

A vision for forestry

Chris Goulding

This issue contains a significant paper from the Minister of Forestry on his opinion that planting a billion trees is a vision not a dream. The vision is that with judicious land use, the potential of the forest sector and the One Billion Trees Programme is enormous, benefiting the whole of New Zealand. This vision is shared by many.

The paper is supported by several other papers, written independently. That from British Columbia describes a concept of 'the working forest' that is more than timber production and works on behalf of people to provide social, cultural, spiritual and economic benefits. Note that in BC their annual allowable cut of 78.5 million m³ in 2000 has been reduced by pests and fire, and is forecast to decline further to below 60 million m³. Perhaps, when (not if) the billion trees are planted and improved seedlings are used, New Zealand's future long-term sustainable yield will be on a par.

That New Zealand production forests face environmental issues becoming even more important is the subject of the third paper. The regulatory environment is expected to become tougher with more public scrutiny, particularly for sediment and debris flows, visual impacts and logging truck movements. The development of the National Environmental Standards for Plantation Forestry a year on from its Gazettal is described in the fourth paper commenting that the standards are expected to better protect the environment while improving certainty for forest operational management.

The Minister's paper highlights the need for the forestry sector to manage risk. The downstream logging debris issue threatens production forestry's licence to operate on steep country.

The NZIF's letter of 14 June to the Minister on the adverse publicity following the recent storms is lucid and well written. Regardless, the local and general public do not take kindly to seeing beaches, bridges and paddocks covered in logging waste. A logging manager stating that the harvesting operation complied with all consents and regulations received scant sympathy. Even though the storm was a localised, extreme weather event, there undoubtedly will be another somewhere in New Zealand soon and national news will again bring that to everyone's attention.

It is necessary to distinguish between soil erosion caused by poor engineering and logging debris swept off a steep harvest area. For conventional log production, following harvest there will be between 50 and well over 100 tonnes of logging waste per hectare not including branch wood or roots (see photo on back cover). On steep land some of this will be at or near the skid site; it is often not practical to scatter it uniformly over the

cutover. On the steep cutover itself, waste will most probably be in localised, vulnerable piles if delimiting occurs at stump. Some land should be regenerated to native forest. Other steep land could continue in production forest if a systems approach to solving the logging slash problem was taken.

This problem can be divided into two. How are the residues to be extracted, processed and transported from a steep harvest area? How can the residues be converted to something useful, ideally profitably, but at least at a reasonable cost that doesn't cripple the finances of harvesting.

Thirty years ago when we joined the IEA bioenergy research programme we concluded that under New Zealand conditions forest residues had to be attached to a more valuable part of the tree to be extracted profitably. I doubt if that has changed today. Cable-assisted logging systems offer a solution: felling and extracting the whole above-ground tree – tops, branches, needles and all. Operational procedures are required to lay the tree on the ground without the top being broken off and shattered, with delimiting and log-making at the skid. Methods to process the residuals into a form most suitable for efficient transportation are needed. A fertiliser prescription is required to replace the nutrients removed as a consequence of full-tree harvest – unlikely to be too onerous provided the litter layer is not removed.

A market is required for the residuals. The most likely is bioenergy, given their low quality. Cogeneration plants at wood processing facilities that produce heat and electricity are well known, but can (a small) one be established in the remoter areas such as the East Cape? Is some form of government assistance required to build such a facility, while the residues themselves might be supplied below cost, borne in order to permit the harvest of the more valuable logs?

The August 2015 issue of the *NZ Journal of Forestry* had papers on the theme of inter-rotational forest planning on steep, fragile country. That issue's editorial conclusion is repeated here: 'There should be a group of New Zealand harvesting researchers, possibly based in Scion, with adequate, secure funding, safe from the short-term decision making of a hard-pressed manager intent on reducing costs this year, but with close contact with forest managers and harvesting contractors. This (small) group should consist of young, enthusiastic scientists, some with recent postgraduate qualifications in forest engineering, or quantitative sciences.' Such a dedicated project team, with the addition of a specialist in wood bioenergy, would be the ideal group to help solve the logging debris problem.



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