Attitudes towards forestry in the East Coast region

Melanie Wall and Chris Cocklin*

Abstract
The expansion of plantation forestry has often been a matter of concern to local communities. This concern is founded on the expectation of rural social change, including depopulation, declines in services, reduced employment, and loss of quality of life. Concerns like these have been expressed in regard to the planting programmes under the East Coast Forestry Project, which commenced in 1993. This paper reports on a survey of the attitudes of East Coast residents towards economic development in general, and forestry in particular. The survey reveals that many of the widely recognised social effects of land-use change are of concern to people in the region. The survey also reveals, though, that there is a high level of support for forestry development. This support is based on expectations in regard to employment opportunities and long-term regional economic benefits.

Introduction
Whenever there are significant changes in the pattern of land use, there is always a strong potential for effects upon local populations and existing communities. This has been recognised for a long time and it is understandable that whenever there are extensive changes in the land-use pattern local communities will regard such changes with a measure of trepidation and perhaps even fear and resistance. Throughout New Zealand’s recent history, this has been clearly evident in many cases where forestry expansion has been imminent or underway. In the early 1980s, for example, there was widespread analysis and comment on the effects of forestry on rural society (see, for example, Smith, 1981a; 1981b; Smith and Wilson, 1982). Smith (1981a) suggested that the main concerns of the time in terms of the social effects of land-use change included shifts in the quality of life, employment and income effects, the implications for rural services, and the effects upon local decision-making structures and local power relations. The widespread belief that forestry would encourage rural depopulation was at the heart of much of the concern in the face of the rapid forest expansion during the early 1980s. Depopulation, it was believed, would undermine the viability of rural communities, services would close down hastening the decline, power and authority would become vested more in large, commercial organisations, and the agricultural service industries in even the larger towns would be adversely affected.

In many senses, not a great deal has changed over the past 15 years or so. In 1993, planting began under the government-funded East Coast Forest Project (ECFP). It represents one of the few remaining government-supported forestry planting schemes in the new market-oriented New Zealand economy. Under the project, the plan is to plant approximately 200,000 hectares in forestry over the next 28 years. The project provides the opportunity for any landowner to tender for a grant to assist with the costs of planting exotic forestry on land that has been targeted under the project for forestry development. In general, this is land that has a high potential for erosion (Parliamentary Commissioner for the Environment, 1994). The project is justified on the basis that it is expected to provide benefits by addressing the widespread soil erosion problems on the East Coast, by providing employment, and by boosting the regional economy through commercially viable plantation forestry.

In February of 1994, a 30 minute programme was broadcast on National Radio that examined some of the issues associated with the ECFP. The programme was very critical of the project and this criticism was based in part on the hypothesised effects of the forestry project on East Coast rural communities. Not unlike the concerns held during the 1980s, the programme suggested that there would be rural depopulation, communities would be undermined, services would close, and local agriculture-based industries would collapse. The radio programme implied widespread community resistance to the ECFP and forestry in general.

The airing of the radio programme coincided with a survey being conducted in the East Coast region to identify local attitudes towards forestry in general and the ECFP in particular. Coincidentally, many of the concerns and issues that were raised in the radio programme were addressed by the questionnaire survey. Unlike the radio programme, though, the results of this survey suggested a far more mixed view as to the desirability and perceived effects of forestry on the East Coast region; indeed, it would seem that many people in the region are strongly supportive of forestry. It is our hope that this paper will present some of the findings of this survey of attitudes towards forestry on the East Coast. The paper reviews our findings in respect of people’s preferences for development in general and then considers attitudes towards forestry in particular. In respect of the latter, attitudes towards forestry, the associated benefits and costs associated with forestry development, and issues of ownership are all addressed.

METHODOLOGY
The findings presented in this article were obtained from a structured questionnaire, administered through a face-to-face interview procedure. The attitudinal survey was conducted during January–February 1994 and involved interviews with a total of 503 East Coast residents. The 1991 New Zealand Census recorded a population of 44,361 persons for the East Coast region, so the sample of 503 respondents represented approximately 1.1 per cent of the total population.

