

# **The National Forestry Masters Program: a new era of collaboration in professional forestry education**

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## Abstract

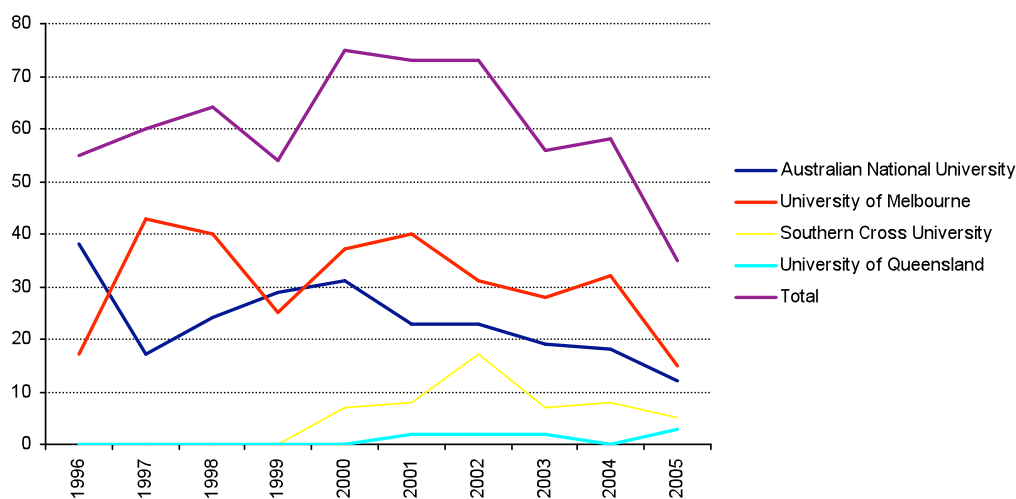
Both competition and cooperation have characterised Australian forestry education over the past century. The recent establishment of the National Forestry Masters Program, a collaborative framework for graduate professional forestry education, is the most significant cooperative endeavour in Australian forestry education since the establishment of the Australian Forestry School in 1926. We argue that the NFMP is a logical means for sustaining and advancing professional forestry education in the larger context of the Australian higher education sector, and that a strategy which identifies and enables the roles and responsibilities of all key actors with significant interests in forestry education is necessary to ensure that professional forestry education in Australia survives and prospers.

## Introduction

Recognition of the need for professional forestry education in Australia dates back to 1887, when the Indian Forest Service Conservator, F.D'A Vincent, recommended establishment of a forestry school in Victoria (Roche and Dargarvel, 2008). It is now nearly 100 years since the Victorian School of Forestry was founded in 1910. Negotiation between the states about the establishment of a national forestry school continued until its establishment in 1926 (Carron 1985), and exemplified the mix of competition and collaboration between the state agencies and universities that

continued to characterise Australian forestry education. The recent development of the National Forestry Masters Program (NFMP – see <http://www.forestry.org.au/masters>) is the most explicit example of collaboration in forestry education since the establishment of the Australian Forestry School. This time round, at least, the initiative includes Victoria.

The current shortage of forestry graduates (Figure One) in Australia is now recognised within the sector as a pressing problem. The 2006 forestry sector skills report (NAFI/A3P 2006) documented the strong demand for professional forestry skills and graduates, with around 70% of forest growing and management organisations reporting a shortage of foresters<sup>1</sup>. The lack of suitable candidates to fill vacancies in the Australian forest sector has forced many organisations to recruit internationally to fill professional vacancies. Whilst the globalisation of forestry employment has many benefits for employees, employers and the profession, it also has direct and indirect costs, and the recent reliance of the Australian forestry sector on international recruitment suggests substantial local market failure in the extent of forester demand – supply imbalance. These trends in undergraduate enrolment are also evident in North America and many European countries (Kanowski 2008).



**Figure One: University forestry graduates 1996-2005**

(Source: NAFI/A3P 2006, Figure 9.9)

<sup>1</sup> The range of skills shortages reported by the sector incorporates a number of skills sets, both professional (e.g Roberts 2007) and vocational. Given the focus of the NFMP, this paper’s focus is limited to tertiary education for professional foresters.

From the start of Australian forestry education until the 1980s, most students studying forestry in Australia were supported by state forestry agencies or other scholarships. Nor were there many alternative environment-focused degrees until the late 1980s. As a result, the number of forestry students in Australia grew to a peak in the 1980s, and has declined subsequently. There are various reasons to which this decline can be attributed; some reflect broader societal changes, such as the urban shift in Australia's population, and an attendant decline in interest in professions associated with rural and regional Australia. Australian agricultural science education faces a similar challenge in this respect (Pratley and Leigh 2008). Other reasons may also be in common with agriculture, such as community perceptions of a dumb, sunset industry rather than a smart, innovative one. Unpleasant and misinformed though they may be, such perceptions are not necessarily entirely without foundation – for example, the proportion of the agriculture, forestry and fishing sector with a degree qualification, at around 7% in 2004, remains well below that for competitor sectors of the economy - eg 17% for mining and 24% for services (Productivity Commission 2005, Chapter 5).

