Rationale and objectives

Education in Forest Sciences has a long tradition and undergone fundamental changes: after aiming at preparation on occupations in forest management in a traditional stage today in many countries of the world in a relationship stage it is about managing natural resources for valued people and ecosystem relationships.

The need to explore new fields of education stems not only from the requirement to find answers to the questions posed by our civilization, but also from accumulated research knowledge and practical achievements of forestry that should be properly utilized. Forest knowledge is the basis for understanding the relationship between people and forests and the principles of management of forests regardless of regional disparities.

The system of higher education has been facing fundamental changes, triggered by globalization and global change, altering expectations of stakeholders and society from university graduates and novel insights of educational sciences - from teaching to learning.

We should also take into account that the competence profiles of forestry graduates do not always comply with the requirements posed by potential employers, while emphasizing that the professional attractiveness of the forestry sector for graduates is decreasing. Also many of the graduates will find employment outside of the forestry sector, some in NGOs and still others will work self-employed.

As a response education in forest sciences has to focus more on methodical competencies, and knowledge integration and communication across disciplinary borders. The development of skills, enabling graduates to tackle novel, complex problems, has been widely missing and focus was on contents instead of generic skills and methodical competencies. Other developments include the growing role of universities in continuing education, new approaches to distance education including technology and didactics of e-learning, and the movement towards Open Education Resources (OER).
Programs of higher forest education have been challenged even more by changing societal demands, such as climate change, changing patterns of demands for ecosystem services, and novel resource governance systems. The development of forest sciences as well as of forestry curricula should adapt to or even anticipate those trends.

Account should also be taken of elements of traditional knowledge, forming strong cultural, religious and ethical links and promoting historical and generation continuity. Sustainable Forest Management requires knowledge of the uncertainties and risks on a global scale not only identified as "risk management", but also of the consequences to forests and forestry caused, for example, by aging of populations in developed countries.

Consequently development of forest sciences curricula should move towards:

- Focusing on generic and methodical competencies instead of contents and descriptive approaches, enabling graduates to tackle novel, complex problems;
- Competencies to integrate and communicate knowledge across disciplinary boarders and to analyze the existing interactions;
- New learning units addressing challenges such as climate change, adaptive ecosystem management, governance systems, gender issues, forests as source of energy, role of forests and forest products in rural development and poverty alleviation as well as the assessment of other environmental and social impacts.

IUFRO TF EFS is also an attempt to answer to the growing demand for coordination of research based knowledge and education at university level.

The IUFRO TF on Education in Forest Sciences aims, both at the theoretical foundation as well as in some parts at the practical implementation of responses to new trends in forest education at university level, will be assess demands and visions and propose appropriate methods.

There is an urgent need for an analysis of the existing assumptions and foundations of curricula in Universities and for providing programs in forestry sciences at all levels, in particular on the level of Master programs. Approaching the development of a new model of forestry, based on the interactions between people
and forests, also requires a broader consideration of direct, problem-oriented education pursued in an open laboratory, the forest, in the curricula.

The objective of the Task Force on Education in Forest Sciences (EFS IUFRO TF) is an improved practice of Education in Forest Sciences worldwide.

EFS IUFRO TF therefore aims at contributing to development of standards of Education in Forest Sciences, which meet the requirements of today, using experiences and examples of good practice in the IUFRO community and cooperation with higher education specialists.

Achieving an adequate level of education is not just to develop good and innovative curriculum. Equally important is the use of appropriate tools and techniques in knowledge transfer, and the effectiveness of which should be measurable.

To assess the entire learning process, which is the sum of the substantive quality of the program, methods and techniques of information and the final effect, which is attained by the student’s level of knowledge; it is possible by the use of, new innovative solutions in this area.

The fulfilment of these conditions will be based on the results of research carried out under (TF ESF Learning Initiative), which will be conducted during a series of exercises/workshops with students/participants and teachers on the assessment of innovation and the effectiveness of teaching.

**Activities and expected outputs**

Activities of the EFS IUFRO TF in the attempt to reach above presented objective were worked out in the course of the establishment of the Task Force and include:

- Survey of forest curricula ("state of practice") and an attempt at a comprehensive analysis of challenges and opportunities facing Higher Education in Forest Sciences in different parts of the world.
- Development of a framework on required competencies of graduates of education in forest sciences, to be characterised in terms of skill dimension, context, and level of mastery.

- Development of a standard curriculum assessment for higher forest education through workshops and a IUFRO Learning Initiative (Summer Schools) with the idea and the opportunity to check and to test new programmes and solutions in education at the university level and also integrate students from different parts of the world under the IUFRO umbrella, in joint operations with the IFSA.

