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Preliminary Cost Benefit Analysis: Proposed NES for Plantation Forestry

Prepared by Covec Ltd and Catalyst R&D

for

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We help organisations to solve problems and make decisions using our core skills of economics, forecasting, research and public policy.

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Executive Summary

As a result of concerns raised by the forestry industry, MfE has carried out work to address the inconsistency of planning controls across district and regional plans as they relate to plantation forestry. One of the options for dealing with this inconsistency is to develop and implement National Environmental Standards (NES) for forestry.

If implemented, an NES would provide planning controls for plantation forestry, including establishing thresholds for when resource consent would be required from district and regional councils. The standards would ensure that district and regional planning controls are consistent across the country and that information needed to determine erosion susceptibility is also nationally consistent.

This report provides a preliminary cost-benefit analysis of an NES for plantation forestry. It identifies the potential impacts of an NES and, where possible, provides indications of the potential magnitude of these costs and benefits.

Because an NES would standardise forestry activity rules across the country, it would have different impacts depending on the rules that would otherwise apply in any given location. Specifically, an NES could result in either:

1. more stringent rules being applied in a given area, resulting in some activities having stricter activity status or stricter terms and conditions, eg activities that were previously permitted may require resource consent; or
2. more lenient rules being applied in a given area, resulting in some activities having more lenient activity status or more lenient terms and conditions, eg activities that previously required resource consent could instead be permitted.

In addition to location specific outcomes, an NES would also generate impacts on a nationwide basis. For instance, the greater consistency in rules across the country would mean that forestry operators would not be required to research, interpret and apply different rules whenever they carry out forestry activities in different districts or regions.

Location-specific impacts

In areas where an NES would lead to rules that are more stringent than the status quo, more forestry activities may become subject to resource consent processes. For instance, in areas where there are currently no specific forestry rules, forestry operators may need to obtain resource consent or meet more stringent terms and conditions to obtain permitted activity status, even if consent is not required. Either of these outcomes could give rise to additional costs for both the forestry sector and councils. These may include increased:

- consent application costs for forestry operators;
- consent processing costs for councils;
- monitoring costs for forestry operators and councils;
- dispute costs for both councils and forestry operators; and
- costs of delays for forestry operators.

As well as these increased resource consent costs, more stringent standards could increase the cost of carrying out certain activities. For example, if an NES led to the setback requirements being increased in a particular district or region, this would impose a cost on local forest owners as fewer trees could be grown on forest blocks in that area. This would reduce the return to affected forest blocks.

In addition to these costs, more stringent rules could result in improved environmental outcomes in affected areas if the rules restricting harmful activities are tightened.

Alternatively, in areas where an NES were to instead result in more lenient rules, the opposite impacts may arise. That is, there may be reduced resource consent application and processing costs, fewer disputes, etc. Additionally, more lenient rules could give rise to an increased risk of negative environmental outcomes, for instance if an NES were to allow harmful activities in erosion-prone areas where such activities are not currently allowed. Table 1 summarises these location-specific costs and benefits.

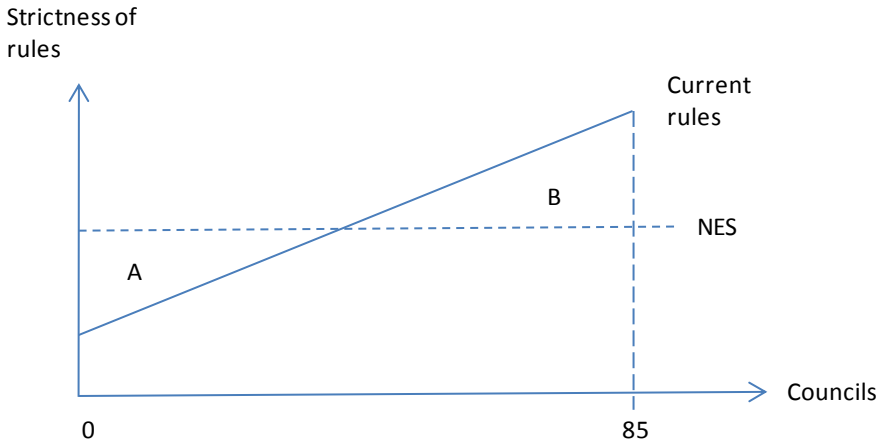
Table 1: Expected benefits and costs of an NES by relevant area

Relevant Area	Benefits	Costs
Locations with more stringent rules from NES	• Potential environmental benefits	• Increased consent application costs for sector • Increased consent processing costs for councils • Increased monitoring costs for councils or sector • Increased dispute costs • Increased delays for sector • Increased costs for some forestry activities
Locations with more lenient rules from NES	• Reduced consent application costs for sector • Reduced consent processing costs for councils • Reduced monitoring costs for councils or sector • Reduced dispute costs • Reduced delays for sector • Reduced costs for some forestry activities	• Potential environmental costs

To the extent that the rules in an NES are intended to be an 'average' of existing rules from district and regional plans, the number of locations for which rules would become more stringent may be roughly similar to that for which existing rules would become more lenient. If the prevalence of forestry activities that occur within these two different areas is also roughly similar, the different location-specific costs and benefits that may arise from an NES could roughly offset each other. Whether this would be the case in practice is a key consideration. The overall net location-specific impact would depend largely on how the specific rules within an NES compare to existing rules, and how such changes would affect forestry activities carried out in any given location.

This difference in impacts across districts and regions is represented in Figure 1 below. The current rules are represented by the upwards sloping line which indicates that in some areas the rules are more lenient whereas in other areas the rules are more stringent. The horizontal dashed line represents the 'equalised' rules after the implementation of an NES. Area A represents the impacts that would occur in areas where an NES leads to rules that are more stringent, eg increase resource consent costs, environmental benefits, etc. Area B represents the impacts that would arise where an NES would result in rules that rules are more lenient.

Figure 1: Location-specific impacts of an NES



The net impact of these location-specific impacts would depend on whether the impacts in Area A outweigh those in Area B. As outlined, this depends on the extent of forestry operations each area, and how these operations are affected by the difference in rules for each of the eight activities that would be included in an NES. As there may be up to 15 terms and conditions for each of the eight activities, determining the impacts across each of the 85 different districts and regions could mean analysing around 1,500 different variables. Analysis of this complexity is outside the scope of this report.

Nationwide impacts

As well as location-specific impacts, a number of costs and benefits from an NES would apply on a more nationwide basis. The main such costs would be one-off implementation (adjustment) costs which would be faced by both central and local government and by the forestry sector.

Regarding the magnitude of implementation costs, perhaps the largest costs would be the costs councils could face in having to adjust to an NES. These costs could be $2,500 to $20,000 per council for simple adjustment processes. Alternatively, these costs could be considerably larger if councils were required to identify certain features, such as wahi tapu or archaeological sites, wetlands, or hazard areas. This could require engaging specialist expertise and carrying out a public consultation process. In this case, the costs incurred by councils could range from around $100,000 to $200,000. Assuming that the majority of councils undertake relatively simple adjustments, the total magnitude of these costs could be in the vicinity of $1 million.

Additionally, the total implementation costs incurred by MfE in relation to guidance, workshops and technical advice are estimated to be around $80,000. The central Government would also incur around $40,000 in the process of erosion mapping associated with an NES. The forestry sector would also incur adjustment costs in relation to an NES, although the sector has indicated that these are likely to be relatively minor.

