FOREST OWNERS ASSOCIATION

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Ministry for Primary Industries
25 The Terrace
Wellington

Valuingplants@mpi.govt.nz

Submission on NZIER report to MPI – *How valuable is that plant species?*

Background

1. The New Zealand Forest Owners Association (FOA) is the representative membership body for the commercial plantation forest growing industry.

2. FOA members are responsible for the management of approximately 1.2 million hectares of New Zealand's plantation forests and over 80% of the annual harvest.

3. FOA is submitting on behalf of its national membership.

Report: Overview

4. MPI has commissioned a report from NZIER to assess the economic value of common commercial plant species in New Zealand.

5. It is anticipated that this report will form the basis of readiness and response economic policy for GIA and other biosecurity purposes.

6. The report is well-written and has used common data sources from which to draw conclusions. It does, however, in some areas lack depth and research.

7. The forestry industry is primarily concerned with the findings related to commercially planted tree species such as radiata pine and Douglas-fir, and the genera Eucalyptus and Cypress.

Level 9, 93 The Terrace, PO Box 10986
Wellington 6143, New Zealand
Tel: +64 4 4734769 Fax: +64 4 499 8893

Submission

Introduction

8. FOA acknowledges the effort and analysis that NZIER has completed in order to produce this report.

9. The FOA notes that the considerable economic contribution of the seed industry has not been included in the species valuation, nor of the nursery sector.

10. The FOA considers that limiting the scope of the project to only the economic value of plants means that the considerable benefits and multiple uses of plantation trees outside of production and processing are excluded. While this approach may be suitable for consumable crops, it means that the true value with respect to forest species has not been calculated, nor does it take into account the long growth cycle of trees.

11. It should be noted that the plantation species and genera listed in the document (radiata pine, Douglas-fir, eucalypts and cypress) contribute considerably to the New Zealand economy through non-production related uses, such as the provision of shelter belts for farms, tourism and adventure opportunities in-forest, and the prevention of erosion. Additionally, consideration needs to be given to the significant number of plantation species trees, which also have ornamental purposes in cities and would be affected during a biosecurity response. All these areas impact the market value of trees.

12. Lastly, in addition to the above, the non-market value of trees was not discussed in this document as it was considered 'out of scope'. It needs to be noted that several studies have been completed regarding the ecosystem services that forests provide, and in a number of these studies economists and social scientists have managed to establish a dollar value for these services.

13. The FOA considers that these non-market value services are equally important to New Zealand as direct economic input.

14. The following paragraphs will discuss points 10 – 13.

Discussion

Shelter belts

15. The tree species assessed in the document are not only commonly planted plantation species, but also planted in order to form shelter belts on farms. Shelter belt trees do not generally produce good timber[1], however they produce additional benefits for farmers.

16. When planted, shelter belts can reduce wind speed between 30 and 80% depending on the height of the trees[2], resulting in decreased moisture loss, shade and wind protection for livestock, and reducing the likelihood of disease spread, amongst others[3]. They are also a haven for biodiversity.

17. In economic terms, the presence of shelters belts (most commonly planted with plantation species trees) have been seen to increase pasture growth by up to 60%, and crop yields by 25%. Additionally, stock provided with shelter belts have been shown to increase in weight by up to 34% and produce more milk[4].

18. When considering the value of tree species in relation to other industries, the FOA does not believe that adequate weighting has been given to the considerable benefits these species provide to the farming sector and therefore to the economy of New Zealand.

Tourism and Adventure Opportunities

19. Page 36 of the report considers the contribution forests make to the New Zealand economy for tourism and adventure. The report states that reliable information is not available in such quantities for assessment. While this statement may be accurate, the FOA considers that the report should still have provided an overview of the information available.

20. For example, the Department of Conservation manage a majority of indigenous forest and regularly provide reporting statistics.

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[1] http://www.teara.govt.nz/en/shelter-on-farms/page-4, 2015 retrieved 11 November 2015
[2] As above
[3] Andreu, Michael G., Tamang, Bijay, Friedman, Melissa H., Rockwood D. 2014. *The benefits of windbreaks on Florida Growers* from https://edis.ifas.ufl.edu/pdffiles/FR/FR25300.pdf; Retrieved 11 November 2015
[4] Stace, Colin – Environment Bay of Plenty. Date unknown. *Sustainable Options, Land Management – Farm Shelterbelts* from https://www.boprc.govt.nz/media/100489/no_17_farm_shelterbelts.pdf; Retrieved 11 November 2015

21. Additionally, those commercial plantation forests that allow public access require a permit process, which would involve both a cost (generally) and paperwork. Forest owners, or those companies employed to manage the permit process, hold numbers regarding both of these areas. For example, one call to a forest owner revealed that there were 2000 hunting/fishing registrations with the company for access permits. Should all 2000 registrations advance to being permitting, this would result in a $50 fee for each. Although this fee only covers administration costs, this information tells us that 2000 people wish to enter this forest and are willing to pay for the privilege.

