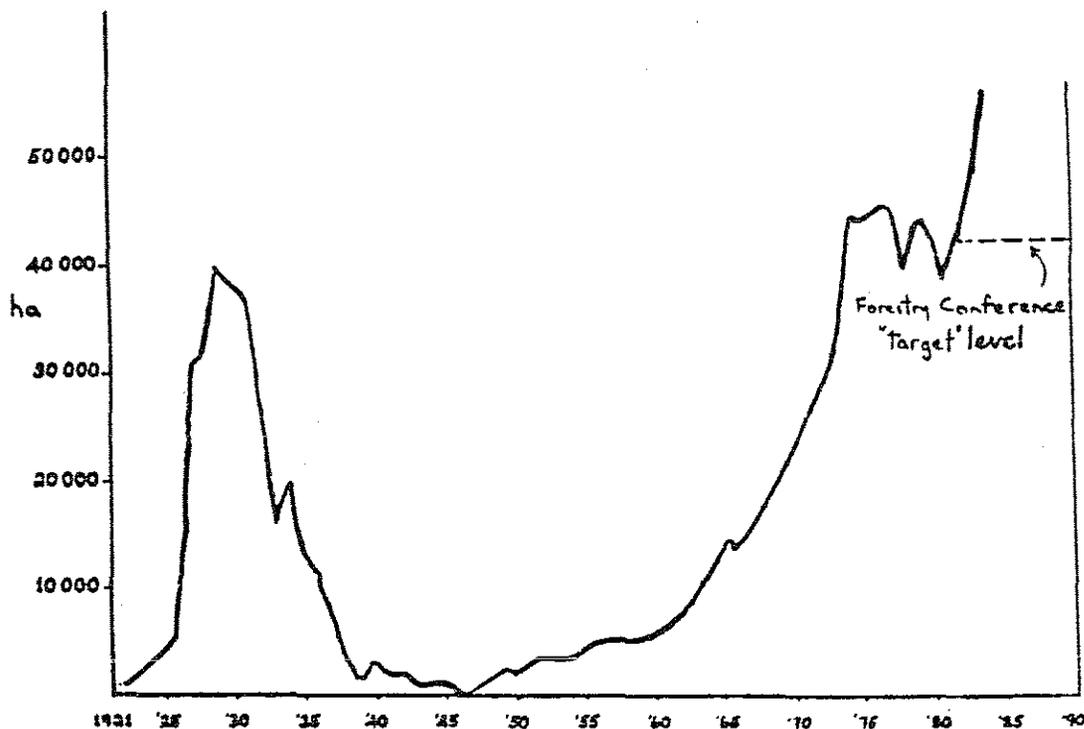
### Background

#### a *New Zealand's Forest Estate*

Prior to the 1930s, New Zealand's forestry industry was largely based on indigenous forests. Over the period 1925-1935, a planned expansion of exotic forests followed by depression employment policies led temporarily to a much higher level of plantings of exotic forests, and since that time the industry has increasingly been based on exotic species, principally *pinus radiata*. New planting levels were low from the late 1930s through to the 1960s, but since that time there has been a rapid increase in new plantings from 5000ha per annum in 1960 to the current level of about 56,000ha per annum (see Figure 1).