The corresponding nationwide benefits that could arise from an NES include:

- Reduced costs to forestry operators from greater consistency in rules. This consistency would:
    - Avoid the costs of researching, interpreting and briefing operators on different rules for each forestry operation that occurs in a different district of region. This could generate total benefits of around $2.5 million;
    - Increase compliance (ie fewer breaches), which could reduce the costs of enforcement action for councils and legal expenses and remedial costs for forestry operators;
    - Provide greater certainty for the sector regarding rules in the future;
- Avoided plan change costs that would be incurred by councils who otherwise carry out consultative processes to alter forestry activities in district or regional plans. The magnitude of these avoided costs would tend to range from $20,000 for straightforward changes, but could exceed $100,000 in cases which require extensive public consultation. In total, these benefits could be in the vicinity of $1 million;
- Avoided submission costs for forestry sector and others who would otherwise submit on district and regional plan changes. The costs that may be avoided could be in the vicinity of $10,000 for a typical submission, but in some cases these costs can exceed $100,000. In total, these could generate benefits of around $500,000;
- Reduced lobbying activity by the forestry sector, which may occur if the industry goal of obtaining greater consistency is achieved; and
- Potential environmental benefits from any increase in forestry investment. Forestry may increase because of reduced regulatory compliance costs and reduced regulatory risks. Specific benefits could include improved water quality and increased carbon capture.

Table 2 below provides an indication of the potential magnitude of individual impacts. At this point it is not possible to determine the overall total magnitude of each cost or benefit without estimating the number of councils, plan changes and forestry operations that would be affected by an NES.

However, although the total magnitude of many of these nationwide impacts is uncertain, the fact that there is likely to be a range of benefits that would continue to accrue over time suggests that these may well exceed the expected costs, which are more likely to be of a one-off, transitional nature.

Table 2: Indicative total magnitude of nationwide impacts

Benefits	Costs
Avoided plan change costs for councils • Possible magnitude $1m	One-off implementation costs for councils • Possible magnitude $1m
Avoided plan change submission costs for sector & other stakeholders • Possible magnitude $0.5m	One-off implementation costs for Govt, • $120,000
Avoided research, interpretation and briefing costs for sector • Possible magnitude $2.5m	One-off implementation costs for sector • Possible magnitude, < $100,000
Avoided enforcement & remediation costs from increased compliance by sector • Unknown	
Increased certainty for sector • Unknown	
Reduced lobbying by sector • Possible magnitude, <$10,000	
Potential environmental benefits from more forestry • Unknown	

Note: The value of benefits that would accrue in future years would need to be discounted to provide an accurate comparison against one-off implementation costs.

Preliminary finding

This analysis suggests that the total impact of nationwide effects is likely to be a net benefit, whereas the total impact of the various location-specific effects is uncertain. Consequently, it is not yet possible to determine the likely overall net impact of an NES.

1. Introduction

This report applies a cost-benefit analysis framework to the proposed NES for plantation forestry to evaluate its potential net impact.

1.1. Background

As a result of issues raised by the forestry industry, MfE has carried out work to address inconsistency of planning controls across district and regional plans as they relate to plantation forestry. One of the options for dealing with the issue of inconsistency is to implement an NES. It is proposed that the NES would apply only to plantation forestry and not other land uses.

If implemented, an NES would provide planning controls for plantation forestry where viable, including establishing thresholds for when resource consent would be required from district and regional councils. The standards would ensure that:

- district and regional planning controls are consistent (present controls are variable)
- information needed to determine the sensitivity of receiving environments and erosion susceptibility is nationally consistent.

District and regional controls have been drafted in support of the proposed NES.

1.1.1. Forestry sector[1]

Plantation forests cover approximately 1.8 million hectares (7%) of New Zealand's land area, nearly three quarters of which is located in the North Island. In 2009, 42,000 hectares of forest was harvested producing just under 20 million m^3 of logs. Around 90% of all plantation forestry consists of radiata pine.

The forestry sector accounts for approximately 4% of GDP and generates exports of around $600 million.[2] Around 6,000 people are directly employed in the sector, with a further 11,000 employed in related activities, including log sawmilling, timber re-sawing and the manufacture of plywood, fabricated wood, pulp and paper.[3]

The total number of forest owners may be around 12,000.[4] The seven largest owners own forests of over 50,000 hectares, while around 100 owners have forests that are over 1,000 hectares, accounting for 70% of total forests by area. Around 2,000 owners have forests larger than 40 hectares. Over 90% of plantation forests are privately owned.

Although some forest owners also manage their own forestry operations, forest management services are often outsourced to independent forest management

[1] Unless stated otherwise, figures sourced from Ministry of Agriculture and Forestry, National Exotic Forest Description, 1 April 2009.

[2] Ministry of Agriculture and Forestry, Forestry Facts and Figures, 2008/2009.

[3] Statistics New Zealand, Business Demography Statistics, 2009.

[4] Source: Discussions with forestry sector participants.

companies. A large proportion of the forest management services supplied in the sector are provided by a relatively small number of larger companies. This includes the likes of Timberlands Ltd, Hancock Forest Management, Nelson Forests Ltd, PF Olsen, New Zealand Forest Managers, Forest Enterprises, Forest Management New Zealand and the Forest Management Group.

Reliable figures figures regarding the number of resource consents provided for forestry activities across the country (eg road building, stream crossing, harvesting, etc) are not currently available.

1.2. The proposed NES

The proposed NES for plantation forestry includes:

Permitted activity status (no resource consent required, subject to conditions) for:

a) afforestation in a rural zone;
b) replanting in a rural zone;
c) for mechanical land preparation in a rural zone;
d) for harvesting in a rural zone;
e) thinning and pruning to waste operations in a rural zone;
f) earthworks in a rural zone on terrain with low susceptibility to erosion;
g) quarrying in a rural zone;
h) waterbody crossings in a rural zone.

Controlled activity status (resource consent required) for:

a) harvesting in a rural zone on terrain with high susceptibility to erosion;
b) earthworks in a rural zone on terrain with moderate susceptibility to erosion;

Restricted discretionary activity status (resource consent required) for:

a) earthworks in a rural zone on terrain with high erosion susceptibility to erosion;
b) afforestation in a rural zone on terrain with high susceptibility to erosion.

1.3. Analytical approach

This report provides a preliminary analysis of the potential costs and benefits of the proposed NES. This analysis requires that the likely impacts, including environmental effects, are identified and categorised as costs or benefits to the wider society. Because cost-benefit analysis is applied from the perspective of society as a whole, only those costs imposed on (or benefits received by) one party that are not offset by benefits (or

costs) to another party are included. 'Transfers' from one party to another do not generate a net impact on the overall welfare of society and so are not included in the analysis.

However, although transfers have no net impact on welfare, they can raise equity concerns, as one party or group may benefit at the expense of another. For this reason, potentially significant equity concerns arising from an NES are outlined in this report.

In accordance with conventional economic analysis, costs include the value of resources that would be utilised as a result of implementing the proposed NES. Resources used in this manner constitute 'opportunity costs' to society if these resources could otherwise be put to an alternative use. For example, funds used by public sector organisations in the implementation of an NES could otherwise be used for other public policy objectives.

Regarding environmental impacts, this analysis assumes that any improvement in environmental outcomes constitutes a benefit to the wider society. Conversely, any detrimental environmental impacts are considered costs. Given the difficulty in quantifying these impacts, qualitative descriptions are provided.

1.3.1. Discount rate

To ensure that future impacts are compared appropriately against current impacts, future impacts quantified in monetary terms have been discounted. The rate used for discounting future impact in this analysis is 8%. This is consistent with that used by the Treasury for cost-benefit analysis of public sector projects.[5] The time period used for analysis in this analysis is 20 years.

1.3.2. Status quo

To provide an accurate evaluation of the potential impacts of an NES, its likely impacts need to be assessed against the likely counter-factual scenario, ie the continuation of the status quo. The existing system imposes a range of costs, largely on councils and the forestry sector, and generates various benefits, chief of which is environmental protection. One of the main costs of the current regime is the cost of the resource consent process in which consents are needed to allow forestry activities.

