"Action Plan" be established between Council and local sections — say over a two or three year period a range of goals be prepared and monitored, including membership increase and programme levels.

I share the views widely expressed that to return to equating membership status with university qualifications would be a backward step and that *merit* can be used to successfully differentiate membership categories. It is my view that *merit* can be satisfactorily defined to recognize experience and contribution to forestry in a way that would reinforce our perception of a forester's identity in a broad-based, multidisciplinary profession. It could also be used to increase the gap between *full* and associate membership to provide the former category with extra significance. A new 'slot' may be required at the top end of the membership ladder, although on the surface it would seem reasonable to surmise that very senior personnel can stand on their own status within their oganizations without the necessity for a further class of membership.

The absence of membership growth in recent years has been highlighted as one of the most serious issues before the Institute. Past President Colin McKenzie in 1983 stated: "As credentials we state the Institute represents professional forestry in New Zealand. But can this be true if we have a membership less than half of those eligible to be full members?" The major membership initiative needed, in my view, is one of marketing, in particular to attract the forest ranger group (less than 20% of whom are Institute members, compared with about 75% membership of university graduates).

Following the 1974 changes, a commonly asserted view was that the new *open door* should lead naturally to increased membership. This proved to be a flawed argument as it took little account of the widespread perceptions of the Institute held by the forest ranger group. In fact the 'rot' had set in long before the changes and little has happened since to change old views. I believe that it is necessary to address the entirely natural question of the presently indifferent potential member — "what is in it for me?" Among the further questions to which answers should be sought are:

"Where are we now? Where do we want to go? How are we going to get there?"

I believe that the membership issue cannot be readily separated from other aspects of the Institute's operation, and trust that my comments will make a helpful contribution to the current review.

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NEW INFORMATION

VALUING FORESTS AND FOREST LAND IN NEW ZEALAND: PRACTICE AND PRINCIPLES

T. Fraser, G.P. Morgan, G.R. Watt — FRI Bulletin 99. 1985.

This FRI bulletin is an update of a similar paper produced by G. R. Watt and T. Fraser in 1978 entitled "Principles and Practice of Valuing Forest and Forest Land in New Zealand" (Economics of Silviculture Report No. 115, 1978 (unpublished)). It provides a good general discussion on several approaches to the valuation of forest land and forests. It is suggested that for young trees (age 1 to 3-5 years for radiata pine) replacement cost is the most relevant measure of tree value, and that for older trees current realisable value or potential future value are more important. For the young trees current costs are compounded forward at a chosen interest rate, whilst for older trees potential future value is discounted backward at a chosen interest rate. The authors indicate that rates of 6% to 8% are appropriate rates to use for forest valuation.

The bulletin also briefly covers the internal rate of return (IRR) approach to forest valuation, which the authors conclude "is unsoundly based and should not be used", despite the fact that it is widely used in New Zealand. The IRR method is very similar to the "cost compounded" method recommended by the authors for young trees, and the "expectation value" method recommended by the authors for older trees. The simple and basic difference is that for the cost compounded and expectation value methods an interest rate is chosen to be the compound or discount rate, whilst in the IRR method the compound/discount rate is calculated. Where different valuers have identical basic data (i.e. land value, forest establishment and tending costs, overheads, and expected revenue), then any difference in their estimates of forest value can only reflect a difference in the interest rate used, a rate which is *subjectively chosen* by those using the cost compounded or expectation value methods, and which is *objectively calculated* by those using the IRR method. Knowing this, it is difficult to accept the author's contentions that the IRR method is "not well founded and should be rejected".

Review and comment by B. Everts*

It is of interest to delve a little further into the role of the forest valuer to seek a possible explanation. There are many reasons for producing a forest valuation, and different methods are most appropriate in different circumstances. Basically, however, the requirements for valuations can be split into two broad areas:

- a valuation produced by a disinterested party (a professional forest valuer) as an independent estimate of forest worth. In this situation there are usually two different parties with an opposing interest in the value of the forest, e.g. buyer and seller, forest owner and insurance company, forest owner and a party mounting a company takeover bid.
- a valuation produced by an interested party (generally the forest owner, or a potential buyer) as an evaluation for his own purposes, e.g. a grower checking future forest management options, a potential buyer assessing what he can afford to pay at his own guiding rate of return, an investor undertaking a project evaluation.

