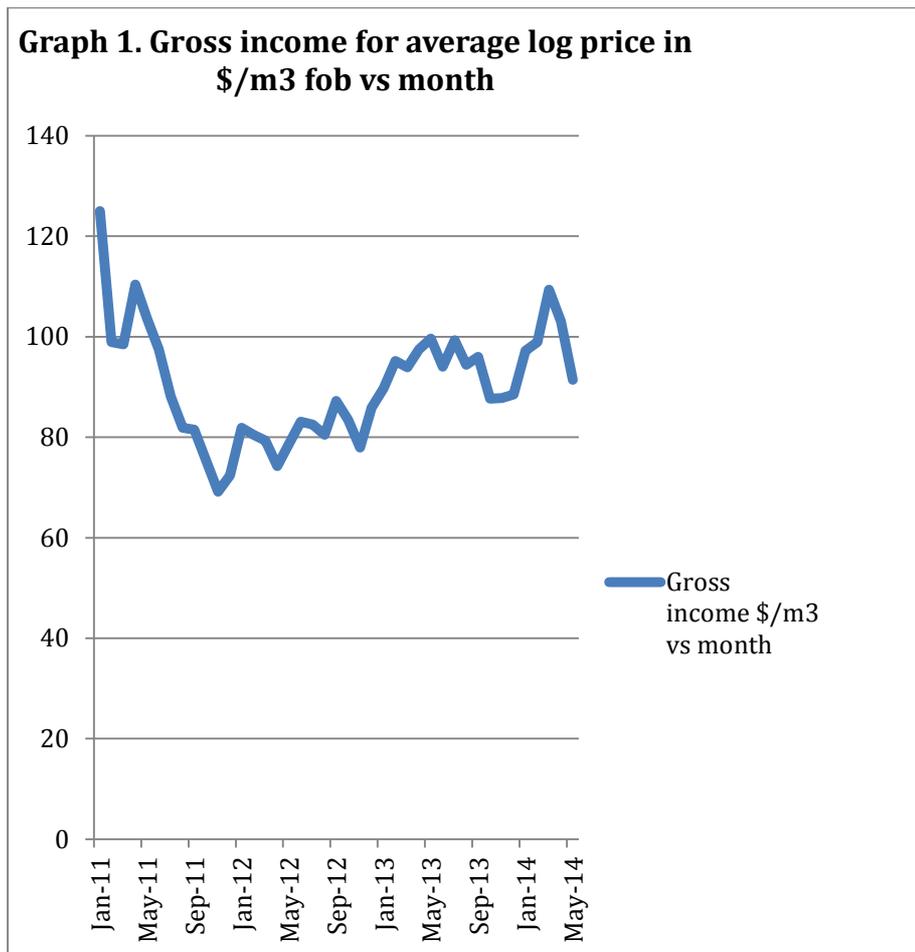


## Assisting proprietors who own less than 50 hectares.

by Hamish Levack

Enlightened small-scale forest owners have several concerns:

1. Export log prices fluctuate, as depicted in graph 1, and they can do nothing about it.



2. Even if a small-scale forest owner is harvest-ready (this taking a year or two) when he/she decides that log prices are good enough to begin cutting, he/she can't expect to have a gang in place for several months because it will take that long to get to the front of the queue, and by then prices may well have moved down. If logging is underway and price drops to an unacceptable level, stopping the operation will also cost money, and the cycle of uncertainty and delay begins again.
3. Typically, harvesting machinery carries considerable interest and depreciation costs. Consequently logging gangs will agree to charge less per m3 to harvest a forest if they can be sure of continuity of work. This, together with set-up costs, is a significant component of scale economies in forestry. As a rough rule of thumb a logging gang needs 100 ha of forest to keep it busy for a year. Scale economies apply to transport, management and other costs of getting the wood to market also.

The United Forest Group [UFG] has been set up to address these very issues. UFG aims to unify timber resources to generate a sustainable cut, capture scale economies and reduce risk. Small-scale owners will be able to exchange their forests for cash or UFG shares, or a mixture of cash and UFG shares. By obtaining shares owners will be able to participate in the increased efficiencies of UFG's scale and streamlined wood supply chain from stump to market.