Depending on the complexity of the rules in each region or district, the charges imposed on applicants seeking consents are typically a few thousand dollars, but can range from zero to tens of thousands of dollars. In extreme cases, these costs can be even higher. In cases where disputes have arisen, the costs associated with associated litigation and dispute resolution can cost forestry operators and councils hundreds of thousands of dollars. The costs of any monitoring of consented activities carried out by councils are also typically passed onto forestry operators. Similarly, councils that process consent applications and monitor activities can incur costs that may not be fully recovered from applicants.

[5] The Treasury, "Public Sector Discount Rates for Cost Benefit Analysis" July 2008.

Accurate figures regarding the annual number of consents and plan changes throughout the country are not currently available. Although typical magnitudes for both the forestry sector and councils related to these activities have been estimated (See Sections 3 and 4), these costs vary substantially. Consequently, there is currently insufficient information available to reliably estimate the total cost of these requlatory requirements for either the forestry sector or councils.

A notable feature of the current regime is the complexity, diversity and unnecessary duplication of rules governing forestry activities across different regions and districts. As well as giving rise to costs for operators who may need to research, interpret and apply different rules for each area they work in, the difference in rules across the country means that there is more likely to be confusion amongst those working in the sector as to the appropriate rules in any given area. This contrasts with some other countries where rules are well-known by those working throughout the industry, not just by those individuals working on regulatory compliance.

This complexity and resulting lack of understanding may contribute to breaches of rules and conditions, which can generate enforcement and remedial costs for councils and the forestry sector respectively.

The diversity of rules across councils also means that those in the forestry sector may be faced with substantial costs if they wish to submit on any plan changes that may impact on forestry activities.

The main beneficial impacts of the existing resource consent process are the environmental benefits that are generated. That is, the rules that currently govern forestry activities work to prevent damage to the environment that may otherwise occur. The current regime also allows area-specific controls to address local land-use issues. This can allow the impacts of forestry activities on nearby residents to be mitigated.

1.3.3. Comparison of NES with status quo

Given the status quo, the cost and benefits outlined in this analysis include only those that would occur if an NES were implemented. Any impacts that would occur regardless of whether an NES were implemented are not relevant to this analysis. For example, some territorial authorities have already instituted rules that are similar to those that would result from the proposed NES. Consequently, councils and forestry owners in these areas may not incur any significant additional costs, or obtain any additional benefits, from the proposed NES.

In this analysis, we have assumed that the counter-factual situation that would eventuate in the absence of an NES is that district and regional plans throughout New Zealand would continue to apply as they do now. These rules are likely to change over time in at least some districts and regions because they would be subject to normal plan change processes that occur from time to time.

It is against this counter-factual scenario that we have identified and categorised the likely positive and negative effects (ie costs and benefits) that would result from an NES.

These impacts, including environmental impacts, are considered from the perspective of the wider New Zealand society. This means that all impacts on both public and private sector organisations and individuals are relevant.

Costs that are not relevant to this analysis include those incurred by both MfE and various stakeholders in the consultation process, eg producing a discussion document and preparing submissions respectively. These costs are not relevant to this analysis because they would be incurred regardless of whether or not an NES is ultimately introduced.

1.3.4. Limitations

This report provides a preliminary analysis that seeks to identify the costs and benefits that may arise from an NES. A final cost-benefit is outside the scope of this report. One factor that precludes a more certain evaluation is that the precise impacts of an NES are contingent on the specific detail of the standards that would be introduced in a finalised NES. Additionally, the significant variability of the impacts of an NES across different regions and districts means that it is beyond the scope of this preliminary analysis to generate quantitative estimates for all of the potential costs and benefits.

In particular, the impact of an NES on specific activities depends on the extent of forestry operations each area, and how these operations are affected by the difference in rules for each of the eight activities that would be included in an NES. As there may be up to 15 terms and conditions for each of the eight activities, determining the impacts across each of the 85 different districts and regions could mean analysing changes in up to 1,500 different variables. Furthermore, without additional information from the sector about how forestry operations would be altered in response to these changes in rules, terms and conditions in any given area, it is not possible to predict how these changes would affect decisions by forestry operators to apply for consent. Consequently, analysis of the complexity necessary to infer the overall expected net impact of an NES is outside the scope of this report.

The grouping areas of plantation forest into the different categories outlined in Section 2. below also requires obtaining extensive data from the forestry sector and councils. If additional data were obtained, more detailed analysis and modelling of the impacts of an NES across all relevant districts and councils could be undertaken. This would allow a more detailed cost-benefit analysis. Additional information useful for quantitative estimates of costs and benefits might also be gathered from stakeholders who engage in the upcoming consultation process. In the absence of more advanced modelling, this report provides indicative examples of the potential magnitude of individual impacts.

Similarly, further engagement with stakeholders through the consultation period could provide a basis for gaining a better understanding of the counter-factual scenario that would eventuate if an NES were not implemented. Because many of the various District and Regional Plans are likely to change over time, better informed assumptions regarding what changes could be expected under the status quo would allow more accurate quantitative estimates of the costs and benefits of an NES.

Prior to any such quantitative cost-benefit modelling, this preliminary report includes some examples of potential impacts. The examples used should not be considered to be indicative of all costs or benefits, but may represent possible impacts. Actual impacts may vary substantially depending on location and the precise wording of an NES.

2. Geographic variation in effects of NES

Before evaluating the individual costs and benefits of the proposed NES, we consider what outcomes are likely to result from its implementation. We then compare how these outcomes would differ from what would otherwise occur under the status quo.

Whether an NES would lead to a change in outcomes in any given area largely depends on how the rules in an NES would differ from the rules that would otherwise exist in a given area in the absence of an NES.

Currently, councils implement rules concerning forestry activities through Plan rules or Bylaws. An NES implemented through legislation would effectively 'override' rules within the scope of the NES and each local or regional council would be required to enforce the same standard. An exception to this is if the NES allows Regional and District Councils to have more stringent standards for specific activities.

Additionally, some areas do not currently impose effective rules in relation to forestry activities. If an NES were not introduced, and even if the standards it contains were published as guidance, these areas may have significantly different outcomes compared to what would occur with an NES.

Consequently, for any particular area of forest, an NES could have one of two possible outcomes depending on the rules that would otherwise apply in that area. Specifically, an NES could result in:

1. more stringent rules being applied in a given area, resulting in some activities having stricter activity status or stricter terms and conditions, eg activities that were previously permitted may require resource consent; or
2. more lenient rules being applied in a given area, resulting in some activities having more lenient activity status or more lenient terms and conditions, eg activities that previously required resource consent could instead be permitted.

In addition to location-specific outcomes, an NES would also generate effects on a national level. For instance, forestry operators would not be required to interpret and apply different rules in each different district or region within which they operate.

Although an NES may not alter the consent status of many forestry activities directly (eg from permitted to restricted discretionary), the nature of the terms and conditions that apply to a number of permitted activities may change. To the extent that the terms and conditions that apply in some areas would be relaxed, activities that would not have met the current terms and conditions and would have required resource consent would instead become permitted. In contrast, to the extent that terms and conditions of permitted activities become more stringent in some areas, those activities that would not meet these more stringent rules would instead require resource consent.

2.1. Locations where NES would lead to more stringent rules

In some areas an NES would lead to more stringent rules applying to forestry activities, either by amending existing rules or by introducing rules where currently none exist. In these areas it would have several impacts.

There would be a greater need for forestry operators to obtain resource consents, or adhere to permitted activity terms and conditions, than previously. In those areas where currently there are no rules governing forestry activities, this could also decrease the flexibility for forestry operators regarding the timing of activities such as harvesting. This is because of new requirements to provide information which must be accepted by councils before activities can be carried out, eg harvesting plans, water monitoring data, etc.

The costs incurred by the forestry sector in carrying out certain activities may be increased as a result of more stringent rules. For instance, if higher standards are required for harvesting activities or culvert pipes, costs may rise. Similarly, any increase in setback requirements may reduce the value of affected forest blocks.

Areas that would be subject to more stringent rules may also experience improved environmental outcomes.