These changes are taking place in the context of diminished national investment in education, at least in relative terms. Recent reviews of Australian innovation and education (Commonwealth of Australia 2008, Cutler 2008) recognised that while higher education lies at the heart of Australia's research and innovation system, Australia is falling behind other countries in investment in its higher education system.

One of the consequences of the diminished investment in higher education, and of the university funding models that have prevailed over the past decade, has been the increasing inability of universities to sustain programs with low student numbers. This is particularly problematic for professional degrees such as forestry, which require breadth across a range of topics and problem solving skills (Brown 2003).

In response to these factors, five Australian universities offering forestry education - Australian National University, Southern Cross University, University of Melbourne, University of Queensland and University of Tasmania - cooperated to initiate the Australian National Forestry Masters Program ( <http://www.forestry.org.au/masters/>),

with seed funding over 3 years of \$1.56 million from the Australian Government. The NFMP was modelled in part on the relatively new European masters programs, including two in forestry (SUFONAMA and SUTROFOR), which are predicated on student mobility. The seed funding has been used principally to employ program convenors at most participating universities, and to provide c. 70 student mobility scholarships. Political support from forest sector peak bodies was instrumental in securing the seed funding, and support from the Institute of Foresters, the CRCs for Forestry and Bushfire, Greening Australia, and other forest sector organisations has been fundamental in delivering the program.

### The National Forestry Masters Program

The National Forestry Masters Program is a coordinating framework linking graduate coursework degrees already offered at the five participating universities. Students enrol at one of the participating universities, and follow its degree rules, but can access courses offered by the other partners. The program thus offers students access to the best available teaching, field experience, industry and research opportunities across Australia. It also encourages the development of professional networks, and links students to forestry in the Asia-Pacific region, by requiring students to participate in two joint courses, one of which is conducted abroad.

The NFMP's collaboration at the postgraduate coursework, rather than the undergraduate, level reflects a number of factors: new institutional initiatives, such as the "Melbourne Model", which focus professional education at the graduate level; the continuing challenges of recruiting students into undergraduate forestry programs; and opportunities for encouraging a more diverse group of students, including those with first degrees in entirely different topic areas, and those with professional experience both within and outside the forest sector. Nor is the approach new for Australian forestry education – it emulates, in a contemporary context – that which was used at the Australian Forestry School.

The NFMP therefore plays an important complementary role to the undergraduate forestry programs still offered at the Australian National University and Southern Cross University. In addition to attracting a different cohort of students, the NFMP is

helping to maintain courses – such as forest operations – which undergraduate numbers alone cannot sustain. While it may be the case that a two-year graduate program cannot deliver experience and learning identical to that of a traditional four-year undergraduate degree, it is also the case that professionally-oriented masters are becoming a common means – both internationally and within Australia - of delivering professional education from the basis of a more generalist undergraduate degree, or one in a different topic area. Nor is it prudent for the Australian forestry sector to seek to continue to rely on the graduates of undergraduate forestry degrees, unless either the numbers of students attracted to undergraduate forestry programs increases substantially, or educational policy changes to recognise the need for specific , greater investment to sustain specialist undergraduate programs such as forestry.

The NFMP has been successful in its goals of both attracting new candidates to the profession and assisting the further development of individuals already working within the sector. To date, more than 50 students are participating in the program.

Current NFMP students:

- include individuals from a wide range of backgrounds - including information technology, landscape architecture, natural resource management, telecommunications and physics;
- range in age from the mid 20s to the mid 50s, and;
- are based in five states and territories.

Most NFMP courses are offered as two-week blocks, to facilitate student mobility and enable participation of professionals already in employment. There are both pedagogical advantages and disadvantages to this model, as with any other, but it is increasingly common at all levels of tertiary education. The learning challenges presented by compression of the course into a concentrated period can largely be addressed by pre- and post-contact activities, and by thoughtful structuring of the contact time; an associated challenge for many students is finding sufficient time pre- and post-contact to prepare adequately, and to complete assessment requirements.

#### Other NFMP activities

The NFMP has also served as a vehicle for collaboration between universities to deliver other educational programs. In 2008/9, the NFMP consortium was funded

under the Australian Government's Asia Pacific Forestry Skills and Capacity Building Program (APFSCBP), administered by the Department of Agriculture, Fisheries and Forestry, to deliver 3 forestry training programs in the Asia – Pacific region in 2008/09. These were:

- *Certification training* – delivered to c. 40 participants from across the region at Deramakot Forest, Sabah;
- *Participation in NFMP coursework and a work placement in Australia* - for students from Malaysia, Laos and the Philippines; and
- *Leadership training* for c.10 emerging forestry leaders in the Asia-Pacific region, conducted in Japan in association with the British Council's Climate Cool program.

