



KEY MESSAGES AND PROPOSALS FROM PILOTING THE OSKA PROGRAMME

The Estonian Qualifications Authority carried out, in the pilot round of OSKA¹ (June 2015 – March 2016), a survey on the needs for labour and skills in three sectors: information and communication technology (ICT), economic accounting, forestry and timber industry. The survey sought to answer the question of **how should the training provision in each sector be modified to meet the sector's needs for labour and skills over the next 10 years?**

Sectoral expert panels, bringing together experts from trade associations, employers, educational institutions and the public sector, were established in order to analyse the situation in the sectors and make relevant proposals. The expert panels were requested to assess the impact of future trends and Estonia's strategic development objectives in the possible developments in the sectors over the coming decade; to assess how many workers and which skills are required in the Estonian economy; to assess training provisions and formulate training needs in each sector; to make proposals for actions to meet the training needs.

The following key messages for adapting the educational courses on offer to labour market requirements and to increase the competitiveness of the Estonian economy appeared as a common denominator of the sectors:

- 1. Increasing the workforce numbers generating higher added value.** To that end:
 - reduce school dropout rates; both educational institutions and employers should implement more flexible teaching and working arrangements; to offer career services to support learners at all levels of education;
 - offer curricula that take into account future needs and meet the expectations of professionals in order to encourage experienced professionals to continue their education at the next level;
 - schools should attract more foreign students and different parties should find solutions for their successful entry into the Estonian labour market;
 - make, through cooperation between all parties, technical extra-curricular activities available to children and young people and to contribute to entrepreneurship studies (including promoting enterprise) to ensure the existence of a new generation of highly-skilled workers.
- 2. Employers expect formal education and training to prepare workers who are able to see the 'big picture' and can quickly contribute to the workforce.** To that end:
 - link formal education and training more closely to the acquisition of practical skills, active learning methods and practical training;
 - schools should involve more practitioners as teaching staff;
 - employers should be willing to contribute to the popularisation of their respective sectors, to the development of curricula and to in-service training and retraining of their employees.
- 3. Increasing by 2020, by a factor of 1.5, the number of ICT professionals who are able to create and implement innovative technological solutions.** To that end:
 - at least 70% of all students starting studies in the field of ICT should graduate; instead of increasing the number of students admitted it is necessary to support learners to ensure that they complete their studies;
 - improve the ICT skills of professionals in all walks of life to develop their ability to recognise the possible applications of ICT solutions in their respective fields.
- 4. Abolishing clear distinctions between Bachelors-level study curricula and professional higher education curricula.** To that end:

¹ A system of labour market monitoring and future skills forecasting



- introduce corresponding amendments to the Universities Act, the Institutions of Professional Higher Education Act and the Standard of Higher Education;
- create an opportunity for learners to choose between academic or applied courses in their third year of study at the first stage of tertiary education.

Proposals from the expert panel on forestry and timber industry

Message 1: The need for labour is increasing in the sector as a whole while the supply of training in terms of formal education does not meet the demand; there is a shortage of skilled workers in the sector.

Objective: To provide training in the forestry and timber field for industry in the volume and with the structure matching the needs of the labour market.

Actions required from the Ministry of Education and Research, vocational schools, higher education institutions and providers of in-service training and retraining **regarding the volume and structure of training:**

- due to an increase of prescribed cuts agreed in development documents² it is necessary to gradually increase the number of qualified **harvester and forwarder operators** over the next 10 years to 30 harvester operators and 30 forwarder operators per year;
- it is necessary to gradually **reduce the volume of training for loggers** by half over the next 10 years because loggers using a chainsaw are increasingly replaced by harvesters and loggers are increasingly used to cut scrub;
- in the light of continuing technical progress, automation and enhancement of production, increased focus on the production of products with higher added value and increasing production capacities we need to increase the number of qualified **production managers** who have obtained a degree from a **professional higher educational institution**;
- it is necessary to **adjust** the degree of training for machine operators both in formal education as well as in in-service training and retraining – the degree of training for ordinary timber machinery operators should be reduced and the degree of training for **CNC machine centre operators** should be proportionally increased;
- the Ministry of Education and Research as the planner of resources in collaboration with EMPL³ and RMK⁴ should **restructure** the Luua Forestry School to make it a leading vocational school for forestry professions, offering levels 3 to 5 of formal vocational education in order to ensure high-quality teaching and efficient use of limited resources;
- the Ministry of Education and Research as the planner of resources should select, in collaboration with professional associations (EMPL, EMTL and EPML)⁵, from among the fully-accredited vocational schools supplying timber processing professional education, three or four schools and **restructure** them into leading regional vocational schools (covering Southeast

² The Estonian Forestry Development Plan until 2020 (MAK 2020)
http://www.envir.ee/sites/default/files/elfinder/article_files/mak2020vastuvoetud.pdf

³ the Estonian Forest and Wood Industries Association

⁴ The State Forest Management Centre

⁵ The Estonian Forest and Wood Industries Association, the Estonian Furniture Industry Association, the Estonian Woodhouse Association



Estonia, South Estonia, West Estonia and North Estonia) in order to ensure high-quality teaching and efficient use of limited resources.