2.2. Locations where NES would lead to more lenient rules

In some areas an NES would lead to more lenient rules applying to forestry activities. This could give rise to several impacts, including reducing the likelihood that resource consents would be required for various activities. This would in turn reduce the likelihood of disputes occurring and reduce potential delays in obtaining consent. This could provide forestry operators with greater flexibility regarding the timing of activities such as harvesting.

Areas that would be subject to more lenient rules could experience worse environmental outcomes.

2.3. Nationwide impacts of NES

There are a various impacts of an NES that would be expected to occur on a nationwide basis. One major impact of an NES would be to greatly reduce the complexity and diversity of the existing rules concerning forestry activities. These rules currently range significantly across districts and regions. An NES would increase the simplicity, and reduce costs, for forestry operators that currently have to become familiar with different rules that apply across forests in different locations. This increase in simplicity and standardisation may reduce the likelihood of breaches as the rules in an NES would become widely known and implemented throughout the entire sector.

An NES would also increase the certainty for the forestry sector regarding these rules into the future and would largely remove the ability of councils to carry out plan changes relating to forestry activities. This would reduce the costs to the councils, the forestry sector and other stakeholders (eg NGOs) of submitting and appealing plan provisions.

Instead, there would be a one-off consultation process in relation to the NES itself, after which councils, the forestry sector and Resource Management Act practitioners would adjust to the new rules. MfE may also undertake workshops and provide guidance material. Implementing an NES would also cease the current lobbying by the forestry sector for this regulatory change.

As a result of a reduction in the costs to the forestry sector of complying with regulation, one impact of an NES may be to increase the relative attractiveness of forestry investment. This may lead to a larger amount of land used for forestry than would occur otherwise. For example, the degree to which land used for forestry is converted for alternative uses, such as dairy farming, could be reduced. This could lead to improved environmental outcomes.

3. Costs

The costs of an NES include the resources used in some way in response to the NES that would otherwise be available for other purposes. These costs can be categorised into two groups: costs that apply on a nation-wide basis; and costs that vary depending on location.

Costs that would apply in a largely consistent basis on a nation-wide basis include one-off implementation (transition) costs which would be faced by both central and local government and by the forestry sector.

Costs that would vary depending on location include those that could arise if an NES were to lead to more stringent rules, including:

- increased resource consent costs, if an NES ensured that certain activities were to have stricter activity status or stricter terms and conditions, eg activities that were previously permitted may require resource consent; and
- increased costs of certain forestry activities that would have to adhere to higher standards.

Another potential cost that would vary on a location basis is any additional negative environmental impacts if an NES led to more lenient rules in some areas. For example, an NES may allow harmful activities in erosion-prone areas where these activities are not currently allowed.

3.1. Implementation costs

The introduction of an NES would require changes and impose costs on both councils and central government organisations (administrative costs) and the forestry sector. These costs would be one-off costs incurred in the transition from the status quo to an NES and are likely to apply across the country.

3.1.1. Implementation costs on central and local government

The implementation of an NES is likely to generate two main administrative costs:

1. Costs to central government of implementation;
2. Costs to councils of amending plans and notifying changes; and

After the completion of the current consultation process, any decision to introduce an NES would generate implementation costs for central Government. These would include the costs of educating stakeholders incurred by MfE, for example by providing workshops and guidance material, and of providing erosion mapping information. The total administrative cost of workshops would be in the vicinity of $20,000, with the cost of generating guidance material estimated at around $50,000, technical advice around $10,000 and the costs of providing councils with erosion mapping information an estimated $40,000.[6]

[6] Source: Forestry sector and MfE estimate.

Even though not required by legislation, the introduction of an NES could also lead many councils to change their existing plans to incorporate the new rules, including changing policies and objectives where a conflict with NES rules occurs. Work would be carried out by council practitioners interpreting the NES, determining what impact it would have on existing rules and plans and educating staff of the new rules. External costs of this adjustment process may include obtaining legal interpretations of the NES and the costs of notifying these changes to interested parties, eg advertising. Based on discussions with selected councils, the total cost of this process for an individual district or regional council could range from $2,500 to around $20,000.

However, these costs could be considerably larger if Councils were required to identify certain features, such as wahi tapu or archaeological sites, wetlands or hazard areas. This could require engaging specialist expertise and carrying out a public consultation process. In this case, the costs incurred by councils could range around $100,000 to $200,000 per council. Assuming that the majority of councils (eg 80) incur minor implementation costs, say $5,000, and a small minority (eg 5) incur large implementation costs, say $100,000, the total cost to councils could be in the order of $1 million.

3.1.2. Implementation costs on the forestry sector

The implementation of an NES is likely to generate one-off adjustment costs for the forestry sector as it adjusts to new standardised rules. This is because any change in rules brought about by an NES would need to be interpreted and understood by both the forestry sector and by RMA practitioners. These parties would incur costs (eg time) in interpreting and reviewing the changes brought about by an NES. However, the magnitude of these adjustment costs is likely to be relatively minor as the majority of consent applications would carried out by five or six large firms.[7]

3.2. Increased resource consent costs

In areas where an NES would lead to more stringent rules (eg if activities that were previously permitted would instead require consent), ongoing costs could be generated regarding resource consents required for certain specified forestry activities. Any increased use of the resource consent process in these areas would generate additional costs for councils and, to a larger extent, applicants.

3.2.1. Consent costs for councils

Any increase in resource consent requirements would increase the administrative burden on affected councils. However, many of these costs are passed onto applicants in the form of consent application charges levied by councils. Consequently, it is only that portion of expenses that are not recovered from applicants that would constitute (net) costs to councils. The degree of cost recovery varies across councils, with some councils attempting to carry out full cost recovery whereas others do not seek to recover any application processing costs. The status of the consent also influences whether councils can directly recover costs.

[7] Source: Discussions with selected forestry sector participants.

Because in most cases Councils attempt to recover the majority of the costs they incur in processing consent applications, the remaining, unrecovered, administrative costs are a relatively small proportion of the total consent application costs, at least in relation to charges passed on to applicants. Although figures are not available for forestry consents, the average unrecovered administrative cost incurred by councils in relation to resource consents obtained by Telecom during its nationwide roll-out of roadside cabinets and cell sites was estimated at around $2,600 per consent application.[8]

3.2.2. Consent costs for forestry sector

The resource consent application costs incurred by the forestry sector can be grouped into three types:

- (external) council charges; and
- (internal) costs of preparing consent applications.

As well as council charges for processing applications, forestry sector operators incur costs in the preparation of consent applications. These costs can include the time and expense incurred in deciphering and interpreting the relevant plans and developing applications and planning activities that adhere to the rules within these plans. These rules, along with the structure, approach and layout of plans, often differ across districts and regions. Even within a particular area, rules that govern certain forestry activities may be contained in several different plan documents and may not be cross-referenced. Additionally, plans rules are subject to change at the discretion of individual councils and can vary over time.

These factors can impose substantial interpretation and planning costs for the forestry sector. These costs can arise not only in relation to carrying out the same activity across different areas, but may also arise in carrying out the same activity within a certain area over time. By standardising these rules to a much greater degree, an NES could lead to a substantial reduction in these interpretation, preparation and planning costs.

The resource consent costs faced by the forestry sector could vary considerably depending on a number of variables, including the nature of the activity in question, the location, etc. According to selected forestry sector participants, the typical cost of internal staff time and other expenses incurred in the preparation of resource consent applications may be around $5,000, but may range up to around $20,000 per application. Additionally, typical application charges levied by councils may be in the vicinity of $1,500 for simple applications, but can be significantly larger for more complex applications, eg $10,000.

3.2.3. Dispute costs

Disputes regarding the consenting of forestry activities typically arise because either:

- applicants challenge councils' decisions if consent is not given or certain conditions on activities are imposed; or

[8] MfE, Proposed NES for Telecommunications Facilities, Analysis of the Costs and Benefits, August 2008.