The geographic boundary of the survey was defined according to the territorial jurisdiction of the Gisborne District Council, further subdivided on the basis of Census Area Units (CAUs). A key consideration in the survey design was to obtain a sample that was representative of the spatial distribution of the residents.
of the East Coast region. Hence, 400 interviews were allocated according to the relative distribution of the region's population by CAU. Thus, if 10 per cent of the people in the region were located within a CAU, then 40 respondents would be selected for interview within this CAU.

The remaining 103 interviews were divided on a proportional basis amongst those CAUs defined as rural (Tamakau/Rakauroa, Tinoroto, Wharekaukau, and East Cape). This increased the sample size from rural areas, with a view to ensuring its representativeness. An effect of this is to over-weight the responses from rural areas in the total sample, and this is perhaps worth noting when results for the total group are referred to and particularly in the context of generalising the results to the region’s population. The associated bias can be justified on the basis that forestry developments are more likely to affect rural residents, at least in a direct sense. Partitioning the sample into ‘rural’ and ‘urban’ when some of the results are cited reveals some of the systematic differences within these particular sample subgroups.

The questionnaire was based on a combination of open-ended and closed-format questions (based on either Likert scales or ranked answers). The questionnaire was divided into five main sections: demographic characteristics, community stability and satisfaction, development preferences, attitudes to forestry and information and decision making. In this paper the discussion is limited to the results relating to development preferences and attitudes towards forestry. For a more thorough discussion of the methods and survey findings readers are directed to Wall and Cocklin (1994).

Preferences for Economic Development

The survey respondents were asked about their preferences for economic development in respect of farming, fishing, forestry, tourism, and industrial development. In terms of employment, farming and forestry were identified by equal proportions of the survey respondents (31 per cent) as the industries that would create the greatest number of jobs for the respondents’ own communities (Table 1). Industrial development was identified by 22 per cent of respondents as offering the greatest prospects for job creation. With reference to the East Coast as a whole, 51 per cent perceived that the greatest number of jobs would be created by forestry and 29 per cent of respondents believed that farming would generate the highest level of employment for the region (Table 1).

<table>
<thead>
<tr>
<th>Industry</th>
<th>Jobs for Community (n = 499)</th>
<th>Jobs for East Coast (n = 498)</th>
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<tr>
<td></td>
<td>percentage of sample</td>
<td>percentage of sample</td>
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<tr>
<td>Farming</td>
<td>31</td>
<td>29</td>
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<tr>
<td>Fishing</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Forestry</td>
<td>31</td>
<td>51</td>
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<tr>
<td>Tourism</td>
<td>10</td>
<td>11</td>
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<td>Industrial Development</td>
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A small majority (51 per cent) felt that the greatest economic benefits in East Coast rural areas would be generated by farming, 38 per cent identified forestry, while the other industries (fishing, tourism and industrial development) were identified by fewer respondents (Table 2). The perceptions as to which sector would bring the greatest economic benefits to Gisborne were varied. Industrial development was identified by 31 per cent of respondents while farming, forestry and tourism were identified by similar numbers of respondents (24, 23 and 21 per cent, respectively.)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Benefits to East Coast rural areas (n = 497) percentage of sample</th>
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<tr>
<td>Farming</td>
<td>51</td>
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<td>Fishing</td>
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<td>Forestry</td>
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<td>Tourism</td>
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<td>Industrial Development</td>
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Over the short term, tourism was perceived to offer the greatest benefits to the East Coast region by 30 per cent of respondents (Table 3). This was followed by farming (23 per cent) and forestry (22 per cent). Over the long term, though, 55 per cent of respondents suggested that forestry was the industry that would provide the greater benefits.

Respondents were asked which industry would be most beneficial to them personally (Table 4). The overall low response rate to this question is notable, as are the differences in response rate between rural and urban respondents; only 15 per cent of rural respondents did not answer this question compared to 41 per cent of urban respondents. The strong leaning towards farming (44 per cent of respondents) is possibly explained by the lower response rate to the question amongst respondents in the urban areas. The other three main choices were industrial development (20 per cent), tourism (16 per cent), and forestry (15 per cent). Opinion as to the most preferred industries, in general, for the East Coast region was evenly split between farming and forestry, both with 28 per cent support (Table 4), followed closely by tourism (23 per cent) and industrial development (19 per cent).