Figure 1

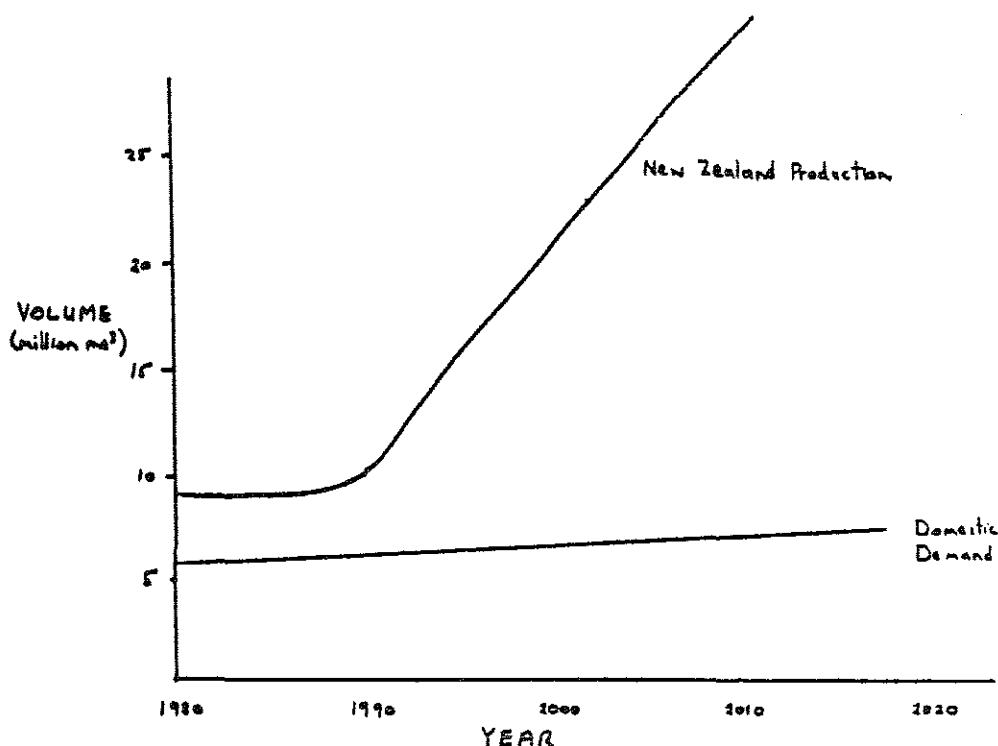
*Annual New Planting of Exotic Forest*



This change in emphasis is reflected in production. In 1982, 95 percent of roundwood removal from New Zealand's forests was from exotic forests, compared with 64 percent in 1960 and 14 percent in the late 1930s.

The proportion of the forest estate owned by the state has remained at about 55 percent over the entire period. In other words, the rapid rise in state plantings since the 1960s has been accompanied by a rapid rise in private sector plantings. It is not clear whether this latter increase represents market expectations of the future profitability of forestry, or merely the effect of the state's example and the generous fiscal assistance that has been granted to forestry over the period. While New Zealand conditions appear to be relatively favourable for growing trees, this advantage is offset by relatively high costs of transporting wood products to world markets and the huge stocks of virgin forests in the world (see below). In any case, the rapid increase in forest estates implies that there will be an even more rapid increase in roundwood available for export (see Figure 2).

Figure 2  
*Projected Annual Harvest*



#### b *New Zealand in World Forestry*

As Figure 2 shows, roundwood available for export will increase rapidly from the mid 1990s. Even so, New Zealand's production will be small by world standards. Currently, it represents only 0.3 percent of world production. New Zealand's proportion of world resources of conifers is even smaller

at 0.01 percent. Moreover, annual world wood consumption is only 1.4 percent of world forest resources (mainly natural forests). While some of these world wood resources are in areas which are difficult to harvest, the imbalance between consumption and resources makes the prices we receive for our wood resources very vulnerable to harvesting decisions made elsewhere in the world. Although the data available are very limited, it appears that prices for higher grades of timber such as clearwood are likely to be firmer and less volatile than those of lower grades. In part, this is because the proportion of the world's wood resources which are capable of producing clearwood is declining as virgin forests are felled. This is reflected in recent price trends which show that higher quality grades of timber in the United States have risen in price relative to lower grades over the last 15 years. Studies undertaken at the Forest Research Institute suggest that New Zealand's forest estates will yield higher returns if managed to produce clearwood, even at current export prices.

### **Comment**

The Government intervenes in the forestry sector in the following ways:

- through general assistance policies;
- through employment policies; and
- through direct Government involvement in the sector.

#### *a Assistance Policies*

##### *i General*

Previous post election briefing papers have noted the need to avoid policies which target particular sectors of the economy for increased investment. In particular, they have noted that, in the absence of unusually compelling reasons for believing that market outcomes would not be efficient, it is undesirable to pick sectors or types of development which are perceived to have high national returns. Provided distortions against and impediments to various forms of development are removed, the national desirability of these developments will be reflected in their potential private profitability, and the private sector will invest accordingly.

In the course of a recent review of the Central North Island Forestry and Transport Planning Study (CNIPS) which addressed, inter alia, the appropriate government policy towards plantation forestry and agroforestry, officials of the nine departments involved concurred with this approach. Similarly, a workshop into the technical aspects of agroforestry attended by officials of seven departments found that "agroforestry could certainly prove to be a good investment for some farmers and for some parts of many farms; on the other hand it does not offer promise as an extensive project warranting national emphasis and any further incentives".

These views emphasise the importance of ensuring that assistance to forestry generally, and to agroforestry in particular, does not unduly favour investment in forest growing over investment in other sectors. The major form of financial assistance to forestry is through the Forestry Encouragement Grants (FEG) Regulations, which give a 45 percent grant on most costs (except land purchase) incurred in forestry, in lieu of a subsequent tax deduction at the time of harvesting. The assistance involved is substantial. On each dollar of eligible expenditure, a grower receives 45 cents from the FEG i.e he receives 45 cents from the Government for each 55 cents he spends from his own resources. In contrast, if the grower was subject to the normal company tax rules applying to other sectors, he would have received only about 1 cent in net present value terms by way of the tax deduction for each dollar spent. Moreover the 45 percent grant is paid irrespective of the grower's marginal tax rate (by contrast the marginal tax rate for the average taxpayer having any farm business income is 31 percent), whether or not the grower is in a tax paying position, and whether or not the grower is a taxpayer—e.g. local bodies etc.