- third parties challenge councils' decisions for providing consent or certain conditions are not imposed.

The specific costs that can arise include the time spent and expenses incurred in resolving disputes, eg preparing submissions, attending hearings, hiring legal representation, court time, etc. These costs would be minor if a dispute is resolved quickly and informally, but may be substantial if a case is heard in the Environment Court. Councils tend to budget around $50,000 per appeal.[9] Given that there will be one or more other parties involved in a dispute, this suggests that the total costs imposed on all parties can exceed $100,000. In one recent case, the total dispute costs were in excess of $1 million.[10] However, a more typical magnitude for the costs generated by a dispute may be around $10,000 to $20,000.[11]

In areas where an NES were to result in rules that are more stringent, eg more activities were to require consent, there could be greater scope for more disputes. Additionally, an NES that imposed rules on some forestry activities could give rise to inconsistency if different rules were to apply to the same activities when carried out for other, non-forestry, purposes. For example, earthworks carried out in the course of forestry activities could be permitted. In contrast, earthworks carried out for sub-division development could require consent. This inconsistency could give rise to disputes and challenges.

3.2.4. Compliance monitoring and data costs

In addition to the costs of consent application processes, forestry operators may also face additional monitoring and information reporting costs. Activities such as water quality monitoring may be requirements of any consent provided by councils.

These monitoring costs typically vary from around $500 to $5,000 per consent.[12] Information reporting requirements can also add to administrative costs for forestry operators.

3.2.5. Potential delays and reduced flexibility regarding harvesting

The introduction of an NES could lead to an increase in the delays experienced by the forestry sector, particularly in areas where there are currently no rules concerning forestry activities. New regulatory requirements introduce the potential for delays to the extent that councils must first provide permission, or obtain information they consider suitable, before forestry operators are entitled to carry out certain forestry activities such as harvesting.

The reduction in flexibility for forestry operators as to when they are able to carry out harvesting activities can have negative consequences if it prevents forest owners from taking advantage of favourable market conditions, ie high log prices or low shipping

[9] Source: MfE.

[10] Source: Peter Weir, Ernslaw One Ltd.

[11] Source: Discussions with selected forestry sector participants.

[12] Source: MfE, discussions with selected forestry sector participants.

costs. Because of the volatility of these prices, delays can have adverse impacts on forest owners. Consequently, any such adverse impact of a delay that arises because of new regulatory requirements would constitute a cost.

Given the volatility of these prices, the timing of harvesting can have significant impacts on the returns to forest owners. For instance, it is not uncommon for prices of logs to change by $5 per tonne over the course of a year (ie a 5% or 10% fluctuation). This can alter the return on a 100 hectare forest block, which could generate around 50,000 tonnes, by around $250,000.[13]

3.3. Increased costs of certain forestry activities

In areas where an NES would lead to more stringent rules, for instance where there are currently no rules, an NES could increase the costs of carrying out certain activities. For example, if an NES were to require that culvert pipes used in a certain area were larger than those currently allowed, this may increase the costs faced by the forestry sector, albeit this impact would be relatively minor.

Additionally, rules governing setbacks could impact negatively on some forest owners if these rules were to become more stringent. If setback requirements were increased because of an NES, this could reduce the amount of forest that could be grown and harvested in a given forest block. A resulting reduction in returns to affected forestry owners, which could be manifested as a reduction in land value, would constitute a cost of an NES.

Another examples of how costs may be increased for the forestry sector is if rules governing harvesting activity that seek to limit scouring are more stringent, eg if logs must be lifted rather than dragged along the ground in certain areas. It is possible that as a result of such a requirement, more roads may need to be used on certain sites. This may not only increase costs for foresters, but may also result in a larger environmental footprint.

In areas where there are currently no rules, an NES could lead to forestry companies applying for code of compliance certificates for permitted activities. Such certification can be used as confirmation that all relevant terms and conditions have been adhered to. The costs of this certification are generally minor, ie around $200.

3.4. Negative environmental impacts

Negative environmental impacts from forestry activities can be 'on-site' or 'off-site' impacts. On-site impacts can include soil erosion, which can reduce the capacity of land to sustain vegetation. Off-site impacts can include:

- Downstream impacts on instream values and ecosystems from increased sedimentation;
- Reduction in flood capacity of waterways because of sedimentation;

[13] Source: Discussions with selected forestry industry participants. A $5 price change may represent a 5% to 10% price fluctuation. Such fluctuations are common within short periods, see: http://www.maf.govt.nz/forestry/statistics/logprices/]

- Harvest debris could harm infrastructure, eg floodgates, bridges, etc; and
- Negative impacts on receiving environments which could be close to urban areas, eg floods and landslips.

The potential for negative environmental outcomes from an NES are perhaps most likely if an NES were to result in rules that are more lenient that existing rules in certain areas, although these impacts would not occur in all such areas. Specifically, if an activity which currently requires consent becomes permitted, there may be less scope for councils, or other effected parties, to object if there are environmental concerns. This is more likely in areas where current rules have been designed to manage specific risks that arise within a particular location or region.

Additionally, allowing some activities to become permitted rather than requiring consent could have an impact on the degree of compliance monitoring that occurs in relation to these activities.

This stems from the fact that, whereas councils tend to recover the costs of compliance monitoring of consented activities via charges, they do not typically charge for any monitoring they carry out in relation to permitted activities. These costs can include staff time and water testing. Although the Local Government Act allows for councils to charge for monitoring in relation to permitted activity conditions, in practice it appears that councils do not institute charges because of the complexity and cost of applying this legislation. Consequently, if an NES were to give more activities permitted status, the costs of monitoring may no longer be imposed on forestry operators, but instead may be passed onto councils.

If councils maintain the same level of monitoring, the outcomes from an NES in terms of monitoring would be unchanged. However, councils could potentially reduce their monitoring activity if they were to face budgetary constraints. Additionally, because the permitted nature of the activities in question may mean fewer reporting requirements, councils may be less aware of the need for specific monitoring in some cases. As a result, less monitoring could occur in these areas. While this may reduce monitoring costs (see Section 4.1.4), it could also increase the likelihood of negative environmental impacts.

4. Benefits

The benefits that may arise from an NES can be categorised into two groups: those that apply on a nationwide basis; and those that vary depending on location.

Benefits that would vary on a geographic basis include those that could arise if an NES were to lead to more lenient rules, including:

- reduced resource consent costs, if an NES ensured that some activities were to have more lenient activity status or more lenient terms and conditions, eg activities which currently require resource consent would instead become permitted; and
- reduced costs of certain forestry activities that would have to adhere to more lenient standards.

Improved environmental outcomes may also arise in areas where an NES led to more stringent rules.

Benefits that would arise on a nationwide basis from an NES could include:

- Reduced costs to forestry operators from the greater consistency in rules ;
- Increased certainty regarding the rules that would govern forestry activities in the future, including that consent will be granted for all permitted and controlled activities;
- Avoided plan change and submission costs;
- Fewer breaches of rules, reducing the costs of enforcement action;
- Reduced lobbying activity by the forestry sector; and
- Improved environmental outcomes to the extent that there is greater forestry investment.

4.1. Reduced resource consent costs

An NES would lead to changes in the rules that apply to various forestry activities so as to remove requirements for resource consent that apply in some areas. As a result, there would be fewer costs associated with the resource consent process for both the forestry sector and on councils (ie lower administrative costs).

4.1.1. Reduced consent costs for councils

If an NES were to reduce the number of activities requiring consent, the (unrecovered) administrative costs imposed on councils from processing consent applications would also be reduced.

As described in Section 3.2.1, the average unrecovered administrative cost incurred by councils in relation to resource consents obtained by Telecom during its nationwide roll-out of roadside cabinets and cell sites was estimated at around $2,600 per consent. The equivalent cost for forestry activity consents could be of a similar magnitude.