Actions required from professional associations (EMPL, EMTL and EPML), the RMK, vocational schools, higher educational institutions, SA Innove and SA Kutsekoda (Estonian Qualifications Authority) **for providing training, developing or amending curricula and professional standards:**

- launching in-service training and retraining (including workplace-based training) for **log truck and woodchipper drivers** because the sector will need an estimated 30 new workers per year due to increasing prescribed cuts, huge replacement needs and the continuing increase in the use of bioenergy;
- Training programmes for new entrants to the labour market in the field of forestry and timber industry should **develop an understanding of the modern forestry and timber industry and their role in the economy as a whole**; to achieve this, the forestry and timber industry curricula at different levels should include the topics of **economics, entrepreneurship and forest management** so as to teach students the skills of generalising and seeing the big picture and to involve more practitioners from companies in the teaching process;
- the **architecture and design curricula should focus more on the design of wooden buildings**; to achieve this, the relevant architecture and engineering curricula should include **more subjects supporting the design of wooden buildings**;
- The EPML and higher education institutions should work together to **introduce to the engineering curriculum an opportunity to specialise in the design of wooden structures**;
- modernising the **content of vocational education in the field of the production of wooden buildings** by consolidating the existing curricula (log house builder, carpenter) into a single curriculum covering wooden buildings (including hand-made log houses) construction and manufacturing and the construction of wooden structures;
- in order to overcome the shortage of workers with the skill of technical drawing (15 persons per year) in the fields of wooden buildings and the furniture industry an in-service training programme should be developed or the relevant specialisation introduced, for example, to the joiner curriculum. Before launching the provision of formal education to technicians/engineering draughtsmen, the differences and overlaps of various core professions (production manager, product developer, furniture technologist and engineering draughtsman) should be analysed; this can be done in the course of mapping professional standards;
- launching in-service and retraining programmes for **manufacturers of particle boards, plywood processing staff and sawn-timber conveyor line operators** (including workplace-based training) because the sector will need an estimated 115 people in a year due to tighter quality requirements for manufacturers of high added-value products and due to new investments.

Actions required for the development or amendment of professional standards:

- develop a professional standard describing the skills and knowledge required from a **forest specialist (level 6)**;
- develop a professional standard describing the skills and knowledge required from a **log truck and woodchipper driver**;
- develop a professional standard describing the skills and knowledge related to modern opportunities in the fields of **timber processing and furniture manufacturing technology as well as technical product development**;
- develop a professional standard for **technician/engineering draughtsman**, describing the skills and knowledge required for preparing simple technical drawings; supplement the existing



related professional standards with the skills and knowledge of technical drawing (e.g. as a specialisation option);

- develop a professional standard describing the skills and knowledge required in the fields of **manufacturing particle boards, plywood processing and production of sawn timber**;
- the existing log house builders' professional standard should be renamed the professional standard for manufacturers of wooden structures with specialisation in wooden structures and hand-made log houses.

Message 2: Professional associations are willing to take the lead in order to popularise the professions of the sector among young people.

Objective: To bring young and motivated workers to the forestry sector by popularising the forestry and timber industry professions, enhancing career counselling at all levels of education and strengthening cooperation between companies and schools.

Actions required:

- an **action plan on the popularisation of forestry and timber industry professions** should be developed under the leadership of professional associations (EMPL, EMTL and EPML), the RMK and the Estonian Forest Society and in cooperation with the providers of career services and general education. Introducing the forward-looking, interesting and useful skills required in the sector already to pupils at the levels of general education (basic school and upper secondary school), taking into account the interests of pupils of different age groups;
- professional associations (EMPL, EMTL and EPML), the RMK and the Estonian Forest Society should inform career counsellors about the opportunities open to businesses in the fields of forestry, timber industry and furniture manufacturing;
- **career studies at all levels of education** during the whole study period should be enhanced under the leadership of professional associations (EMPL, EMTL and EPML) and in cooperation with the providers of career services and general education schools by focusing on the following:
 - developing learning and working habits starting from primary school. Vocational schools should offer more **extra-curricular activities and exciting opportunities to work with wood** to pupils in general education schools;
 - Introducing the local economy, including visits to forestry and timber companies, at the final level of basic education and in upper secondary school as well as in vocational education in order to **stimulate interest in forestry, timber processing, including the manufacturing of wooden houses and furniture**;
 - testing pupils' motivation, the suitability of their personal characteristics and capacity for studying in the forestry and timber industry professions, including finding pupils who like forest management and the timber industry. Encouraging young people to think more about career choices, not just about the choice of school;
 - directing pupils at risk of dropping out to more suitable fields of study or awarding them partial qualifications in order to enable them to enter the labour market in a dignified manner.
- The Ministry of Education and Research should continue increasing the share of post-basic school vocational training⁶. Access to sectoral training for less well-off young people also needs to be analysed and, if necessary, an additional support package should be launched;

⁶ One of the performance indicators of the Lifelong Learning Strategy 2020 is the following: 40% of basic school graduates will continue in vocational education



- professional associations and the Estonian Qualifications Authority should raise the awareness of entrepreneurs about the value of a qualified workforce and stimulate interest in the opportunities offered by vocational education and the qualification system.