Assistance at this level creates major distortions between forestry and other sectors, including other land based industries. For example, since the FEG is available only for forestry, it does not apply to trees such as macadamias which are useful both for producing a cash crop and as a source of wood. This encourages land owners to plant trees which are not crop bearing, in order to qualify for the FEG, even though the planting of crop bearing trees may be in the national interest. A second example is the taxation treatment of immature woodlots. Because the original planter qualifies for the FEG whereas a subsequent purchaser of an already planted woodlot does not, the total after-tax return from the woodlot is greater if it does not change hands during its life. This inhibits the transfer of ownership of immature woodlots. The obvious solution of extending the applicability of the FEG to crop bearing trees and to the cost of purchase of immature woodlots respectively is not appropriate because it exacerbates the distortion between investment in trees and investment in other land uses and in the economy generally. The preferred solution is to abolish the Forestry Encouragement Grants Regulations 1983 and amend the Income Tax Act so that expenditure on forestry establishment and maintenance is treated comparably to agricultural expenditure. Since organisations which are not currently in a tax paying position would be disadvantaged by this change, it is likely that they would express their opposition to the change being implemented. However the proposal has the advantage of reducing the current distortions between forestry on the one hand and agriculture and other activities on the other. It would reduce the deficit by about \$45 million per annum in a full year.

### iii *Direct Assistance to Forestry*

The other major form of assistance to forestry is through the direct assistance given to forestry investors by the advisory services of the Forest Service and by the research effort at the Forestry Research Institute (FRI). The total annual cost to the Government of the FRI research activities is about \$19 million, compared with receipts in 1983/84 of \$78,000 (0.43 percent of expenditure). In contrast, the DSIR's receipts amount to 10 percent of its gross expenditure. Some of this research is in essence basic research, and is probably best considered as part of the total assistance package to forestry. However, other parts of it are of direct assistance to particular private producers. It seems more appropriate to charge the users rather than the taxpayer for specific services of this sort. Such charging would also give a market test value of the research being undertaken.

### iv *Pricing of State Wood*

In the past, the prices for state wood have been lower than world market prices (adjusted for transport costs) and have been set on a sale by sale basis. The appropriate methods of setting prices for state wood are discussed in more detail below in the context of the efficient operation of state owned enterprises in forestry. However, because about half of all roundwood comes from state forests, the price charged by the state affects both forest production and forest processing industries. Since private growers make decisions about new plantings in part on the basis of current wood prices, concessionary state prices depress investment levels in private production forests below what they would otherwise be.

In addition, concessionary state wood prices affect both the processing options chosen by forestry processors and the efficiency with which processing plants are run. There is some evidence that as a result of low wood prices, wood which could potentially yield a higher market return as sawn timber is currently being pulped. This is particularly wasteful in view of the current limited supply of wood for sawn timber production. Higher wood prices would encourage both the better use of existing wood supplies and the choice of the most appropriate options for wood processing when New Zealand's exotic wood production doubles to 18 million cubic metres in the second half of the 1990s. If wood prices are kept low, processors will be encouraged to adopt processing options which depend on high-volume low-cost wood supplies for their profitability.

### v *Intervention in Particular Companies*

In the past, the State has intervened in particular forest processing companies which have got into financial difficulties (e.g. Winstones). There are no arguments on efficiency grounds for such involvement by the State. The

prospect of State intervention has the potential to encourage forestry processors to discount the risks of poor performance in the belief that they will be insured against these risks by the Government.

#### vi *Subsidies to Protection Forestry*

There are several policies designed to compensate forest growers for the downstream benefits they provide through the protection of land prone to erosion. In particular:

- the FEG Regulations provide for a 66-2/3 percent FEG for protection/production forestry as opposed to the standard 45 percent FEG for production forestry;
- the National Water and Soil Conservation Organisation (NWASCO) provides for protection grants of up to 70 percent of planting costs;
- the Forest Service itself undertakes forestry plantings intended in part to provide protection.

