

VALUE RECOVERY

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Introduction

After waiting many years for your trees to grow, it is surprisingly easy to forgo income at harvest. Although the returns may appear very good, in many cases they will not be as they could or should be, and you will probably remain blissfully unaware of your losses. A preoccupation with logging rate in some sectors of our industry signals a lack of understanding of the factors that influence value recovery. Often, pressure is put upon logging staff to reduce the logging rate with little understanding of the consequences. A very efficient way to lose money is to try to reduce costs by employing the contractor who offers the lowest price, or can be pressured into accepting a lower price. At some stage such pressure cannot help but contribute to a reduction in value recovery.

Actions which reduce value recovery

By way of illustration, with tongue firmly in cheek, this paper suggests a number of methods that forest owners or managers could use to reduce the value of their harvest.

1 Don't do any harvest planning.

Logging is such a capital intensive and expensive operation that it is easy to waste money. A hauler operation with a daily cost of \$4 000 and a capacity

under 'normal' conditions of 200 tonnes per day could easily be reduced to producing 100 tonnes per day if given a block not suited for it or if landings were placed in the wrong positions. This would increase the cost per tonne from \$20 to \$40 per tonne or an extra \$10 000 per hectare.

If possible discuss the logging plan with the contractor - this will make the operation more efficient and hence cheaper. Don't plan to build expensive roads suitable for highway logging trucks if there is an alternative. Spending \$10 000 to \$60 000 per kilometre on roads can quickly take the gloss off a small harvest. Using a two stage system may reduce this cost. Alternatives such as the MAN off highway truck and cableways such as the Wyssen system hold promise in tougher sites. Careful harvest planning should weigh several alternatives and should involve landowner and contractor.

2 Be independent and don't work in with other forest owners at harvest.

Whether you market your trees through a cooperative or by using a consultant you will obviously gain by achieving a better price. From the logging point of view, the advantage of consultants or cooperatives is that they can offer logging crews continuity of work. Without continuous work a contractor

cannot attract, train and keep good workers, purchase good machinery and gain expertise. Without these assets or skills, a contractor will cost you a lot of money.

3 Allow poor felling techniques.

Felling techniques which leave high stumps and/or the butt log damaged by splits, slabbing or tear (which force the removal of short waste sections to get back to undamaged wood) are wasting the most valuable part of the tree. For a crop of 300 two tonne trees per hectare with diameters at the butt of 64cm the cost of poor felling is as follows: (with pruned butts worth \$200/m³ and \$300/m³)

Value of butt log	10cm wasted	20cm wasted	30cm wasted
\$200 /m ³	\$1920/ha \$3.20/t	\$3840/ha \$6.40/t	\$5760/ha \$9.60/t
\$300 /m ³	\$2880/ha \$4.80/t	\$5760/ha \$9.60/t	\$8640/ha \$14.40/t

Cost per hectare of poor felling techniques with 10, 20, 30cm of butt log wasted.

Another technique which saves money is **directional felling**. If trees are all felled in a similar direction they are easier to extract which increases production, hence lowers costs, and there is less breakage. If there is less breakage there are fewer small pieces to extract which also lowers harvesting costs and increases extracted volumes. Trees in a stand have a predominant lean. Are the skids placed so that trees felled with their lean are easily extracted or will turning trees towards the skid cause extra breakage.

To illustrate the cost of extra breakage consider a hauler operation (costing \$4000 per day) pulling 220 tonnes per day. Piece size is 2 tonnes and on average trees reach the landing in 2 pieces, a butt piece and a top. Average extracted piece size after breakage then, is 1 tonne. There are three strops used so 220 tonnes takes 73 drags. If

breakage increases so there are 2.5 pieces per tree, each extracted piece will average 0.8 tonnes. Three strops x 0.8t x 73 drags is a daily production of 175 tonnes. \$4000 daily cost divided by 175tonnes gives a rate of \$22.80, a \$4.80/t increase.

It is obvious that an emphasis on good harvest planning, the skills of the logging crew and the quality control systems the contractor and the company have in place to ensure minimum breakage and correct felling techniques, are more important than a one or two dollar difference in logging rate between two contractors.