<table>
<thead>
<tr>
<th>Industry</th>
<th>Short term benefits (n=499) percentage of sample</th>
<th>Long term benefits (n=498) percentage of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>23</td>
<td>24</td>
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<tr>
<td>Fishing</td>
<td>12</td>
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<tr>
<td>Forestry</td>
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<td>Tourism</td>
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<td>Industrial Development</td>
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The main support for development in farming came from the rural areas, with 41 per cent of the rural sample preferring farming development compared with only 17 per cent of the urban sample (Table 5). The option for development most preferred by urban respondents was forestry (32 per cent), followed by industrial development (26 per cent) and tourism (23 per cent).

There was also a division in opinion on the basis of ethnicity,
with strong support for forestry among New Zealand Maori (38 per cent) and other ethnic groups (41 per cent), whereas among those identifying themselves as New Zealand European, support for forestry was 25 per cent (Table 5). Support for farming amongst those identifying themselves as New Zealand European was 33 per cent, 20 per cent among New Zealand Maori and 14 per cent among other ethnic groups. In general, the support for tourism, fishing and industrial development showed no major differences on the basis of rural/urban or ethnic group divisions. However, industrial development was less preferred in rural areas than urban and a higher proportion of respondents within the ‘other’ ethnic group identified fishing as the preferred option for development. There were no significant differences in opinion on the basis of gender.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Urban (%n=280)</th>
<th>Rural (%n=193)</th>
<th>New Zealand European (%n=307)</th>
<th>New Zealand Maori (%n=137)</th>
<th>Other ethnic group (%n=36)</th>
<th>% of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farming</td>
<td>17</td>
<td>44</td>
<td>23</td>
<td>20</td>
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<tr>
<td>Fishing</td>
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<td>17</td>
<td>9</td>
<td>14</td>
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<tr>
<td>Forestry</td>
<td>32</td>
<td>23</td>
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<td>38</td>
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<td>Tourism</td>
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<td>Industrial</td>
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<td>development</td>
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### ATTITUDES TO FORESTRY

This section reports on the level of support for forestry as an option for development. In addition, the perceived benefits and problems associated with forestry are identified and issues relating to forestry ownership are considered.

**Benefits associated with forestry development**

Forestry was supported as an option for development in the East Coast region by 85 per cent of respondents, with 22 per cent indicating strong support and 63 per cent being supportive. Opposition to forestry development was low with only 13 per cent opposed and 2 per cent strongly opposed.

Respondents were asked if they considered that there were benefits associated with forestry. The overwhelming response was yes (91 per cent), with only 3 per cent claiming no and 5 per cent unsure. The principal benefit associated with forestry development was identified by respondents as employment generation, especially in rural areas, with over half the respondents (53 per cent) noting this. Environmental benefits, which included advantages such as soil conservation, flood control, the creation of a carbon sink, and other issues relating to sustainable land use were identified by 21 per cent of respondents. Economic multiplier effects generated by forestry development were identified by 13 per cent of the sample, and amongst these respondents there was a perception that benefits would flow on and stimulate regional development in other industrial sectors. Other advantages associated with forestry development that were identified by survey respondents included the encouragement of investment capital from outside the region into the East Coast and the associated benefits for the wider community arising from increased employment and investment. Respondents suggested that this would encourage a reduction in social problems, such as crime and unemployment, promoting a new-found feeling of optimism.

**Problems associated with forestry development**

In response to a question as to whether there were problems associated with forestry, 72 per cent claimed there were problems, 14 per cent felt there were no problems and 13 per cent were undecided. A number of key concerns were raised by those who perceived there were problems. Twenty-eight per cent of the sample group referred to infrastructure as a problem, including the costs of road development and maintenance and questions as to who is going to pay for these. Associated with these concerns were other externalities such as increased traffic levels and noise generation. Seventeen per cent believed that forestry was taking productive land out of farming and was causing land prices to increase. Another problem, identified by 14 per cent of respondents, was the concentration of forestry development in the East Coast region on a single species (i.e. Pinus radiata). These people expressed concerns that this could stimulate a variety of environmental problems such as soil nutrient depletion which, after three (the number specifically identified by respondents) generations of monoculture would render the soil unproductive. This in turn might have possible repercussions for wildlife, as natural habitats were destroyed. It was perceived by respondents that this over-reliance on a single species would exacerbate the risk of fire and disease and diminish the aesthetic value of the landscape on the East Coast.