The offshore components of the APFSCBP have also been open to small numbers of NFMP students, providing them with additional learning and networking opportunities.

#### Next steps for the NFMP

The Australian Government seed funding for the NFMP will cease at the end of 2009, although some funds will carry over through 2010. The current NFMP model is predicated on student mobility, and it is hard to envisage any collaborative model that does not include some level of student mobility. Staff mobility, while possible in principle and already a small part of the NFMP, is less attractive because it does not deliver efficiency gains in terms of either class size or lecturer workload.

Consequently, the central challenges for the NFMP in the near and medium terms are to secure sufficient funding to sustain a minimum level of provision of mobility scholarships, and to continue recruiting activities for both graduate and undergraduate forestry programs. The Institute of Foresters of Australia, in conjunction with the NFMP partner universities, has taken the lead in the former, through the establishment of a forestry education trust fund. Supporting that trust fund, and developing and sustaining effective recruiting strategies, requires an effective partnership across the whole Australian forest sector.

One way of thinking about this partnership is to identify the respective primary and shared roles and responsibilities of the key actors concerned with forestry education. The principal of these are summarised in Table One.

Table 1. Principal roles and responsibilities of actors associated with forestry education

Partner \ Activity	Professional body	Universities	Forest sector businesses, agencies and bodies	Government (DEEWR & other relevant departments)
Student recruitment	Engage membership in effective recruiting	Promote forestry degrees within overall recruiting strategy	Promote forestry as a profession as part of the overall business and communication strategy; encourage and allow relevant staff to pursue degrees	Recognise and support forestry as a sector of national importance and critical skills shortage
Scholarship funding	Continue to take lead on behalf of the sector	Pursue funding for forestry scholarships within the scholarships and endowment portfolio	Recognise the need for scholarship funding from the sector, and contribute to scholarship pool	Recognise the need for scholarship funding in the sector; contribute to scholarship pool; ensure tax regulations encourage corporate and individual support
Professional development and networking	Facilitate student membership, networking activities, and mentoring Provide fora for connecting students and employers (eg advertising within newsletters, web portal)	Actively engage sector in course delivery and extra-curricula events Engage with industry events	Provide vacation work placements and internships. Be responsive to requests for engagement at universities Support employees to undertake professional development opportunities within NFMP	Support for international exchange programs and placements
Ensure program meets needs of sector	Active role in communicating members' views	Establish mechanisms to enable external partners to contribute to curriculum review and development	Contribute constructively to curriculum review and development, cognisant of constraints within universities	Support program and curriculum development to meet sector needs.

The structure represented in Table One is intended to emphasize that all interested parties have complementary and important roles in supporting forestry education. As discussed at the IFA Forestry Education Summit in May 2008, and at subsequent meetings, these roles need to be coordinated within an overall strategy for fostering forestry education. This strategy would recognise the interdependencies between both activities supporting forestry education and the roles of the different actors.

It is imperative that those parties committed to sustaining and developing forestry education – the IFA, the universities, and the forest sector businesses who employ foresters and agencies which have responsibility for advancing the sector’s development – agree and give effect to a forestry education strategy. We have at most until mid-2010 to do this if the NFMP is to be sustained.

The consequences of not agreeing and implementing such a strategy are likely to be that the cooperative mechanism represented by the NFMP will collapse – not for lack of goodwill, but for lack of resources to enable it to continue. Should the NFMP not continue, forestry education will revert to being the responsibility of individual universities. Unless the policy settings and funding for higher education change dramatically to favour forestry, the ultimate consequence is likely to be progressive loss of capacity for forestry education at both undergraduate and graduate levels, an enhanced risk that forestry education in Australia will end, and further deterioration in the availability of forestry professionals with skills relevant to Australian forestry. Conversely, sustaining a collaborative model should allow participating universities to evolve their contributions to the NFMP, and forestry education more generally, to reflect both their strengths and the strategic directions of their institutions, and minimise the risk of loss of forestry education capacity nationally. It will also provide the vehicle for continuing collaborative engagement with forestry education and training in and for the Asia-Pacific region, and more widely, which will itself further support Australian capacity in forestry education.

### Conclusion

The NFMP has proved in its initial phase to be a feasible and effective model for delivery of forest education in the broader context of the contemporary Australian higher education system. It was established and has succeeded to date because of the commitment of many partners in the forest sector; it needs their continuing



commitment and support to be sustained. The cooperative model represented by the NFMP offers the Australian forestry sector the best strategy for the continued delivery and further development of specialist forestry education, at both graduate and undergraduate levels, as the basis for meeting the sector's needs for professional foresters. The development and implementation of a strategy based on the respective roles and responsibilities of key actors with interests in forestry education is the next critical step in sustaining forestry education; we have only a little time to complete this task.

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