4 Let anyone do the logmaking.

Every tree that arrives on a landing can be cut into a combination of different log types. Each potential buyer likes to buy logs of a certain quality or type. To maximise your returns you would want to be able to produce a range of log types; the more log types, the more buyer options, the better the price. However the more log types there are to choose from, the harder it is to decide how to cut each tree.

Based on an estimate done a year ago that an average harvest return should be \$60 000/ha for 300 well tended trees per hectare, each tree would be worth \$200. A trained professional logmaker achieves between 75 and 98% of the optimum value of a tree when his decisions are measured against a computerised optimising system. If a professional logmaker manages **95%**

he or she is losing \$10 per tree which is \$5 per tonne or \$3000 per hectare. A poor logmaker who managed to achieve 70% of the optimum would be losing \$60 per tree which is \$30 per tonne or \$18 000 per hectare.

A more likely example in production forests: if comparing the performance of two similar log makers or the same logmaker in two different situations, there will be a substantial difference between a motivated log maker and one who feels underpaid and pressured. The task is so complicated that there could be a 5% difference in performance (\$5/t) depending on which side of the bed that they got out of that morning.

Where stands are untended and of poor quality the potential losses are smaller, but do not remove the need for a trained logmaker.

5 Don't inspect log stacks to ensure that logs are within specification.

All buyers will provide a detailed specification of the logs they wish to purchase which will include length, minimum or maximum small and large end diameters, maximum knot diameters, allowable sweep and so on. The allowable range is also listed, so for example a length could be $4.1m \pm 5cm$. If logs are marked or cut incorrectly they may have to be recut to another, shorter logtype which involves wastage. Many buyers, especially at export ports, will send trucks back to the bush if loads contain out of specification logs -- at your expense. Poor presentation will also invite price reductions. Logs may also end up in the wrong stacks. Any log maker under pressure, when faced with a choice as to what log to cut will choose the lower value logtype as there is then no risk of

a reject log. Reducing pressure on the logmaker will increase value recovery. Just a five percent difference could mean \$5 per tonne using the same example as previously mentioned. One example is a case where a differential payment system for high value logs was dropped. Immediately the incidence of small end diameter errors in that high value grade dropped. The logmaker didn't have to try to maximise value recovery any more. Contractors and companies should reduce pressure on the skid, use differential payment systems and have quality systems in place which involve regularly checking the log stacks.

6 Let the contractor decide how much waste wood should be left on the cutover.

Contractors are most efficient, hence profitable, when extracting large pieces of wood. It suits them to only extract butt pieces, not the broken tops. Those top pieces of a merchantable size do have a value to the forest owner however. Some compromise should be sought between higher logging cost and better recovery of small merchantable pieces. Most forest owners insist on directional felling to reduce breakage and regular cutover inspections. One woodlot cutover we recently inspected had an estimated $70m^3/ha$ of merchantable material (pieces over 3m in length and over 10cm small end diameter) left to rot on the site and only the easy half of the block had been logged. The more difficult area had been left for another (unlucky) contractor to finish at another time.

7 Let your sawlogs or carefully pruned butt logs become sapstained.

A New Zealand sawmill involved in the domestic and export markets supplied these figures during 1995: A pruned butt log milled to 150x50mm had a wholesale price of \$720 per m³ (sawn). If this was found to be sapstained it was used for framing worth only \$400/m³. This price does not cover purchase or milling costs. If, however the log had been cut to 25mm stock and was found to be stained it could only be 'merch' grade worth \$220 per m³. This market is limited, as the Dairy Board and fruit packhouses no longer accept sapstained timber. If cutting for export, and in many cases for the domestic market, sapstained material had no value. - A buyer will pay more for your timber if the risk of sapstain is low.

A contractor or agent or planner should design a logging and trucking system which minimises the time between felling and delivery to buyer. If there is any risk of weather preventing truck access then the landing should be emptied of high value logs at the end of each day. Watching well tended trees turning black on the landing is depressing and costly.