Methods used for harvesting and their possible effects were of concern to 9 per cent of respondents, who felt that erosion could be accelerated once land was cleared, even if replanted immediately. There was a view held by 9 per cent of respondents that existing communities in rural areas would be disrupted severely by forestry development, as farming jobs would be lost with the conversion of farmland to forestry and it was believed by some that this could have a negative backlash effect on farming services and related industries. Also mentioned (by 8 per cent of respondents) was a concern over foreign ownership of forestry development, with recent investments by ITT Rayonier and Jukun Nissho being cited as examples of an evolving pattern. A concern raised by 5 per cent of respondents was that although employment in forestry would be generated, it would be in unskilled jobs only, with little prospect for career advancement. Skilled employment positions would be given to people from outside the region and profits might be also siphoned out of the region. It was also believed that outside workers were already being brought into the region for forestry-related jobs.

Concern was raised by 4 per cent of respondents that an emphasis on forest products could establish an increasing dependence on overseas markets. These respondents felt that the current boom in timber prices and the subsequent rush to plant pine trees was a “fad”, with one respondent likening it to the kiwifruit boom of the mid 1980s. Also noteworthy was the fact that there was no reference amongst the sample group to the clearance of kanuka and manuka as a problem associated with the development of forestry, whereas this had been an issue promoted widely by some conservation groups.

**Forestry ownership issues**

In response to questions about forest ownership, 49 per cent of the sample expressed a preference for private companies to carry out forestry development, while 32 per cent favoured the State and 19 per cent chose a mixture of state and private companies. The reasons which underlie these choices were often difficult to classify; respondents often chose a particular option on the basis of being opposed to the alternative, rather than being supportive of either state or private forestry development. We have therefore grouped responses into five main categories: support for state forestry, support for private company forestry, opposition to state forestry, opposition to private forestry, and support for a mixture of state and private forestry development.

State-controlled forestry development was supported by 32 per cent of those sampled. The respondents felt that a public voice would be retained, as both the ownership of the asset and the profits would remain in New Zealand. It was believed that the State embraced a number of goals, not just profit-making, and this
If you think this looks wait until you see
Spectacular, isn't it? Not only does it make a stunning panorama, it also delivers some pretty impressive returns.

Last year, Carter Holt Harvey Forests produced 4.5 million tonnes of radiata pine - in 50 grades - for both domestic and export processing. And because our forests are a renewable resource, the future looks even more promising.

As one of the largest forest and building product companies in the Southern Hemisphere, our forests support several more thriving industries in downstream processing.

These industries produce a wide range of wood based products including lumber, panel products and pulp and paper.

And our company will continue to provide first class products, export earnings and employment for the future benefit of all New Zealanders.

Our forestry is one of this country's most valuable resources.

We all stand to make something from it.
would ensure greater benefits for the community with, for example, local employment being encouraged. Its greater size in comparison to private companies and its long history in forestry was perceived to give the State increased stability over the longer term, and would enable economies of scale to be achieved.

Forestry development carried out by private companies was supported by 49 per cent of those interviewed. Their explanations for this choice included a perception that private companies tended to be more efficient, with their emphasis solely on maximising profits. Respondents asserted that private companies also encouraged greater local ownership, higher profits and more employment. An important qualifier in respect of these statements and the support for private company forestry development was that a large proportion of these respondents were supportive only of New Zealand-owned companies, not overseas-based organisations.