- Curriculum assessment with the participation of young teachers and employers in workshops.

IUFRO ESF Learning Initiatives will be specially organised sessions and workshops, which will test adequately prepared special education programs and use different teaching techniques. Students and educators will conduct these tests both as a subject and an object. The methodology of this experiment will be prepared in consultation with specialists from education, and the first experiments scheduled for the third quarter of 2012. Students and participants will recruit from forestry faculties worldwide and from various institutions related to forestry authorities.

### Schedule of activities

**Seminars:**

2011
- review of initial concept, methodology and principles of innovative educational tool IUFRO EFS Learning Initiative
- development of a standard curriculum assessment for higher forest education

2012
- assessment of various curricula used in higher forest education
- assessment and further elaboration of the outputs from the first IUFRO EFS Learning Initiative

2013
– elaboration of the initial version of model curricula
– curriculum assessment with participation of young teachers and employers in workshops

2014
– final elaboration of the principles and methods used in IUFRO EFS Learning Initiative

**IUFRO EFS Learning Initiative**

2012
– testing of innovative educational tool IUFRO EFS Learning Initiative

2013
– testing of elaborated model curricula

2014
– further testing of examined educational methods and elaborated curricula

**Annual conferences:**

2012
– presentation and discussion on issues within TF scope in form of plenary sessions and poster presentations

2013
– presentation and discussion on issues within TF scope in form of plenary sessions and poster presentations

2014
– presentation and discussion of TF final outputs during IUFRO World Congress in Salt Lake City in form of plenary session

Details and time of individual events will be agreed and set with their organizers following the TF progress. During TF activity we plan to publish outputs of the research in form of seminar/conference proceedings, scientific books as well as papers in devoted journals.
Members of the TF, now - more than 40 people from all regions of the world represent different fields of knowledge of forest, both at university level education and the level of forestry experts and other scientific disciplines, including - experts in the field of education and skills transfer.

Coordinator: Piotr Paschalis-Jakubowicz, Poland
Deputy Coordinator: Siegfried Lewark, Germany
Secretariat: Krzysztof Stereńczak, Poland

Core group, which representing about 20 people, among others, Vice-rectors of universities, Deans of Forestry Faculties, Directors of Research Institutes, professors who perform various functions in the international educational networks as well as representatives of student organizations.

IUFRO, the leading global forest network, has the potential to trigger and foster a process of change in higher forest education, aiming at improving the competitiveness of forest sciences among the portfolio of disciplines at university level. IUFRO has included Education in Forest Sciences into its scope of activities in 1995 and established an education group, which will support the Task Force on Education in Forest Sciences.

The IUFRO TF EFS fits in the main directions of the IUFRO Strategy for the 2010-2014 periods, particularly in relation to the activities described in “Expanding strategic partnership and cooperation” and “Strengthening communication and links within the scientific community and with students”.

The IUFRO TF EFS will be organized and run by the TF coordinator and his deputy and assisted by a TF secretary. Activities of the TF will rely on active participation of IUFRO members and education experts outside of IUFRO as members of the TF, which shall represent different parts of the world as well as men
and women with a broad range of experiences in the field of Education in Forest Sciences and in higher education in general. They would be identified on basis of the selection criteria:

- coverage of necessary areas of scientific expertise
- geographical balance in terms of coverage of different parts of the world,
- gender balance, involvement of different stakeholder groups (students, employers, etc.),
- one representative of FAO (to build a link to the planned new FAO advisory group)

The TF will work on a global scale and seek close collaboration with other networks of education in Forest Sciences as SILVA Network, ANAFE, RELAFOR, IPFE and IFSA.

To these aims the Task Force has set up an EFS homepage where additional information can be found and uploaded.

The current scope of the programme, its aims and scope of activities relating to the some directions of the tasks are not a ready solution and answer to all questions raised, but an open ended working programme. The detailed scope, research tasks, responsibilities of individual researcher, deadlines and methods of solutions and implementation will further developed during subsequent activities, based on the outcomes of the first workshop from February 2011.

Resource implications / sources

Polish State Forests gave financial guarantee for support of the TF realisation according to presented aim, scope, methods and schedule. Further efforts will be taken to provide additional financing of TF by FAO, Eустаfor or/and other national and international institutions.

Partners
As the TF will work on a global scale and we seek close collaboration with other networks of education in forest sciences as SILVA Network, ANAFE, RELAFOR, IPFE, IFSA as well as other networks established in various countries (e.g. in Russia).