Another way to reduce the value of your crop is to incur extra costs: -

8 Ignore health and safety legislation.

Enough has been written of the potential for fines. If you employ a harvest planner or a contractor with any less than a total commitment to safety the risk of prosecution increases. A fine will not help your logging costs for a setting. An unexpected bonus

from this legislation has been that after having trained staff to improve safety, substantial improvements in productivity and quality have been noted. After an initial burst of enthusiasm however, it is easy for companies and contractors to let complacency creep in which will undo many of the achievements. It is also noticeable that although fewer workers are working in our forests and there are many more mechanised operations, the accident rate is not decreasing. Workers are better trained and have better protective equipment. Is the reason the rate is not falling due to production pressures put in place in the misguided belief that a lower logging rate will save money?

For a woodlot owner just three steps need be taken by you and your agent.

- Ensure that any contractor that comes onto your property has a health and safety plan
- Tell the contractor about any hazards particular to your property, for example, an old fence through the middle of your trees, bluffs or tomos. This could be done in writing.
- Make sure the contractor and workers actually use their safety plan. On a regular basis the contractor should be auditing the operation to ensure safe practices and that safety equipment and machinery is in good order. There should be a written record of this audit. You need to see these audit records as the contractor completes them to ensure the safety plan is a document that is being used, not just something to be waved around when trying to win a contract.

9 Ignore environmental law.

In most cases you will need to obtain a resource consent before harvesting starts. The harvest planning process would include this step. The contractor then needs to know the consent requirements or standards laid down by the Regional or District councils. You may also have your own standards or requirements to ensure that your land asset is protected. With these standards clearly specified for the contractor, monitoring needs to occur to make sure these standards are being met. If a contractor puts in unplanned tracks or uses your stream as a road to save money, you may both be in breach of the legislation. This may cost you money in fines or restoration or more stringent regulations in the future. Regular inspection and communication is needed.

10 Don't tidy the site after logging.

After logging, landings should have drainage controls placed and be oversown, or the surrounding slash should be spread over the compacted landings to rot down. Any hauler landings with steep fill slopes should have most of the slash material taken off those slopes and spread over the landing to prevent serious erosion problems such as 'birds nest' collapse. Tracks within the cutover and access roads should have water controls put in. Oversowing of the cutover, landings, fill slopes and tracks is a good way to quickly protect from erosion and reduce the ingress of weed species. Putting a site to bed properly will reduce erosion and weed problems and prevent high track and landing maintenance costs.

In highly visible sites poor practices may antagonise the public to the extent that future harvests are compromised. This would carry a substantial cost.

In small harvests where cleanup is a major part of the job it may be fairer to all parties to itemise the cleanup and quote it apart from the logging rate.

Conclusion

One of the last things to look when choosing a contractor is the price per tonne, for the reasons explained in this paper. **There is ample training available for consultants, logging supervisors, contractors and their crews but in many cases these skills and attributes are not being sought because small forest owners are not expecting enough of contractors.** If you do not demand professionalism and excellence you will not get it. Basing your consultant or contractor selection on only a tendered cost per tonne is penalising good operators, sending the wrong messages about the quality of the job you want done and effectively giving away a large portion of a valuable crop.

Good value recovery can only be achieved through using professional harvest planners, marketeers and contractors with stringent quality control systems in place. No contractor should start work without a prescription. Prescriptions are the detailed instructions that outline forest owner, agent, log buyer and council expectations.

Arrange for regular meetings with land owner, contractor and consultant to review progress and discuss issues

Proper supervision of a logging operation is essential. Checks must be

made regularly on the quality of all parts of the job, from felling, to logmaking, to safety and environmental performance. If the job is not right it must be stopped. Any agents who would wish to claim commission on woodlot sales should be able to show owners the systems they have in place that will ensure good performance by the logging contractor. They should also have the selected contractor's proposal and

references to back up that selection. Work through this article and ask how they will manage the operation to ensure all the potential losses are minimised. On a regional level groups of small forest or woodlot owners need to get together and find one person or firm to manage their logging and marketing. Then ensure that person obtains the skills necessary to operate to your high standards.