22. Such statistics are easy to find for permitted forests. Estimating the value of open - access plantations is slightly more difficult but not impossible. There have been two studies into the economic value of recreational access into Whakarewarewa forest in Rotorua. One of these was commissioned by the Rotorua City Council[5] in 2009 and another completed by Scion in 2012[6].

23. The APR report established that approximately 304,040 people had visited the forest for the purposes of a wide range of activities and this resulted in a contribution of approximately $11,105,800 to New Zealand when considering the entire value chain.

24. The Scion study looked at what walking and mountain bike riding visitors to the forest would be willing to pay to use the forest. Using the visitor statistics from the APR report for these groups (walker = 88,500, mountain bike riders = 101,800) and a survey, Scion estimated that the average walker would be willing to pay $34 per visit and the average mountain biker $48 per visit. This estimate resulted in approximately $8,000,000 (between $5.5 and $16.4 million when considering a 95% confidence interval).

25. Although these are only two studies from the same forest, it is reasonable to assume that similar findings could be used for other open-access forests within New Zealand.

26. The FOA believes that an additional estimated $11 million which the forestry industry contributes to the New Zealand economy from *one* forest, which is available for public access, requires further consideration when assessing value.

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[5] APR Consultants Ltd. 2009. *Recreational use and economic impact of Whakarewarewa forest: 2009 Update* from aprconsultants.co.nz/index.php/download_file/-/view/128/. Retrieved 11 November 2015

[6] Dhakal, Bhubaneswor; Yao, Richard T.; Turner, James A.; Barnard, Tim. 2012. *Recreational users' willingness to pay and preferences for changes in planted forest features*; Forest Policy and Economics 17 (2012) 34-44

Erosion

27. The FOA considers that this document fails to take into account the positive role the reported tree species have for erosion control, which results in decreased economic losses for New Zealand in terms of clean-up.

28. In the 2008 report commissioned by the then Ministry of Agriculture and Forestry: *Economic costs of hill country erosion and benefits of mitigation in New Zealand: Review and recommendation of approach*[7], it was estimated that soil erosion and sedimentation cost New Zealand approximately $159.1 million (based on 2008 figures) per year and this was considered a low estimation. This loss was calculated in agricultural production loss, property damage and other sediment effects.

29. Taking this further – as part of the National Environmental Standard for Plantation Forestry, MPI commissioned a report (*Update of the Erosion Susceptibility Classification for the Proposed NES for Plantation Forestry, June 2015*[8]) to map the erosion levels of land across New Zealand and of plantation forests.

30. This report looked at 26,771,000 hectares of New Zealand land and classified it as low, medium, high or very high risk of erosion. It then identified the plantation forestry in each category.

31. Using the estimated cost of erosion ($159.1 million) from the 2008 paper, and the mapping of New Zealand land (26,771,000 ha) and plantation forestry (2,020,000 ha), it is possible to calculate a basic value that plantation forest species contribute to erosion control:

    Cost of erosion clean up per hectare: $5.90
    Hectares that are in plantation forestry and unlikely to erode: 2,020,000
    Economic benefit of plantation forestry: $11,918,000

32. The FOA acknowledges that this is crude mathematics at best – there are many other variables to consider; However it does illustrate the possibility of the identified tree species being economically beneficial in the area of erosion

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[7] Jones, Haydon; Clough, Peter; Höck, Barbara; Phillips, Chris; 2008. *Economic costs of hill country erosion and benefits of mitigation in New Zealand: Review and recommendation of approach* from https://www.mpi.govt.nz/document-vault/81. Retrieved 11 November 2015

[8] Basher, Les; Barringer, James; Lynn, Ian; 2015. *Update of the Erosion Susceptibility Classification for the Proposed NES for Plantation Forestry, June 2015* from https://www.mpi.govt.nz/document-vault/7998. Retrieved 11 November 2015

control, which in turn benefits a number of other industries such as farming, infrastructure and real estate.

