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Mr Ian Dundas
Committee secretary
House of Representatives
Standing Committee on Agriculture, Fisheries and Forestry
Parliament House
Canberra ACT

Re: Inquiry into rural skills training and research

Thank you for your invitation to contribute to this enquiry. I would like to make the following comments on the basis of my experience as Forestry Program Convenor at ANU, co-chairman of the International Union of Forest Research Organisation (IUFRO) working group on Forest Education (6.15.00), member of the Expert Independent Advisory Panel reporting to the Victorian Government, and consultant to various Commonwealth, State and Local Government and non-Government bodies.

The professional forestry degree, as practiced in a well-provisioned university environment, is embedded within a strong science discipline but is multi-disciplinary and includes major components of arts/humanities or the social sciences and other fields. Graduates need to understand the unpinning sciences (biology, botany, chemistry/soil sciences, genetics and ecology), the context of forests in Australia (policy, participation, history), applied skills (mensuration, statistics, silviculture and economics) and the sustainable production possible from these forests (wood and non-wood products and their properties). However, this understanding must be integrated and this is best achieved through problem-based approaches like the development of a comprehensive management plan for a multi-objective forest (e.g. forest planning and management “cap-stone” courses). Of course, there are also the “life-long learning skills” of problem-solving and effective learning that allows the graduates to cope with new situations and expanding knowledge. As well as providing a minimum set of skills and learning for forestry professionals, these skills are extremely valuable for any natural resource management arena. Graduates with the above skill set are readily employed by nature conservation agencies, water management boards, rural fire services, pasture protection boards and aid agencies as well as traditional forest employers. Many of these vacancies are set in a rural context which means that the professional forestry degree is especially relevant to rural Australia even when forest production is not a major concern.

In a recent presentation (IUFRO World Congress, Brisbane 2005), Dr. Ann M. Bartuska – Deputy Chief, USDA Forest Service – outlined her understanding of the emerging themes for forest research and teaching. She concluded that foresters are needed to value and produce an increasing range of products (wood, sustainability, biodiversity, genetic diversity, carbon sequestration, clean water, clean air, ...) in an environment of increasing rate of change and public concern. We also need “to sustain the disciplinary building blocks – genetics, silviculture, entomology – but put them to work in new ways” and further incorporate the new disciplines, e.g. social demographics, biotechnology and ecological economics. Finally, we need to building on the unique heritage and skills of Forestry. I believe that these themes are also relevant to Australia. Dr Bartuska also noted that 60% of the professional Foresters employed within the USDA Forest Service (which is made up of about one-third Foresters) are eligible to retire within 5 years, which indicates that the US may also have a major problem with recruitment.

It is my contention that Australia will need an increased number of Forestry professional graduates of the type referred to above. These graduates will need to be able to practice “practical” forestry as well as being readily adaptable to manage an increasing range of “goods” from the natural environment. They will also need to be familiar with the way science advances and have an expectation that research in a wide range of disciplines can be adapted and integrated to provide solutions that change “what is done on the ground.” Such graduates can only be produced by universities with a strong focus on research in these appropriate arenas as well as good teaching facilities. It is also not practical to achieve these teaching/learning outcomes in less than the four years of a professional degree (despite increasing economic and administrative pressure to do so). The students themselves however are also a fundamental part of the teaching/learning in this environment and effective techniques like peer group learning can only occur when there are a minimum number of students able to interact on a regular basis. It is unfortunate that the total number of students graduating with a “forestry or forestry-like” degree are scattered across more than a dozen institutions in Australia which denies the critical mass necessary for peer-group learning.

Finally, I agree with the statement that there is a shortfall in the numbers of graduates with professional forestry education to meet current needs. I base this conclusion on the following observations and personal experience:

- Representatives from major forest land management agencies annually visit the ANU to offer students information on their agencies and what they offer new graduates. In 2005, for example, representatives from public land managers from Victoria, Tasmania, Western Australia, Queensland and NSW all made presentations to students in the final year undergraduate courses I coordinate. They included reasons why the students should consider applying for employment, in effect, “bidding” for the student interest. At least one of these organisations could have employed the entire graduating class.
- I regularly receive enquiries from public and private agencies requesting names of graduating (or even near-graduating) students from the B.Sc.(forestry) and Higher Research Degrees who could be approached for employment offers. I used to be asked to simply put notices of forestry related vacancies on student noticeboards but the competition has become so strong that employers want to be more proactive in targeting applicants.
- Jobs that are suited to professional forestry graduates are being offered to graduates with less specific degree focii (e.g. B.Sc. or B.Sc.(Environmental Management)) in the absence of available Forestry graduates. This has often led to early problems with these more general degrees not offering the students an

understanding of the complex interaction within the forest and with society, nor the practical oriented problem solving approaches typical of the well-established Forestry programs.

- Australian employers have recently advertised and attracted professional foresters from overseas (especially New Zealand and South Africa) in an attempt to overcome shortfalls in their professional workforce.
- World-wide trends of students enrolling in, and graduating with professional Forestry degrees have also been reported to be falling significantly without any associated decrease in the demand for graduates. This also means that Australia cannot rely on overseas professionals to make up shortfalls.

In conclusion, I believe that:

- There is a current shortage of professional foresters graduating that is unlikely to be met by overseas recruitment.
- The need for graduates with the wide range of skills provided by the professional forestry degree is increasing and will continue to increase as natural resource issues require more integrated and multidisciplinary management.
- Rural-based industries and communities are particularly disadvantaged by the shortage of professional foresters as these graduates have, in the past, occupied a wide range of rural-based land management positions and not just traditional forest industry activities.
- Critical numbers of students need to be encouraged and supported to attend adequately resourced universities to enable multidisciplined, problem-based and peer-based learning of the highest calibre to meet the needs of the changing environment.

Yours truly,

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Monday, 20 February 2006