ARBORTECH

Co-funded by the European Union

Arboriculture as a fundamental technique for managing urban green spaces

PROJECT RESULT 1:

The Slovakia national report

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This document was produced as part of the R1 in the framework of the Erasmus+ project ArborTech, where we will explore educational needs in the field of arboriculture. They will be based on a national analysis of employers' and employees' questionnaires and a review of arboricultural learning outcomes (knowledge, skills and competences), included in formal and non-formal curricula of existing educational programs.

A table of contents:

1. GENERAL INFORMATION 4
2. Requirement for workers from the arboricultural field in the labour market 5
3. Possibilities for education and training in Arboriculture 6
4. Arboricultural knowledge, skills and competences 7
5. SOFT SKILLS 10
6. ADDITIONAL 11

1. GENERAL INFORMATION

We contacted some respondents in the Slovak Republic and received completed questionnaires from 8 employees and 11 employers from the public and private sectors. We researched the horticulturist curriculum and the horticulture field with a focus on binding, arranging and planting.

On the basis of the EQF (European Qualifications Framework), which functions as a translation tool to increase the readability of national qualifications throughout Europe, we classify the scientific field of arboriculture as level 4. From the point of view of the ECTS classification, informal education takes place in Slovakia in the form of three educational modules (Biological properties of trees, Operational safety of trees in residences, Protection of trees during construction activities) for 10 hours, with a total of 30 hours.

2. Requirement for workers from the arboricultural field in the labour market

In Slovakia, we have noticed a higher demand for employees with knowledge in the field of arboriculture. In order to meet this requirement, as partners we are going to develop new curriculum called Urban Arborist (R3), which we will also implement (R4 and R5).
Employers prefer external suppliers (72.7%) of services in the field of arboriculture to employing workers with arboricultural knowledge, skills and competences. Most employers need two or more employees for arboricultural work (90.9%)
Only 45.5% of employers are looking for workers with a lot of experience and international certificates and they are willing to offer them a higher salary. 54.5% of employers prefer employees with full secondary education.
18.2% of employers do not invest in the professional development of employees. Other employers (63.6%) are willing to pay for the education of their own employees for courses in the company (18.2%) and in training centres. (45.5%). They are willing to pay €100-€500 per person for one course.
Employers use a wide spectrum of knowledge and skills of employees. In addition to tree work (36.4%), workers are also required to do additional gardening work (36.4%). Only 9.1% of workers are used for work at heights or for other similar activity (18.2%).
The lack of experts causes that 63.6% of employers consider hiring interns. They can further expand their knowledge and skills under the guidance of experienced workers and also through courses and training.
The work of an arborist requires a certain physical fitness of the worker. Due to the physical demands of the work most employers (54.5%) do not consider employing a worker with a physical, visual or hearing disability. 27.3% of employers are willing to hire such workers and adapt their work to their disability. By developing the Directive for employers, we would like to make easy this process.

It emerged from the interviews that employers would only hire people with disabilities for certain job positions: they would hire a person with a mild physical disability as an arborist advisor, who would coordinate the arborist's practical work in the field, at heights, with his professional knowledge.

3. Possibilities for education and training in Arboriculture

The following titles in the field of arboriculture are well-known in Slovakia:
ISA Certified Arborist (CA) - 81.8%
International Society of Arboriculture (ISA) Tree Worker Climber Specialist (TW CS) - 72.7%
European Arboricultural Council (EAC) European Tree Worker (ETW) - 72.7%
Less well known are the titles EAC European Tree Technician (ETT) (54.5%) and Certified Tree Inspector FLL Zertifizierter Baumkontrolleur (45.5%).

In Slovakia several options are known in the field of arboriculture education. Employers and employees are especially familiar with arboricultural society lectures (84.2%), certification courses (84.2%) and tree care courses (84.2%). The options offered by the Internet are used a bit less (more than 62%), including various webinars and YouTube videos.
Independent education is preferred by 9.1% of respondents. Social media platforms (27.3%), fairs and conferences with an arboricultural theme (63.7%). All 11 respondents identified the combined form of education as advantageous.

4. Arboricultural knowledge, skills and competences

a. Tree biology: 54.5% use knowledge and skills at work and 9.1% lack knowledge in the area of tree biology

b. Identification and selection of trees: common types of trees in the urban environment are known by all respondents - 100%.
In an urban environment 100% of respondents can identify trees.
All 8 respondents are able to identify the following species:
75% answered that they can recognize 30 or more types of trees. 25% know trees in the range of 15 to 30 trees. When identifying trees, 81.8% of arborist knowledge and skills are used at work. 9.1% of them miss arborist skills in the field of tree identification.