However, initially UFG will be focusing on the purchase of cutting rights to 'larger' forests, i.e. those that are more than 50 ha in size. This strategy is likely to change once UFG gets going, but meanwhile UFG is willing to assist proprietors, who own forests less than 50 ha in size, to aggregate their forests into a harvesting and marketing cooperative. Here is a simplified version of what might be achieved. Assume that there are four owners, [A, B, C, & D], each of which is the proprietor of 25 ha of forest yielding 500 m<sup>3</sup>/ha. Their forests have different topography and soils, hence they have different harvest and extraction costs. Scenario 1 tabulates their likely total stumpages if they harvest their forests sequentially, but independently, during 2015 under certain assumed quarterly log prices.

Future quarters	Q1/2015	Q2/2015	Q3/2015	Q4/2015	average
Future export log price \$/m <sup>3</sup>	84.00	72.00	81.00	79.00	<b>79.00</b>
<b>Scenario 1: owners operate independently, which means taking a price risk and incurring higher harvesting costs.</b>					
	owner A	owner B	owner C	owner D	
Hectares cut	25	25	25	25	
Harvest, transport & other costs \$/m <sup>3</sup>	75	72	65	75	
stumpage \$/m <sup>3</sup>	\$9.0	\$0.0	\$16.0	\$4.0	
total stumpage at 500m <sup>3</sup> /ha	\$112,500	\$0	\$200,000	\$50,000	<b>\$362,500</b>

Scenario 2 tabulates the owners' likely total stumpage if they pooled their forest areas to provide scale economies.

Scenario 2: Owners pool their forests, which reduces harvesting & etc costs by \$4/m <sup>3</sup> .					
Future quarters	Q1/2015	Q2/2015	Q3/2015	Q4/2015	average
Future export log price \$/m <sup>3</sup>	84.00	72.00	81.00	79.00	<b>79.00</b>
	owner A	owner B	owner C	owner D	
Hectares cut	25	25	25	25	
Harvest, transport & other costs \$/m <sup>3</sup>	71	68	61	71	
stumpage \$/m <sup>3</sup>	\$13.0	\$4.0	\$20.0	\$8.0	
total stumpage at 500m <sup>3</sup> /ha	\$162,500	\$50,000	\$250,000	\$100,000	<b>\$562,500</b>

Scenario 3 tabulates the owners' likely total stumpage if they pooled their forest areas to provide scale economies and agreed to share the risk of log prices being low when their individual forest was actually harvested.

Scenario 3: Owners pool their forests. This reduces harvesting & etc costs by \$4/m <sup>3</sup> . The owners also agree to insure against the risk of log price fluctuations by pooling income, then allocating it back as if they had received the average price of \$79/m <sup>3</sup>					
Future quarters	Q1/2015	Q2/2015	Q3/2015	Q4/2015	average
Future export log price \$/m <sup>3</sup>	84.00	72.00	81.00	79.00	<b>79.00</b>
	owner A	owner B	owner C	owner D	
Hectares cut	25	25	25	25	
Harvest, transport & other costs \$/m <sup>3</sup>	71	68	61	71	
Stumpage \$/m <sup>3</sup>	\$8.0	\$11.0	\$18.0	\$8.0	
<b>Total stumpage at 500m<sup>3</sup>/ha</b>	<b>\$100,000</b>	<b>\$137,500</b>	<b>\$225,000</b>	<b>\$100,000</b>	<b>\$562,500</b>

Better scale economies would accrue if more forest area was aggregated and cut over several years. For example five hundred hectares of suitable forest brought together by several proprietors, would not only guarantee full time work for one gang, and associated service providers, for five years, but would also would allow the cooperative to guarantee continuity of wood supply to domestic processing plants. The latter should result in the woodlot owners getting better and more stable prices.

Once several forests of different maturities are brought together to provide a sustainable harvest over several years more complex accounting and legal documentation will be needed. For example:

- The owners of forests cut early will need to be compensated for foregone growth, offset by the interest they will earn from early payment
- The owners of forests cut late will need to be compensated for cash delayed, offset by the value they will earn from additional growth.
- This means setting an optimal cutting date for each forest and using a discount /interest rate to adjust revenues if trees are cut on either side of the optimal date
- The discount /interest rate will reflect the trade-off between: value growth rate (improved yield of higher grade logs); interest rate; and the effect of establishing the next rotation earlier or later than planned.

UFG will provide technical assistance to assist those proprietors of forest less than 50 hectares in size that wish to come together and form harvesting and marketing cooperatives.