At the top of the tree

SILVA Network Vice-President Siegfried Lewark highlights how higher forestry education is meeting societal demands, and why it is needed now more than ever...

Even if the number of graduates of forest sciences on the European labour market is not very high, they still play a very special role due to their focus on forest management and ecology of roughly one-third of the European landscape and the major natural environment.

Higher forestry education in Europe has a history of more than 200 years delivering foresters: men who care for forests and organise forestry work. Many boys have wanted to become a forester at some time, as there is a very special image of a forester (Fig. 1), and there are historical reasons for differences in different parts of Europe, which are reflected in the present higher forestry education.

Roots and history are also shaping the public image of forestry and foresters. Therefore, it is necessary to look back as far as into the 19th Century. Higher forestry education institutions, ‘Faculties of Forestry’ at universities for a long time in many parts of the world had undisputed positions, educating mostly future staff of state forest services. 19th Century forestry schools were often academies integrated into state forest services, and students and teachers often former army officers – one of the factors that shaped the male dominated hierarchies of the state forest management, where women appeared only as seasonal workers planting trees.

But modern forestry looks different and higher forestry education institutions are acting as such, providing education and research on the relationship between people and forests beyond forest management, and preparing their students for a much broader scope of occupations. Even within forestry, the situation today has changed – so the occupational field and activities of foresters are different (Fig. 2). Forestry is not a male domain any more. The distinction between careers of foresters on different levels, forest rangers and higher forestry officers, becomes blurred.

Societal demands challenge higher forestry education

The demands from society on forestry and forest sciences are in a dynamic and rather radical development due to climate change and the growing demand for bio-energy in the first place, with nature protection and with the role of forestry generally as a part of primary production in a more and more service industry dominated world, and with impacts of urbanisation and growing recreational needs. All these changing demands affect content, direction and priorities of forest sciences and higher forestry education, which is developing accordingly.

Of course, universities educate experts in many fields like biology, environmental economics or governance, but there is none like higher forestry education where ecological, technical and social science related competences are equally integrated in one curriculum. Here lies the great strength and competitive advantage of forestry graduates.

At the same time, the trends in the forestry sector itself lead to new demands: while there is a growing need for forest products, forest enterprises as representatives of the primary sector suffer from economic constraints.

Modern concepts of the universities

Students have to be prepared to cope with these demands. Traditionally, staff of forest services always needed competences in many fields, which resulted in a very broad spectrum of obligatory subjects in the curricula: from soil and vegetation science over biometrics, forest growth and yield, mensuration and wood utilisation to ergonomics, work organisation, and economics and law. In recent years, the spectrum has been supplemented by subjects like genetics, GIS, bio-energy, gender studies, and environmental governance.

Of course, competences comprise thorough knowledge in all the subjects, as well as personal, social and ultimately problem-solving competences. To keep the broad competences of a ‘good old forester’ and to add key ‘new’ competences looks like an attempt at squaring the circle one more time.
These demands are challenging the universities, which are presently restructuring higher education according to the Bologna process. In many European countries, forestry science curricula have to be transformed from one cycle to two cycle structures.

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In addition to coping with these structural changes and the continuous updating of contents and methods, universities are adding or replacing subjects, creating new, more specialised curricula and intensifying the contact with the occupational system (see mindmap in Fig. 3). The outcome, i.e. competences of graduates and their success on the labour market, also very much depends on didactic approaches. There are good examples of how learner and task oriented courses with appropriate test methods contribute to competences. Linking practice and education has a long tradition in courses and excursions. It can still be improved by learning with actual tasks from practical working life, internships in organisations also beyond forestry, and getting practitioners into universities. Higher forestry education in Europe is changing fast.

What is rather new for the higher forestry graduates is that there is not one single field of occupation any more. They have to think about their motivations and strengths, and then look for organisations and occupations that are suitable for them, including NGOs, media, consultants, nature protection, water and waste management, in communities, within and beyond the public sector. Increasingly, they will work in projects with short-term contracts or as hired consulting experts, needing entrepreneurial and project management skills, in addition to the traditional subject related skills.

Recent innovations demonstrate that universities understand their new role preparing the students for lifelong learning, so that responsible, highly qualified and motivated graduates are going out into working life, within and beyond forestry.

SILOA Network is an academic network working for the improvement of higher forestry education in Europe (silva network).