33. The FOA considers that any money which is not requiring to be spent on erosion clean-up due to the presence of plantation species should, at least in part, be added to the value of that species.

Ornamental value

34. The species discussed in the report are also used for urban areas and would cause concern in the event of a biosecurity issue.

35. When calculating the economic value in the urban space of these trees, the easiest consideration is the added value trees bring to property value.

36. In a study by the University of Washington[9], it was found that trees being present in a neighbourhood increased home value by between 3 and 15%, while those close to a park increased by 8-20%. In addition to this, commercial spaces were likely to have a 7% higher rental price if there was a pleasant outlook.

37. These values are also reflected in a similar study conducted in the United Kingdom[10].

38. In addition to the economic benefits, when considering the trees in the document in terms of biosecurity, there needs to be some assessment to those trees in the urban environment, which will be affected. Radiata pine, Douglas-fir, eucalypts and cypress are all present in New Zealand cities and will have to be included in any response.

39. When assessing the trees in terms of a response, consideration needs to be given to how much it is going to cost to remove the trees from the urban environments should an incursion, for example of myrtle rust (affecting eucalypts) occur. In the 2013 Dutch Elm Disease outbreak in Auckland, over 263 trees were removed and destroyed. Calculating the value of these trees to Auckland could be done by assessing the cost of their removal by the average arborist, which could be anywhere between $150 and $1000 per tree.

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[9] Wolf, K.L. 2010. *Community Economics - A Literature Review. In: Green Cities: Good Health* (www.greenhealth.washington.edu). College of the Environment, University of Washington. Retrieved 12 November 2015

[10] http://webarchive.nationalarchives.gov.uk/20110118095356/http:/www.cabe.org.uk/files/does-money-grow-on-trees-summary.pdf retrieved 12 November 2015

40. The FOA considers that there is a need to assess the value of the tree species in question in the urban environment.

Non-market value

41. The FOA considers that the added benefits of ecosystem services, i.e. – value added outside of the economic market – also need to be included in this report.

42. Forests, plantation or natural, provide the greatest number of ecosystem services. The New Zealand planted forests are attributed with providing: cultural services (aesthetic experience, native species conservation and recreation); regulatory services (flood mitigation, water quality improvement, erosion avoidance and carbon sequestration); provisioning services (wood and fibre, and raw materials); and supporting services (biological, chemical and physical processes)[11].

43. The report is correct that there has been some attempt to place a dollar value on the provision of ecosystem services. The Food and Agriculture Organisation (FAO) carried out a study in an attempt to place a dollar value on the ecosystem services provided by forest in Beijing Municipality. When taking into consideration the goods, the environmental services and socio-cultural benefits provided by forests, the 1.1 million hectares was estimated to provide US$1.04 billion in marketable services, but an additional US$5.26 billion in non-marketable services[12].

44. The FOA considers that there is a need to recognise the roles that the trees identified in the document play in providing necessary services to the environment and that this paper does not go far enough to assess these.

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[11] Barry, Luke E.; Yao, Richard T.; Harrison, Duncan R.; Paragahawewa, Upananda Herath; Pannell, David J.; 2014. *Enhancing ecosystem services through afforestation: How Policy can help* in *Land Use Policy*

[12] S. Wu, Y. Hou and G. Yuan; 2010. *Valuation of forest ecosystem goods and services and forest natural capital of the Beijing municipality, China;* from http://www.fao.org/docrep/012/i1507e/i1507e07.pdf. Retrieved 12 November 2015

Summary

45. The FOA considers that this report does not accurately reflect the market value of the four forest species or genera (radiata pine, Douglas-fir, eucalypts and cypress) as a number of areas where these species contribute value outside of the production and processing environment have not been assessed.

46. The FOA considers that these forest species/genera add considerable economic value to other industries or markets through the provision of farm shelter belts, tourism and adventure opportunities, erosion mitigation and through the planting of ornamental trees in urban environments.

47. The FOA considers that to discount the non-market value of such species/genera does not recognise their importance in the provision of ecosystem services, and nor does it reflect the full potential cost during a biosecurity response.

48. The FOA considers that more research into the market and non-market value of these trees needs to be completed.

On behalf of the FOA and its members, thank you your consideration in this matter.

Kind regards

Brigid Jenkins
Analyst
Forest Owners Association