State control of forestry development was opposed primarily on the basis of a perception that economic performance in the past had been poor. A sense of betrayal was also mentioned, which was felt by some respondents as a result of the sale of state assets during the late 1980s. Some respondents argued that the State had no legitimate role in the marketplace and forestry development carried out by the State would place additional costs on the taxpayer. It was felt that private companies should take the full costs and the burden of the risk. Of those who supported private rather than state forestry development, approximately 65 per cent felt the Government should still play a role in the promotion of forestry in the East Coast region, 25 per cent felt it should not, and the remainder were undecided.

Private companies were opposed on the grounds that the public would have less control and that there was an increased likelihood of foreign ownership which would encourage profit to be taken overseas. It was claimed also that private companies would not provide benefits over the long run, since they do not promote social goals and focus instead on short-term profit making. Thus, they would not provide lasting benefits to the East Coast.

One-fifth of those sampled favoured a mixture of state and private company involvement in forestry development. These respondents suggested that this would ensure that partial public control would be retained and that social objectives could be serviced. This mix would also allow the advantage of incorporating the greater efficiency and expertise which characterise private companies, and at the same time limit the extent of foreign ownership.

Nature of plantation forestry
The respondents were asked to react to a series of statements in order to establish their perceptions of, and attitudes towards, the nature and possible impacts of forestry on the East Coast. Seventy-five per cent of respondents agreed and 20 per cent strongly agreed that forestry development would create jobs in the East Coast region. The suggestion that new forestry jobs would encourage return migration by people originally from the East Coast was strongly supported by 10 per cent, while 67 per cent agreed with the statement and only 23 per cent disagreed with this statement. A majority felt that this return migration would be beneficial for the East Coast. Approximately 81 per cent of those sampled felt that jobs generated by forestry development would promote the migration of new residents to the East Coast and 80 per cent felt that this would be to the benefit of the region. Eighty per cent felt that forestry would assist the economic development of Maori communities on the East Coast.

Most respondents (80 per cent) were in support of encouraging private landowners to plant trees on their property (25 per cent strongly agreed and 55 per cent agreed). There was general support for the suggestion that forestry was better in terms of soil conservation than alternative land uses, with 14 per cent in strong agreement, 64 per cent in agreement, and 22 per cent disagreeing with this statement.

When asked whether exotic forestry development was preferable to forestry development based on indigenous tree species only 10 per cent strongly agreed, 44 per cent agreed, while 41 per cent were in disagreement and 5 per cent strongly disagreed. The 46 per cent support for forestry development based on indigenous tree species is representative of a group of respondents who perceive that forestry is beneficial to the East Coast but that it should not be based solely on exotic species. Respondents were also questioned as to whether indigenous species, such as kanuka and manuka, should be cleared to allow the planting of exotic forest. Thirty-nine per cent disagreed that there should be clearing and 13 per cent strongly disagreed. Thirty-seven per cent agreed that clearance should take place while 11 per cent were in strong agreement.

CONCLUSION
Presented with various options for development in the East Coast region, the preferences of those we surveyed were split evenly between farming and forestry. The perception was that farming would create the greatest economic benefits for East Coast rural areas whereas industrial development would be most beneficial to Gisborne. Tourism was perceived as providing the greatest short-term returns for the East Coast, but a majority of respondents felt that over the longer term forestry would provide the greatest benefits. There were important differences in opinion between urban and rural areas, however, with the strongest support for forestry in the urban areas whereas the strongest support for farming was based, the rural areas. Support for farming and forestry also differed on the basis of ethnic group, with more New Zealand Europeans favouring farming in comparison to New Zealand Maori and other ethnic groups, who tended to support forestry.

A majority of respondents supported forestry as an option for development. People perceived that the benefits associated with forestry development included employment generation, soil conservation and the stimulation of regional economic development. Alongside the perceived benefits were a number of concerns linked to forestry development, though. The problems referred to included infrastructural issues (e.g. roads), the removal of productive land from farming, rising land prices, and the concentration on a single species for planting. The majority of respondents preferred that private companies should carry out forestry development on the East Coast, although many people claimed a role for the State in the promotion of the forestry industry. The real issue, however, tended to be New Zealand ownership rather than foreign ownership. The majority of respondents highlighted a number of advantages associated with forestry development but responses were more or less evenly divided over the role indigenous species should play in forestry development on the East Coast and the clearing of indigenous species, including kanuka and manuka, to allow planting of exotic forests.