4.1.2. Reduced consent costs for forestry sector

If an NES were to reduce the number of activities requiring consent, the costs imposed on the forestry sector in the course of applying for resource consents would also be reduced.

As described in Section 3.2.2, the magnitude of the costs that could be avoided varies. The typical cost of internal staff time and other expenses incurred in the preparation of resource consent applications may be around $5,000, but may range up to around $20,000. Additionally, typical application charges levied by councils may be in the vicinity of $1,500, although charges are often larger for more complex applications, eg $10,000.

4.1.3. Reduced dispute costs

To the extent that an NES would lead to some activities becoming permitted activities rather than requiring consent, this could reduce dispute costs that can be associated with the resource consent process. For instance, it is likely that there would be fewer occasions when applicants would need to undertake costly appeals to obtain consents. Additionally, third parties who might otherwise challenge the granting of consents would be excluded from doing so if activities are instead permitted. This would increase the certainty for the forestry sector of being able to carry out certain activities that would be become permitted as opposed to requiring consent. Furthermore, in contrast to individual plan rules, an NES cannot be challenged except by a judicial review regarding the process carried out in its creation.

As outlined in Section 3.2.3, the costs of a typical dispute may be around $10,000 to $20,000, although the cost of some disputes can be substantially higher.

4.1.4. Reduced compliance monitoring and data costs

To the extent that certain forestry activities in some areas would no longer require resource consent, this would reduce the ability of councils to request data and other information concerning forestry operations. Any reduction in such requests may lead to a reduction in monitoring and reporting costs faced by the forestry sector.

As discussed in Section 3.4, an NES also has the potential to lead to a reduction in compliance monitoring carried out by councils. These typically range around $500 to $5,000.

4.1.5. Reduced delays in obtaining consent

In the process of obtaining resource consents, forestry sector participants can occasionally be subject to delays if Councils do not adhere to the appropriate deadlines. In some cases these delays can have substantial impact on the timing of activities, such as harvesting. This can occur if such delays mean that consents are not granted until non-harvesting periods have begun (eg winter). This means that harvesting activity can be delayed until the appropriate harvesting period in the following year.

To the extent that an NES would reduce delays because fewer activities would be subject to a consent application process, this would benefit the forestry sector by increasing the flexibility regarding the timing of harvesting activity. Fewer delays and increased flexibility can provide more scope for forestry owners to take advantage of favourable log prices.

As outlined in Section 3.2.5, given the volatility of these prices, the timing of harvesting can have significant impacts on the returns to forest owners. For instance, a change in prices by $5 per tonne can alter the return on a 100 hectare forest block (which could generate around 50,000 tonnes) by around $250,000.

4.2. Decreased cost of forestry activities

In areas where an NES would lead to more lenient rules for certain activities, the costs of carrying out these activities may be reduced. As outlined in Section 3.3 changes to rules such as setback requirements for example, can allow more trees to be grown on a given forest block, increasing the value of forest investments.

4.3. Avoided plan change and submission costs

Councils periodically carry out reviews or make amendments to plan documents, such as District and Regional Plans and associated documents. These include rules governing a large of activities and outcomes, such as land use, noise, water and air quality, etc. Such plan reviews or amendments can impact on the rules governing forestry activities. This gives rise to two types of costs:

- administrative costs to councils in reviewing and amending rules relating to forestry activities; and
- costs incurred by forestry sector participants that engage in the resulting consultation process.

These costs could be reduced by an NES as it would greatly reduce the scope for councils to carry out such reviews and amend such rules as they relate to forestry rules only.

Although precise figures are not readily available, on a nationwide basis there could be five or more proposed plan changes that potentially affect forestry activities every year.[14]

4.3.1. Avoided plan change costs for councils

In the absence of an NES, many councils are likely to carry out periodic plan reviews and individual plan changes that would, from time to time, impact on rules governing forestry activities in a particular area. These reviews and proposed amendments typically involve councils committing time and resources to investigating potential amendments, operating public consultation processes and determining what changes are to be made.

[14] Source: Discussions with selected forestry sector participants.

The magnitude of council resources used for these reviews varies from council to council and depending on the nature of the plan being reviewed. As described in Section 3.1.1, relatively simple plan changes may cost around $20,000 but the costs of carrying out plan changes that require extensive public consultation can range from around $100,000 to $200,000.[15] Assuming a typical plan change cost of $20,000, avoiding five plan changes a year over a 20 year period would generate a benefit in the order of $1 million.

4.3.2. Avoided submission costs for forestry sector and other stakeholders

In response to these reviews and proposed plan changes and amendments, forestry sector participants may make submissions during the various consultation processes. The cost of preparing these submissions, including staff time, would be avoided by the introduction of an NES. In some cases these costs may be minor, say $2,000, but more typically these costs may range up to $7,000 to $10,000.[16] In some cases these costs may be considerably higher. For example, submission costs incurred by forest owners in Canterbury who submitted on ECAN's Natural Resources Regional Plan were around $100,000.[17] Assuming a typical submission cost of around $10,000, avoiding submissions on five plan changes a year over a 20 year period would generate a benefit in the order of $500,000.

Offsetting these benefits to some extent is the fact that an NES itself may be prone to amendment over time and there are some areas outside of the scope or able to be more stringent that will still require submissions. This could occur if new scientific research provides an improved understanding of the environmental impact of forestry activities advances or if new types of forestry (eg energy forestry) become more prevalent. Because of these possibilities, not all submission costs may be avoided by an NES.

4.4. Increased consistency of forestry activity rules

Given the variability of rules both between locations, as well as the inherent complexity of the current rules in many areas, an NES is likely to lead to greater consistency and certainty for the forestry sector. This would in turn reduce the costs of forestry operations as operators would no longer need to research, interpret and apply different rules for forestry operations in different districts and regions.

4.4.1. Avoided research and interpretation costs

This process can be costly as employees must be fully briefed and trained regarding the applicable rules for each operation. In some cases it may even be necessary for employees to be briefed about different sets of rules that apply to the same forest if a single forest spans two districts or regions. Based on estimates provided by forestry sector participants, an NES may lead to an annual reduction in costs equivalent to around two or three FTEs, plus some overheads, across the sector. These savings could be worth approximately $250,000 per year. Over a 20 year period this benefit would be in the order of $2.5 million in avoided costs.

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[15] Source: Discussions with selected councils.

[16] Source: Discussions with selected forestry sector participants.

[17] Source: Aaron Gunn, Blakely Pacific Ltd.

4.4.2. Increased compliance

The rules governing forestry activities are occasionally breached by forestry operators. If an NES were to lead to greater consistency and simplicity more individuals throughout the sector would have a better understanding of the rules that applied in any given location. This may result in fewer breaches overall.

These breaches can result in negative environmental impacts. As well as these negative impacts, any resulting enforcement action can generate costs, such as legal expenses and internal staff time for both councils and forestry operators.

Consequently, an NES would be simpler and less costly to interpret and comply with than current rules in many areas, meaning that there may be fewer breaches of forestry activity rules. This would avoid some of the negative environmental and external impacts, remediation costs, enforcement costs and legal expenses that would otherwise arise under the status quo.

4.4.3. Increased certainty regarding future rules

An NES could also increase certainty regarding forestry rules over time. Although complete certainty regarding future rules is unlikely, increased certainty regarding rules would nevertheless reduce some of the 'regulatory' risks faced by forestry investments.

Currently, there is scope for councils to alter rules governing forestry activities in a manner that may negatively impact on forest owners' ability to obtain returns from their investments. This may occur if limitations are placed on harvest activity, for instance. One impact of such regulatory risk is if a lender (ie bank) considers that there is a risk that Plan changes could hinder the ability for a forest to be harvested. This risk, whether real or perceived, can affect interest rates charged for loans. This in turn can negatively affect the financial viability of forestry investments.