While some assistance to growers undertaking protection forestry may be justified because of the benefits that it provides for other landowners, there is a need for a review of the relationship between the three schemes and of the degree to which the assistance should be funded by taxpayers generally, rather than just people further down the catchment area who benefit from the protection forestry. In particular, the integration of the Forest Service's protection forestry into the more general schemes would be an important part of clarifying the objectives of the Forest Service's production forestry activities, as outlined below.

#### vii *Other Assistance*

Since some potential forestry processing options, such as mechanical pulping, use electricity very intensively, the pricing of electricity below marginal cost is likely to encourage the establishment of forestry processing options which are contrary to the national interest. Similarly, the provision of investment or other capital subsidies is likely to encourage the establishment of investment processing options of unduly high capital intensity and unduly low labour intensity.

#### b *Employment Creation Policies*

Because it is perceived as being relatively labour-intensive, forestry is used as a means of creating employment during periods of high unemployment. In particular, there is currently a three-year additional planting programme subject to annual review which provides for planting of some 6490ha per annum in addition to the Forest Service's base planting programme of 16,000ha. Work undertaken to date as part of the first annual review suggests that production forestry is an expensive way of creating employment. Because

of its long lead time, forestry ties up a valuable asset—land—for many years into the future and commits expenditure on thinning, silviculture, and forest management over succeeding years. Our analysis indicates that it would be cheaper to give a substantial direct subsidy on the wages of the target unemployed in private sector employment, rather than employing the same workers in a forestry project having a low rate of return. In any case, it is doubtful whether the present scheme is helping to reduce the level of unemployment across the whole economy in the medium term. Chapter 11 of the post-election brief *Economic Management Part Two* noted that if employment programmes are to be effective in increasing employment in the medium term, it is important that they realise a normal rate of return on investment. The Forest Service, the Labour Department and Treasury are currently reviewing the additional planting programme with the intention of identifying areas of planting which can both meet the required 10 percent real rate of return on investment and target on the most disadvantaged of the unemployed. At this stage, it appears likely that a programme which meets both these criteria will be more limited than the current scheme.

### c *Direct Government Involvement in Forestry*

#### i *General*

Besides its research and general forest sector responsibilities, the Government is directly involved in the forestry sector both through the environmental and recreational activities and through the sawmilling and production forestry activities of the Forest Service. These activities are logically distinct. The environmental and recreational activities are quite clearly traditional government sector functions. For example, the objectives of management of reserve areas includes the objective of reserving areas of outstanding scenic, historical or archeological value. The extent to which this is done, and the expenditure or revenue forgone in doing so, must be evaluated against competing government priorities. In contrast, the production forestry and sawmilling activities are quite clearly commercial.

The objectives associated with each activity, together with other social objectives which the Forest Service has assumed, are conflicting, and the conflict has probably resulted in a loss of efficiency. While it is difficult to quantify the effects, it seems likely that the current annual expenditure of about \$300 million by the Forest Service could be significantly reduced if the objectives of each activity were separately identified, and if its operations and structure were adjusted accordingly. In particular, there is a good case for organising the production forestry activities and the sawmills separately as 'state owned trading enterprises' in the manner outlined in Chapter 2 above.

#### ii *Sawmills*

The Commercial Division of the Forest Service owns and operate two sawmills, one at Waipa and one at Conical Hill. Both sawmills are large by

New Zealand standards. The division was set up in the 1940s to demonstrate the worth of *pinus radiata* as a building material as an alternative to traditional indigenous timber, and to show that private investment in sawmilling could be profitable. This has been achieved, and the division now acts as and is seen as a full commercial competitor in an established sawmilling industry. It is operated as an independent commercial organisation within the Forest Service. Proposals for enhancing the Commercial Division's commercial orientation are well advanced, and the Forest Service and Treasury intend to report back to Ministers with full details shortly.

### iii *Production Forestry Activities*

Production forestry activities form the major component of Vote : Forest Service. It has been estimated that the value of the Forest Service's exotic production forests is about \$4.5 billion, which is more than the reported value of the assets of the Fletcher Challenge Corporation. The performance of the division can have a significant impact on the performance of the economy as a whole. An increase in the rate of return on the Forest Services exotic forests of four percentage points (which does not seem unreasonable) would increase national income by 0.5 percent. Furthermore, the production forestry activities are essentially commercial. In order to secure the best national return on resources invested in these activities, it is desirable to organise them on a fully commercial basis in the manner outlined above and in Chapter 13 of Part Two of Treasury's post-election brief. We have not yet investigated this matter in any detail, and considerable work will be required before any firm recommendations can be made. In the meantime, there are two major steps that are being or should be taken to encourage greater efficiency within the existing organisational framework.