The programme that was broadcast on National Radio (and mentioned in the introduction to this paper) was highly critical of the current forestry scheme operating on the East Coast and it was implied that there was pervasive community resistance to forestry and the ECFP in particular. As this paper has indicated, the issues are in no way as clearly defined as the programme suggested. There is widespread local support for forestry development in the East Coast region, although significant disparities do exist between the attitudes held by rural and urban residents in general and among ethnic groups represented in the East Coast region.

What the survey also helps to confirm is that many of the issues surrounding the social effects of forestry expansion that
were considered during the 1980s remain at the forefront of people’s concerns today. This is not surprising, since although much of the planting under the ECFP is likely to be on family farms, there is a widespread perception that forestry today is as much a corporate enterprise as it ever was. Thus, shifts in tenure, ownership and political power within rural areas are still anticipated, as are the direct effects upon communities, such as depopulation. The validity of these beliefs in respect of the ECFP is yet to be established with any real authority, but as long as these exist within some quarters, the expansion of plantation forestry will continue to be treated by some with a measure of suspicion and possibly even resentment.

ACKNOWLEDGEMENTS

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REFERENCES


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Resource Accounting and the New Zealand Plantation Estate: Implications for the National Accounts

Dr Hugh Bigsby1 and Donald L. Grebner2

Abstract

The paper provides a worked example of how forest resources can be incorporated into the national accounts by treating forests as 'materials in process'. The methodology is applied to New Zealand's existing plantation estate to simulate future contributions of forestry to economic growth. New Zealand has a past history of planting cycles, with the plantation forest estate more than doubling in size from 1960 to 1980, and the current age class distribution is very uneven. The paper shows that the current positive contribution of the plantation forest estate to economic growth has the potential to become negative in the future. Various scenarios are evaluated under which forestry continues its positive contributions.

Introduction

New Zealand's exotic plantation estate expanded rapidly from the 1960s, rising from 352,000 hectares in 1960 to 846,000 hectares in 1980 (Ministry of Forestry 1993). The increase in area was sufficiently large that in 1978 it was decided to expand the coverage of the System of National Accounts (NZSNA) to incorporate the changes to the forest estate. Changes to the plantation estate have since been captured in the national accounts. Based on the modified NZSNA, changes to the value of the plantation stock have contributed, on average, to an annual increase in total GDP of around 1.5% over recent years. In addition, changes to the value of the plantation stock have made up about 25% of the total contribution of the forest sector to GDP.

Although expansion of the plantation estate is currently adding significantly to GDP growth, an interesting factor is how changes to the plantation estate will continue to affect GDP in the future. If the plantation estate had been expanded at a constant rate and then stopped when there were equal areas in each age class, then it would be expected that at some point in the future the change in the value of forest stocks would also fall to zero. If the plantation estate continued to be expanded at a constant rate it would also be expected that the change in value of forest stocks would stabilise at a constant growth rate. The actual situation in New Zealand though, is that planting has occurred in cycles with almost 30,000 hectares difference in area between some age classes. This has implications for what will happen to the change in the value of stocks in the future. New Zealand is also continuing to plant genetically improved stock and expand the area of the plantation estate, both of which will have implications for how the plantation estate will affect the contribution of the forestry sector to the national accounts in the future.

The purpose of this paper is to study the effect of New Zealand's plantation estate on the national accounts and economic growth in the future. This is done by outlining the basic theory and approach, discussion of the data which was used, and then the development of scenarios. The scenarios will simulate the effects of the current area and age class distribution, and the effects of alternative planting rates. The scenarios will provide the basis for policy suggestions and future directions of research for forest resource accounting in New Zealand.

Accounting for Production Forests

The basic approach for incorporating plantation forests into the national accounts is discussed in Bigsby (1995). The national accounts permits the growth and silvicultural activities of forestry to be approached on the basis of value adding an input in a production process with the eventual product being a log. In this way, the forest is treated as a collection of growing trees or stands that are ‘material in process’. The approach works through the

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