Message 3: When recruiting staff, employers value those candidates who have undergone more practical training (including professional higher education) and whose skills are sufficient for starting work immediately. Regarding the forestry and timber industry professions, the share of practical training should also be increased in higher education.

Objective: To create learning opportunities for acquiring more practical skills that match the labour market needs in order to ensure smooth entry into the labour market for graduates and competent workforce with practical skills and analysis capabilities.

Actions required:

- Under the leadership of the Ministry of Education and Research and in cooperation with professional associations (EMPL, EMTL, EPML), to inform entrepreneurs about workplace-based training opportunities, its benefits and the conditions of organising training, including the training of practical-training supervisors, compensation of costs, etc.;
- professional associations (EMPL, EMTL and EPML) should launch, in cooperation with SA Innove and the Ministry of Education and Research, apprenticeship programmes in the sector with the target of approximately 30% of learners using this form of study by 2020;
- under the leadership of professional associations (EMPL, EMTL and EPML) and in cooperation with SA Innove (in vocational education), vocational schools and higher education institutions, should be encouraged to involve more entrepreneurs in schools' working groups on curricula. Professional associations should appoint at least one representative to such working groups on curricula;
- vocational schools, higher education institutions and general education schools should significantly enhance the cross-use of their material technical teaching bases;
- vocational schools and higher education institutions should focus more on active learning methods (e.g. problem-based teaching, team work, project work) and integrate students of different fields of study in teams;
- higher education institutions and vocational schools, in cooperation with businesses and professional associations (EMPL, EMTL and EPML), should do more research into subjects that are relevant to companies as well as real life problems as subject areas of final papers and to encourage companies to propose such subject areas;
- the Ministry of Education and Research and the EMPL should acknowledge the need to continue investments in upgrading harvesters and forwarders and their stimulators. To find ways to involve different partners in investments;
- under the leadership of the Ministry of Education and Research and in cooperation with vocational schools and higher education institutions, to find solutions to offer regular and efficient internship opportunities to vocational teachers. In particular, the staff teaching subjects related to technologies should complete their internship at production companies;
- the Ministry of Education and Research, the Luua Forest School, Pärnumaa Vocational Education Centre, the Estonian University of Life Sciences and the Tallinn University of Technology, in cooperation with the EMPL and employers, should analyse the forestry and timber industry curricula and the need and possibility for developing new curricula or to amend the existing ones;
- The Estonian University of Life Sciences, in collaboration with employers, should consider changing the structure of academic forestry curricula and the scope of specialisation and to



replace them with engineering or integrated engineering curricula without interrupting the period of study.

Message 4: In order to boost development and increase added value, the sector needs to adopt an innovative and creative approach and acquire the capacity to use field-specific opportunities offered by ICT.

Objective: To create learning opportunities that take into account the innovative development needs of the labour market in order to ensure that we have professionals and teaching staff with good knowledge of modern technological solutions.

Actions required:

- higher educational institutions and vocational schools should increase the share of sector-specific ICT training in the forestry and timber industry curricula, including focusing on the development of sectoral technology competencies, and to add an overview of technologies, including ICT development trends and the resulting opportunities in the curricula of the forestry and timber industry.
- under the leadership of higher educational institutions and in collaboration with the EMPL and companies, to integrate bioenergy subjects in the programme of sustainable energy;
- under the leadership of higher educational institutions and in cooperation with the EMPL and companies, to start training wood chemistry professionals in the framework of universities' Chemistry Programmes (including Biochemistry and Chemical Engineering) in order to support the introduction and adoption of biochemistry and chemical engineering by timber industry companies. To start developing joint curricula with Finnish and Swedish universities;
- the Ministry of the Environment, the Ministry of Economic Affairs and Communications and Enterprise Estonia should analyse the need and possibility for establishing in Estonia a Wood Chemistry and Biological Products Technologies Centre of Excellence to enable the industry to cooperate with researchers in developing industrial biotechnologies, and the need for related additional resources, including for bringing foreign teaching staff and researchers to Estonia;
- under the leadership of the EMPL and in cooperation with the EMTL, the EPML, higher educational institutions and companies should bring together in a single web environment information about completed research and research problems concerning manufacturing-sector companies; the information could be used as subject areas for students' final papers.