In the first broad area, it is obvious that an interest rate chosen by either party will destroy the independent status of the valuation, and it is appropriate that a rate be calculated using the IRR method. It is emphasised that the valuation produced, if used as a sale price, provides for the buyer and seller to have received the same rate of return on their respective investments. As a valuation is only an estimate of sale price, there is nothing to prevent buyer and seller using their strengths and weaknesses to come to a mutually agreeable price. This is quite appropriate in New Zealand where most

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sales of forests are for strategic reasons (i.e. processors assuring themselves of access to future resources) rather than purely for financial investment.

In the second broad area, the interested party is free to dictate or choose whatever interest rate he sees fit to use, as there is no requirement for independence. As such the cost compounded and expectation value methods are quite appropriate methods to use. A good example is N.Z. Forest Products Ltd who are reported to have chosen to value their forest using an interest rate of 4% (NBR, Nov. 11, 1985), a low rate of return reflecting their particular appreciation of their own forest assets. Tasman Forestry Ltd is predicted to choose an interest rate of 6% (NBR, May 23, 1986).

It is interesting to note that the authors consider 6-8% to be used for the cost compounded and expectation value methods of forest valuation, and state that "this range is in line with the theoretical rates of return on current forest investment" — a fact that can only be shown by using the IRR method of analysis. The 6-8% also conveniently falls either side of the 7% the Wellington sharebroking firm of Jarden and Company have dictated should be the minimum return on forestry investment (NBR, Nov. 18, 1985).

An assumption which is made in all three methods of forest valuation, and which is not addressed by the authors, is the assumption that a forest increases in value at a constant rate over the entire growing cycle, as evidenced by the use of a single (chosen or calculated) rate of interest. This assumption is open to debate especially for very young trees, and for mature trees. Due to the lack of a well established and sensitive price size gradient for logs in New Zealand, the rate of value growth of mature trees is reflected by the percentage rate of volume growth, which is generally unrelated to any financial criteria.

One mistake in the bulletin which should be pointed out is made in section 3.1.2, where the authors state that in relation to improvements to the land "work done or materials used that are deemed to be improvements are as follows:

- draining, excavation, filling, or reclamation
- grading, levelling of land, or removal of the substance of the land
- removal, destruction or changing of vegetation
- arresting or elimination of erosion or flooding
- changing of soil fertility or structure."

It is clearly stated in the Valuation of Land Act 1951 (as introduced by the Valuation of Land Amendment Act (No. 2) 1970), that the abovementioned items are specifically excluded from the definition of improvements. This is of importance in valuing forest land in that expenditure on such items as road formation, vegetation removal or fertilizing are not improvements, but all contribute to land value.

The authors have contributed significantly to the general debate on forest valuation procedures in New Zealand, a topic due to be the subject of a seminar to be arranged by the Institute of Foresters. Whilst the IRR method has not received favourable comment by the authors who have rejected it without real justification, readers keeping this fact in mind will find the bulletin readable and useful. It is unlikely, however, that a standard method of valuation for all purposes will ever eventuate. An interesting forthcoming exercise will be the valuation of the State forest assets to be vested in the new Forestry Corporation, which will determine to a great extent the Corporation's ability to earn the rate of return required by Treasury.

NEW ZEALAND FORESTRY COUNCIL FOREST PRODUCT PRICE INDICES

NEW ZEALAND FORESTRY COUNCIL	INDEX AT MARCH 31 1986	QUARTERLY CHANGE (%)	ANNUAL CHANGE (%)
Sawlogs	1176	2.1	13.8
Pulplogs	989	3.6	-4.9
Reconstituted Wood Panel Logs	1086	2.6	6.6
Peelers	1073	5.1	4.1
Preservative-treated Roundwood Logs	1171	0.4	12.9
All Log Groups	1066	2.9	2.8
DEPARTMENT OF STATISTICS			
Consumers Price Index	1179	2.3	12.9
Producers' Output Wood & Wood Products	1213	2.0	15.3
Producers' Output Paper, Printing and Publishing	1118	2.9	7.4

NOTES

i) Expression base for all indices is December 1984 quarter = 1000.
ii) NZFC Forest Product Price Indices *exclude* export incentives.
iii) NZFC Indices are constructed by the Department of Statistics as contractor to the NZ Forestry Council. Quality standards are equivalent to those applicable to other Department Indices.
iv) Examples of typical regimes can be found in NZFC Working Paper No. 7.