ASSOCIATION OF UNIVERSITY FORESTRY SCHOOLS OF CANADA

A Common Strategy

Canada is among the world's foremost 'forestry nations' and thus the wise management and protection of forests is of enormous national importance. Canada contains some 10 percent of the remaining global forest cover, and, in particular, is custodian of about 30 percent of the boreal forest, a significant portion of which remains intact. In fact, boreal forests cover 58 percent of Canada. Forests are of immense social, economic and cultural significance to Canadians. We depend on international trade in forest products. In 2004, for example, the Canadian forest products industry accounted for $45 billion of Canada's total exports of $80 billion. In 2005 the forest products industry accounted directly or indirectly for 864,000 Canadian jobs, and for at least 50% of the income in more than 300 communities across Canada (The State of Canada's Forests 2005-2006). It is no wonder that other nations look to Canada for development of sensible policies to guide sustainable forest management.

The world's population is expected to grow from its present six billion to eight billion people by 2020, and as a result there will be increased demands for clean water, forest resources, energy and access to healthy, natural ecosystems. At the same time, capacity to sustain the Canadian forest products industry through harvesting of primary forests will be increasingly constrained by environmental, social and cultural pressures. In addition, our capacity to draw increased economic return from tourism and supply the water resources required for agriculture, human consumption and industrial uses will depend directly on how wisely we manage our forested landbase.

The eight university schools of forestry in Canada were established to develop the fundamental knowledge essential for the establishment of sound, sustainable forest policies and management practices and to educate young researchers and professionals to apply and broaden forestry-related knowledge. Our professional graduates are essential under present law because only they have the legal authority to design forest management plans. The schools comprising the Association of University Forestry Schools of Canada (AUFSC) have cooperated for many years with the Canadian Forest Service and other federal departments, with policy, management and research branches of provincial natural resource management ministries, conservation organizations, and industry to educate foresters and to target research where it is most needed. Collectively, the forestry schools, forest ecology programs at a few other universities, and the government research laboratories have provided an outstanding foundation for development of effective and well-informed policy and forest management systems designed for the Canadian situation.

The capacity of Canadian institutions to sustain this vital national role has been eroded by factors that have diminished both undergraduate and graduate enrollment. Faculties presently face limited flexibility to adapt curricula to meet new opportunities and societal needs while maintaining professional accreditation of their programs. While we work to minimize such constraints, it is urgent that we recruit and retain the best and brightest faculty available globally, and support the financial and physical resources required for innovative research and teaching.

Canadian forestry schools require sufficient resources to demonstrate to prospective students, research sponsors, and their home institutions that forestry programs can have a profound impact on issues ranging from climate change and cultural heritage to plant genetics and new nano-composite materials. They need to illustrate how forestry programs employ hi-tech knowledge to solve problems and contribute to development of value-added product lines. They must have staff sufficiently diverse to showcase development of sustainable resource management that maximizes the 'triple bottom line', while also addressing the challenges of endangered species, carbon budgets, climate change, water, non-timber values and products, and other issues of broad public importance.

Researchers at Canadian forestry schools must remain competitive for basic research funds through NSERC and SSHRC programs, as these are essential for developing new knowledge and supporting graduate students. It is also important to build strong collaborative relationships with colleagues working in forestry but based in federal, provincial, industrial and academic institutions. New business models for collaboration and funding should be considered and developed. However, it is essential that such developments and collaborations be driven by those with a broad view of the forestry enterprise, and not just the urgent focus on incremental changes to present technology. Such people and their associated programs, are concentrated in Canadian forestry schools. It will be costly to re-build integrated capacity if it is lost by promoting development of more singular expertise spread across other university sectors.

Broad-sense forestry faces many new technical and scientific challenges driven by international environmental protocols and conventions. For example, we need to manage forests so that biodiversity, in all its complexity and including endangered species, is preserved. We must consider and maximize carbon sequestration and storage in forest management strategies. We search for new ways to value all ecological services supplied by forest ecosystems and optimize forest management practices and policies using strong understanding of relevant trade-offs. All of these factors must be considered in light of the most current knowledge, if we are to meet the ecological challenge of developing sound management of boreal and other Canadian forests, particularly during periods of increasing climatic change and instability. Development of a bio-based economy, including bioenergy and new bio-based products, stands on the forestry horizon. Such potential development requires that forest management become increasingly complex and encompassing, as it embraces a larger range of values. Clearly, we must also protect the cultural heritage of Canadian Aboriginal peoples, most of whom hold ancient stakes in the forest. More than at any time in the past, we face the social complexity of reconciling very different philosophies and priorities in integrated forest policy and management practices. This challenge is unlikely to be met by any other than forestry specialists.

The issues discussed above cross a tremendous variety of disciplines, and working through them will require high technological knowledge and capacity to manage complexity. Canada has the opportunity to show the world that forests can be managed sustainably while, at the same time, supporting several important economic sectors, but it can only do so through the development of new approaches to forest education and integrated forestry that will be best led by its university forestry schools.

Actions to be taken

To meet these challenges, the faculties of forestry are establishing a common strategy and action plan, and seeking participation of other partners, in a national endeavor. In line with the *Innovation Strategy of the Government of Canada*, outlined in the document *"Knowledge Matters, Skills and Learning for Canadians"*, the AUFSC proposes the following:

- The forestry schools will join forces with the broader forestry community to enhance the image of the forest sector and the forestry profession
    - to interest students in enrolling in forestry school programs, and
    - to fulfill succession planning needs for future employees of the forestry sector.

- Canada will develop an effective partnership framework among all forest research organizations in the country
    - to access and use research dollars more effectively,
    - to sustain a competitive forest sector for Canada in need of continuously developing technologies,
    - to tackle the new, highly complex issues of immense social, environmental and economic importance, and
    - to allow Canada to meet its national and international obligations and to retain its position as a leading forest product producer.

- The forestry schools will develop an effective framework for cooperation with each other and government agencies, including:
    - the sharing of curricula to maximize expertise available to all programs,
    - the sharing of personnel with government agencies,
    - strong research collaborations, and
    - joint delivery and/or the transfer of courses and credits among institutions, where appropriate.

- The forestry schools, through partnerships with funding agencies, will develop effective international forestry education and research
    - to develop the skills and competencies required to manage Canadian and global forests sustainably,
    - to attract the best and brightest students to forestry programs, and
    - to develop a world-class labor force to meet the current and future skills requirements.