Increased certainty in activity rules and reduced risk to forestry activities could lead to greater profitability, which would constitute a benefit of an NES. Increased returns could in turn lead to a higher level of investment in forestry than would otherwise occur, particularly in areas where uncertainty is currently high. Benefits from increased forestry investment could also include improved environmental outcomes, as described in Section 4.6 below.

4.5. Reduced lobbying activity by forestry sector

Any decision to introduce an NES could also reduce the degree of future lobbying activity by the forestry sector. This is because the issues faced by the sector in relation to the status would remain unresolved if the Government chose not to introduce an NES. As expenses incurred in lobbying (eg staff time, travel, etc) constitutes a cost to society, avoiding this activity would constitute a benefit to society.

Offsetting this benefit to some degree would be the possibility that there may be some additional lobbying activity by the forestry sector even if an NES is introduced,

depending on the final form of the NES. In total, the cost of lobbying activity that may be avoided is likely to be less than $10,000.[18]

4.6. Positive environmental impacts

Several of the beneficial impacts outlined above would have the effect of reducing both the regulatory risks and costs of regulatory compliance faced by the forestry sector. This could effectively increase the returns to forestry investments, although this increase in returns is likely to be relatively small, particularly in relation to land costs. However, if this increased certainty and reduced regulatory risk were enough to generate investment in what otherwise would be a marginal forestry investment, this could lead to small increase in forestry, compared to the status quo. Increased forestry activity could generate positive environmental impacts if this avoids land being used for other, higher polluting, activities, eg other primary sector activities.

To the extent that an NES leads to increased compliance with forestry activity rules, for instance if these rules are easier to interpret, there may also be fewer breaches of these rules (see Section 4.4.2 above).

Additionally, improved environmental outcomes may also arise in areas where an NES led to more stringent rules, although these impacts would not occur in all such areas.

The resulting environmental benefits that could arise from increased forestry and greater compliance include:

- improved water quality;
- increased carbon capture; and
- bio-diversity enhancement.

Although it is difficult to quantify any benefits of improved water quality and bio-diversity, the benefit of a given increase in carbon capture can be estimated. A decrease in New Zealand's net greenhouse gas emissions would reduce New Zealand's liability under the Kyoto Protocol. This analysis also assumes that when the Kyoto Protocol expires in 2012, another similar international agreement that would generate a similar liability will replace it.

New plantation forests absorb approximately 800 tonnes CO_2 equivalent per hectare over a rotation,[19] but the CO_2 absorbed is assumed to be emitted on harvest.[20] Over multiple rotations, on average approximately half this amount, ie 400 tonnes CO_2 equivalent per hectare can be assumed to be removed from the atmosphere. Based on a carbon price of $25 per tonne[21] of CO_2, every additional hectare of forestry would generate a one-off benefit of just over $4,000.[22] Consequently, if one additional forest of around 100 hectares is created (less than 0.01% of the current total plantation forest), the benefit generated would be around $400,000.

[18] Source: Discussions with selected forestry industry participants.

[19] MAF, Forestry in the Emissions Trading Scheme, April 2010.

[20] Some quantity is assumed to be retained in the forest after harvest and emitted gradually over time.

[21] Ibid.

[22] This assumes a discount rate of 8%.

5. Preliminary findings

The overall net benefit (or cost) of an NES for forestry activities would depend on a number of factors. One important factor is the extent to which the rules, terms and conditions included in an NES would differ from the rules, terms and conditions that would otherwise apply in a given location and how this difference would affect forestry activities in that location. Consequently, determining the likely net impact with any precision would require comparing an NES with all existing rules for all forestry activities in each district and region, assessing the prevalence of these forestry activities within each district and region, and then evaluating how these activities would be impacted by an NES.

Although such detailed analysis is outside the scope of this report, some preliminary conclusions may be drawn from the potential impacts that have been identified and their likely magnitudes.

Table 3: Expected benefits and costs by relevant area

Relevant Area	Benefits	Costs
Locations with more stringent rules	• Potential environmental benefits	• Additional resource consent costs for councils & sector • Increased costs for some forestry activities
Locations with more lenient rules	• Avoided resource consent costs for councils & sector • Reduced costs for some forestry activities	• Potential environmental costs
Nationwide	• Avoided research, interpretation and briefing costs for sector • Avoided plan change costs for councils • Avoided plan change submission costs for sector & others • Reduced lobbying by sector • Increased compliance (fewer breaches) by sector • Potential environmental benefits (if more forestry investment)	• One-off implementation costs for Govt, councils & sector

5.1. Location specific impacts

First, many of the location-specific costs and benefits that may arise depend on whether an NES would lead to rules that are more stringent or more lenient in a given area. This would have an impact on whether more or fewer forestry activities would require resource consent or be subject to permitted activity terms and conditions. If an NES were to result in more stringent rules and more activities were to require consent, this would generate additional costs for both councils and the forestry sector, but may generate some environmental benefits. In contrast, if an NES led to fewer activities requiring consent (eg by instead being permitted activities), this would reduce costs for councils and the forestry sector but may generate some negative environmental impacts. The net impact on resource consent costs therefore depends on whether one of these two scenarios would be more prevalent with an NES.

The rules in an NES are intended to be an 'average' of all existing rules across all districts and regions. This suggests that the number of locations for which certain rules would become more stringent may be similar to that for which rules would become more lenient. If the effect of this averaging of rules is that the magnitude of the resulting impacts would also be similar for each location type, this would suggest that the costs arising in areas where rules would be more stringent may be roughly offset by the benefits in areas where the rules would be more lenient. Consequently, the overall net impact of these location-specific impacts may be insignificant.

Estimating whether this would be case in practice, however, would require evaluating the relative prevalence of activities within these location types that would, or would not, require consent because of an NES. This would require more sophisticated modelling of impacts of an NES in each district. In the absence of such analysis, some indication of whether the costs of more stringent rules would be offset by the benefits from more lenient rules may potentially be gathered from stakeholders in the upcoming consultation process.

5.2. Nationwide impacts

Second, on a nationwide basis, there appears to be a range of benefits that would arise each year, as outlined in Table 4 below. For instance, an NES would allow forestry operators to avoid the continual costs of researching, interpreting and applying different rules whenever carrying out forestry activities in different districts and regions. Avoiding these costs would generate benefits on an ongoing basis. In contrast, the expected nationwide costs relate to the implementation of an NES. These would largely be one-off, transitional costs.

In terms of the magnitude of implementation costs, perhaps the largest costs relate to the costs councils would face in having to adjust to an NES. These costs could be relatively minor for simple adjustment processes, eg $2,500 to $20,000 per council. Alternatively, these costs could be considerably larger if Councils were required to identify certain features, such as wahi tapu or archaeological sites, wetlands, hazard areas or erosion prone land. This could require engaging specialist expertise and carrying out a public consultation process. In this case, the costs incurred by councils could range up to $100,000 to $200,000. In total, the potential magnitude of these costs on a nationwide basis could be in the vicinity of $1 million.

Additionally, the total implementation costs incurred by MfE in relation to guidance, workshops and technical advice could be around $80,000 and the cost of erosion mapping provided to councils is estimated to be around $40,000. The forestry sector would also incur adjustment costs in relation to an NES, but these are likely to be relatively minor, perhaps less than $100,000 in staff time.

In comparison to these implementation costs, a number of councils would face a benefit in the form of reduced plan change costs because an NES would remove the ability or need for such changes. The magnitude of this benefit (ie avoided costs) for each affected council may be of a similar range to council implementation costs, ie $2,500 to $20,000

per council for simple changes, ranging up to $100,000 to $200,000 for more complex plan changes. In total, the potential magnitude of these costs on a nationwide basis could be in the vicinity of $1 million.