#### • *Harvesting and Marketing Strategy*

In selling mature forests, the essential objective should be to achieve the maximum prices possible. (The selling of state wood at market prices was endorsed by the Sale of State Wood Working Party of the 1981 Forestry Conference.) This is important not only because of the impact this has on the rest of the forestry sector as previously discussed, but also because higher wood prices would have a significant impact on the fiscal deficit.

There are two steps that can be taken immediately to rectify this situation. Firstly, state wood should be tendered in a way which allows a wide number of options for its use. This would allow private sector investors to evaluate what they consider is the best option for use of the wood, and to tender accordingly. The Forest Service is currently developing its wood sales strategies, and we intend to discuss this approach with them. Secondly, world market prices should be sought for state wood in existing sales agreements. The cost of wood is at present often a relatively small proportion of total processing costs. Given that the major processors are also substantial export-

ers, it is now appropriate in light of the announced devaluation for the price of state logs sold domestically to be increased. The timing of any increases would depend upon the terms of the individual contracts, which have not been investigated. We are aware however that most contracts provide for a price review at the request of either the state or the log purchaser if there are significant changes in the market value of roundwood. The expected revenue gain, on a very preliminary basis, from a renegotiation of all contracts could be of the order of \$40 million per annum in a full year.

- *New Planting Levels and Management Regimes*

The Afforestation Working Party of the 1981 Forestry Conference, chaired by the present Director-General of Forests, was charged by the Conference with, inter alia, setting exotic forestry new planting targets for the decade 1981/90, as well as indicating the desirable proportion of new plantings that should be undertaken by the various ownership groups. In Treasury's view, the setting of targets for the sector serves no useful purpose. The 'targets' should be at best regarded as indicative of what might happen in the future rather than as a grand plan for the nation as a whole. The level of planting actually undertaken should instead be determined by the setting of the overall economic environment as discussed above, and allowing individual investors to make their own planting decisions on the basis of their own assessment of market prospects and appropriate land uses.

In particular, the appropriate level of planting, if any, by the Forest Service in each region can only be rationally determined on the basis of an economic evaluation of the returns from the investment involved compared with alternative investments. Such an evaluation would indicate not only the desirability of planting in each region, but also the management regimes that should be adopted. Research evidence available to date suggests that timber is most economically produced through low stocking regimes (such as agroforestry).

An extensive economic evaluation taking into account predicted future prices and particular regional conditions is still required to determine on a region-by-region basis the appropriate level of new planting and management regimes for the state. Following Treasury's recommendation, the previous Minister of Forests instructed his department eighteen months ago "to examine, in association with Treasury, the economic implications of the proposed targets, particularly insofar as they relate to the state (and also reviewing the restocking of areas to be harvested in the future), and to report back in the first instance to the Ministers of Forests and Finance." Treasury considers this analysis to be particularly important both because of the long term expenditure commitment that any new planting implies and because of the significant impact, outlined above, that the return on the state's exotic forests has on the national economy.

In the absence of such an analysis, there is no obvious reason on commercial grounds to hold new plantings above the level necessary to meet the Forestry Conference targets. Taking into account new plantings that have been undertaken under various special employment schemes, the "target" plantings suggested for the state by the Conference would be achieved if the state's average planting level was lowered from the current 22,490ha to 10,500ha per annum. This change would incidentally reduce the direct cost to the Government of planting by an amount rising from about \$9 million per annum in the first full year to about \$17 million per annum after five years.

### **Summary**

Government policy towards forestry affects private sector land use options. Because land use options must be decided on a case by case basis, it is important to ensure that Government policies do not unduly influence choices of land uses. There are some problems in this regard with the Forestry Encouragement Grants Regulations. There also appear to be major problems with the current methods of promoting employment through forestry projects. Proposals for a better targetted scheme are currently being developed.

The two major commercial activities undertaken by the Forest Service are sawmilling and production forestry. The sawmilling activity is already purely commercial, and in our view it should be established within the existing departmental structure as a "State Owned Trading Enterprise" with clear commercial objectives and performance measures. The Treasury and the Forest Service are developing detailed proposals for submission to Ministers shortly. While the task is somewhat more difficult, there is also a need to organise the production forestry activities of the Forest Service in a similar way. However, firm recommendations cannot be made until considerably more work has been undertaken. In the meantime, there are a number of measures which should be undertaken to encourage greater efficiency within the existing organisational framework. In particular, there is a clear need to undertake an economic evaluation of forestry plantings to determine the level of plantings that is appropriate, the areas in which they should be undertaken, and the forest management regimes that should be adopted. In spite of the critical importance of such an analysis, little work has been done on it to date. In addition, there is a need to increase on-stump sale prices so that investment by private growers is not discouraged and so that appropriate forestry processing investment is undertaken.