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## Silviculture: The Dilemma

**GOVERNMENT EXPENDITURE IS NEEDED TO** reduce the fire hazard associated with the mountain pine beetle infestation, inadequate stocking of some previously harvested and naturally disturbed areas, and the poor health, resiliency and quality of some managed forests. Funds are also required for updated inventories, monitoring and research and development. Finally there are opportunities for viable incremental investments in treatments which grow trees and/or other ecosystem related products and services, faster and better.

On the other hand harvest levels are decreasing, resulting in reduced revenues to government. With public revenues almost entirely directed to health care, education, infrastructure and other essential services, government is not able to provide adequate funding to maintain and enhance the forest resource.

Licensees have little incentive to invest in growing trees when tenures are not appropriate to assure a return on discretionary expenditures. Additionally, the stumpage system promotes cost minimization of key aspects of silviculture (instead of investment) and directs the majority of the future benefits achieved by the investments to government.

The crucial dilemma is that neither government, who owns the timber harvesting land base, nor licensees, who are responsible for most of the key aspects of forest management, will make significant investments to increase forest values. This quandary will not be resolved without structural change.

### Limitations Of The Existing Framework

Silviculture is the set of techniques of harvesting, regenerating and tending a forest crop; the continuum of change to achieve desired timber and non-timber products and services.

Making investments in growing trees viable requires forest and stand-level objectives, full rotation plans which minimize the risks of losses and a basis for adjudicating results. Given the long rotations in most parts of BC, even with increased future real prices for wood products, silviculture treatments face marginal economics, with little room for

error. Consequently, it is essential to promote an integrated approach to investments in silviculture.

Major tenure in BC consists of volume-based and area-based licences. Volume-based licences account for about 60% of the total harvest. As licensees are business competitors, the holders of volume-based quotas have an incentive to harvest the best wood available in a timber supply area first and can have little long-term interest in the new forest, following logging and planting. In addition, cost minimization of harvesting and reforestation activities promoted by the stumpage system undermines long-term management initiatives for growing trees.

Major tenure holders are responsible for planning and executing harvesting and are required to reforest logged areas and tend the new forest until it is free to grow. From this point forward until the trees are ready to harvest again, the Crown assumes responsibility for management. This separation of responsibilities is not conducive to long-term integrated silviculture.

Growing higher value forests would be supported by open, competitive markets for forest products. Unless value recovery from forests is maximized by open market-based pricing of the whole range of products and services that can be generated from the forest, it is not possible to forecast the future viability of integrated silviculture programs. Open markets will also favor increased differentiation in log values and increased utilization.

Under the current system, the majority of timber supply is controlled by few licensees, whose manufacturing facilities produce commodities at minimum cost. This results in partial utilization of the timber supply profile and low-value recovery. A lack of available fibre supply has slowed the development of bio-energy and value-added manufacturing and has contributed to the difficulties in assessing the opportunities for investments in silviculture.

### Opportunity For Change

1. New long-term, secure, area-based licences for core areas of the harvesting land base (areas that are likely to support continuous, economically viable forest-based operations) which would:

- be the platform for the development of regionally based forest and stand level objectives for timber and non-timber products and services,
- provide the basis for integrated planning and optimization of practices throughout the rotation,
- be the basis for assessing accountability for the results of forest management,
- include provisions for compensation to tenure holders for investments in improvements to forest land forgone by government changes in land use or forest policy.

This will require Crown rationalization of some existing tenures to provide space for these new tenures.

1. Development of fully competitive markets, so that the optimum value of different products from the managed forest profile can be realized by tenure holders and the public alike and whose free market prices can be used for analysis of silvicultural investment opportunities by tenure holders. This likely requires further separation of tenures from manufacturing facilities.
2. Promotion of viable investments in silviculture by tenure holders, or other third parties, by ensuring that investors receive the benefits arising from the investment. This may be in lieu of payment of stumpage, which is not appropriate for this business model.
3. Development of accounting and taxation principles and policies which accommodate the unique characteristics of forest management and manufacturing enterprises.

To conclude, unless forest policies and practices which promote increased productivity and value on designated Crown lands become an essential component of forest management in BC, the forest sector will continue to diminish. 🐾

*This article is written from the experience and perspective of second and third generation foresters. Jeff is a senior associate with B.A. Blackwell and Associates Ltd. and has over 24 years of experience in forest resource management in BC. Jim worked in the BC forest industry for 45 years, chiefly as manager of interior and coastal lumber operations.*