Table 4: Indicative total magnitude of nationwide impacts

Benefits	Costs
Avoided plan change costs for councils • Possible magnitude $1m	One-off implementation costs for councils • Possible magnitude $1m
Avoided plan change submission costs for sector & other stakeholders • Possible magnitude $0.5m	One-off implementation costs for Govt, • $120,000
Avoided research, interpretation and briefing costs for sector • Possible magnitude $2.5m	One-off implementation costs for sector • Possible magnitude, < $100,000
Avoided enforcement & remediation costs from increased compliance by sector • Unknown	
Increased certainty for sector • Unknown	
Reduced lobbying by sector • Possible magnitude, <$10,000	
Potential environmental benefits from more forestry • Unknown	

Note: Time period used is 20 years. The value of impacts accruing in future years have been discounted at 8%.

The costs to the forestry sector and other parties of submitting on these plan changes would also be avoided. While these costs may be minor for many plan changes, eg $2,000, they more typically range up to $7,000 to $10,000, and in some cases can be in excess of $100,000. In total, the potential magnitude of this benefit on a nationwide basis could be in the vicinity of $500,000.

According to the forestry sector, the most important potential benefits from an NES are likely to arise from increased consistency in forestry activity rules across the country. The total benefit from avoiding these costs could be in the vicinity of $2.5 million.

Consistency is also likely to make compliance with activity rules easier, potentially reduced the number of breaches. This would avoid enforcement and legal costs for councils and forestry operators which in some cases can be substantial, eg in excess of $100,000.

Another beneficial impact of an NES would include increased certainty for the forestry sector regarding rules in the future. This would positively influence forestry investment decisions. An NES that satisfactorily addressed the concerns of the forestry sector would also eliminate the current lobbying activity by the sector.

An NES could also lead to environmental benefits. This could occur to the extent that reduced operating costs to the forestry sector and increasing certainty means that forestry investment would become relatively more attractive. This could result in a

greater level of forestry investment than would otherwise occur. Benefits from this could include improved water quality and increased carbon capture.

5.3. Overall net impact

This analysis suggests that the total impact of nationwide effects is likely to be a net benefit, whereas the total impact of the various location-specific effects is uncertain. As outlined, the net impact of location-specific effects depends on the extent of forestry operations each area, and how these operations are affected by the difference in rules for each of the eight activities that would be included in an NES. As there may be up to 15 terms and conditions for each of the eight activities, determining the impacts across each of the 85 different districts and regions could mean analysing around 1,500 different variables. Analysis of this complexity is outside the scope of this report. Consequently, it is not yet possible to determine the likely overall net impact of an NES.

5.4. Possible questions for consultation process

Additional information and quantitative data from stakeholders would assist in further evaluating the likely magnitude of any net benefit (or cost) of an NES. To this extent, MfE may wish to include various questions regarding this cost-benefit analysis in its upcoming public discussion document. For instance, general questions regarding the significance and likely magnitude of the potential impacts that have been identified in this analysis may provide useful information. It would also be useful to seek further information from both the forestry sector and councils regarding the regulatory costs that currently incurred across the country as a whole.

A particularly useful question may be whether stakeholders consider that the impacts in areas that would be subject to more stringent rules (eg increased resource consent costs and improved environmental outcomes) would be outweighed by the impacts in areas that would be subject to more lenient rules. A useful question would be:

> "In the area/s within which you operate, what would the impact of the NES be on your operations, including any increased/decreased need for resource consent?"

A similar question could be asked of councils regarding impacts in their district or region in relation to their regulatory requirements. Stakeholders may also be asked whether they consider that, on balance, the specific impacts in locations where an NES would lead to more stringent rules would outweigh the impacts in areas where rules would become more lenient. Specifically, questions could be asked about the extent to which an NES would have location-specific impacts on:

- consent applications for forestry operators;
- consent processing for councils;
- monitoring for forestry operators and councils;
- the likelihood of disputes;
- delays for forestry operators;
- the costs of carrying out some activities; and
- environmental impacts.

5.5. Distributional impacts

As well as costs and benefits, this analysis has identified some potential 'transfers', ie impacts that constitute a benefit to one party or group but a cost to another. Although transfers do not affect any overall net benefit or cost, they may raise equity concerns.

One of these potential impacts is in relation to compliance monitoring. As with consented activities, council monitoring may be required for permitted activities that have terms and conditions. Unlike for consented activities however, the costs of this monitoring are not often passed onto forest owners. Charging for the costs of monitoring permitted activities requires applying the relevant sections of the Local Government Act which a substantial number of councils do not. This is because this process can be costly. Consequently, if an NES were to result in some currently consented activities becoming 'permitted' the burden of these costs could be passed from forest owners to councils, even if the total costs of monitoring may not change.

As outlined in Section 2. , the impacts of an NES would vary across the country. Councils and forestry owners in some areas would benefit whereas those in other areas may face additional costs. For instance, some councils could incur substantial adjustment costs from an NES without receiving an offsetting benefit from the NES , for instance if their current rules reflect best practice given the local environment. In contrast, other councils would benefit from an NES because they would avoid the costs of carrying out plan changes that would otherwise occur.

Another aspect that could give rise to distributional concerns is in relation to issues of plan changes and reverse sensitivity. Currently, district councils are able to change existing plan rules to impose restrictions on various forestry activities that may have negative impacts on nearby residents, eg harvesting of trees that affect aesthetic values, operation of logging trucks, etc. This can provide benefits to these residents but can negatively impact on the forestry sector by removing existing land use rights. In contrast, an NES could ensure that existing rights to carry out forestry activities are maintained despite the fact that this could negatively impact on nearby residents.

Although socially beneficial outcomes can be obtained if two opposing parties are able to negotiate directly, equity concerns may be raised by one party if the other party is initially provided with a right to undertake, or block, a particular activity.

Appendix

Table 5: Location-specific impacts, possible methods for estimating magnitudes

Relevant Area	Benefits	Costs
Locations with more stringent rules	Potential environmental benefits • Unquantifiable	Increased consent application costs for sector • Cost of application (eg $5k - $20k) X expected additional consents
		Increased consent processing costs for councils • Cost of processing (eg $2k) X expected additional consents
		Increased monitoring costs for councils or sector • Cost of monitoring (eg $500 - $5k) X expected additional monitored activities
		Increased dispute costs • Dispute costs (eg $20k - $100k) X expected additional disputes
		Increased delays for sector • Unquantifiable. Potentially $250k per 100ha effected.
		Increased costs for some forestry activities, eg culverts, setbacks, etc • Additional cost per activity X expected number of activities effected
Locations with more lenient rules	Reduced consent application costs for sector • Cost of application (eg $5k - $20k) X expected avoided consents	Potential environmental costs • Unquantifiable.
	Reduced consent processing costs for councils • Cost of processing (eg $2k) X expected avoided consents	
	Reduced monitoring costs for councils or sector • Cost of monitoring (eg $500 - $5k) X expected reduction in monitored activities	
	Reduced dispute costs • Dispute costs (eg $20k - $100k) X expected avoided disputes	
	Reduced delays for sector • Unquantifiable. Potentially $250k per 100ha effected.	
	Reduced costs for some forestry activities, eg culverts, setbacks, etc • Reduced cost per activity X expected number of activities effected	

Table 6: Nationwide impacts, potential magnitudes/possible method for estimating magnitudes

Benefits	Costs
Avoided plan change costs • Possible magnitude $1m	One-off implementation costs • Possible magnitude $1m
Avoided plan change submission costs for sector and other stakeholders • Possible magnitude $0.5m	One-off implementation costs for Govt, • $120,000
Avoided research, interpretation and briefing costs for sector • Possible magnitude $2.5m	One-off implementation costs for sector • Less than $100,000
Avoided enforcement (councils) & remediation (sector) costs from increased compliance • Enforcement & remediation costs avoided (eg $5k - $250k) X breaches avoided	
Increased certainty for sector • Unquantifiable. Reduced regulatory risk may increase forestry investment.	
Reduced lobbying by sector • Less than $10k	
Potential environmental benefits from more forestry • Mostly unquantifiable. Potential carbon capture benefits of $280k per 100ha.	