Acer platanoides, pseudoplatanus, campestr Pinus Nitra, silvestrovský,mugo Carpinus betulus, platan, Ailantus altisima, fraxinus exelcior, aesculus hipogastanum Abies alba, Picea alba, Pinus silvestris, Pinus nigra, Acer campestre, Acer platanoides, Acer pseudoplatanus, Quercus robur, Populus nigra, Populus alba, Tilia cordata, Tilia platyphyllos, Picea abies, Pinus nigra, Pinus silvestris, Betula pendula, Acer, platanoides, Acer negundo, Acer campestreae, Acer psudoplatanus, Prunus padus, Prunus spinoza, Prunus sufrucitcosa.

Next 200+ species:

Tilia cordata,Quercus robur Petrea rubra cerris, Acer platanoides pseudoplataus campeste, Betula pendula,Pinus nigra silvestris mugo, Abies alba, Cedrus, Castanea sativa,Fagus silvatica,Fraxinus excelsior ornus, Salix alba, populus nigra alba , Ulmus, Alnus, Corilus, Taxus bacata Tilia cordata., Quercus robur, Pinus silvestris, Piecea abies., Sorbus torminalis., Malus pumila, Pyrus communis. Prunus domestica., Morus alba., Fagus sylvatica, Fraxinus excelsior, Acer pseudoplatanus, Aesculus hippocastanum.

In recognition between original, invasive and protected species there is 60% success rate among the interviewees. In the area of regionalization of trees there were positive responses to 25%.
Employers (81.8%) consider this knowledge to be important in the daily work of employees. Workers are able to routinely identify more than 30 types of trees in an urban environment at 75%. They know the nomenclature in Slovak and Latin languages. Employees are evaluated as proficient in this area by self-assessment to level 4 in the subject of tree biology, in the field of identification they are classified as level 3, in pedology as competent, in water management as competent (2), in tree fertilization nutrition as competent, in selection trees (4), in biodiversity protection to level 4, in professional communication to level 3.

The construction of an arboricultural laboratory by the Arbortech project will allow students to support multi-sensory education and improve their knowledge, skills and competences in this and other areas and context of tree identification and selection.

c. Soil science: 27.3% of employees use knowledge of pedology and soil analysis at work. Also 27.3% of employees miss arborist knowledge and skills.

d. Water management: 27.3% of respondents use knowledge from water management at work, and nobody misses knowledge from the mentioned area in arboricultural work

e. Nutrition and fertilizing of trees: 27.3% of the interviewed group uses knowledge of nutrition and fertilizing of trees at work, and on the contrary 9.1% described this category of knowledge as insufficient.

f. Planting and establishing trees: 63.6% of respondents indicated the activity of planting and establishing a tree that they use this knowledge to a sufficient extent and none of the respondents lacks knowledge and skills in this area.

g. Pruning and the subsequent physiological reaction: none of the interviewees lacks knowledge and skills in this area, on the contrary, up to 72.7% use this knowledge in arboricultural work.

h. System, cabling, reinforcement, support, anchoring: 72.7% of the group use the knowledge in the mentioned area at work, and 9.1% of the interviewed group miss the mentioned knowledge.

i. Diagnostics and plant disorders: 54.3% use this knowledge at work, and on the contrary, 27.3% of respondents lack knowledge about diagnostics and plant disorders and they would welcome their education.

j. Plant health care: arborist knowledge and skills are used in this area by 45.5% and 18.2% lack the mentioned knowledge at work.

k. Biodiversity protection: 45.5% have knowledge about biodiversity protection and use it at work. 36.4% lack this knowledge to be able to use it at work.

l. Tree assessment and risk management: in the mentioned area 81.8% of respondents use knowledge and skills in arboricultural activities, while on the other hand 9.1% of respondents miss this knowledge and stagnates to a considerable extent.

m. trees and their construction: 63.6% of employees use this knowledge in arboricultural work. Group of 27.3% of people lack this knowledge and skills.

n. Safe working procedures: 72.7% have enough knowledge in this area. 9.1% of the respondents lacks this knowledge.

o. Climbing trees, air rescue: 81.8% use the mentioned work procedures in arboricultural activities, 9.1% of respondents lack this knowledge and skills

p. Use of mobile lifting work platforms: Group of 47.5% of respondents lacks this device at work, 15.8% use these devices at work

q. Roping and dismantling, use of tools on the tree: in the field of tree maintenance up to 90.9% of respondents use this activity, while 18.8% of respondents lack these practical skills.

r. Planning and organization of work: 63.6% of knowledge and skills use planning and organization of work in tree maintenance. 18.2% of people lack systematic planning and organization of work in arboricultural activities.

5. SOFT SKILLS

Professional communication skills are also an important skill of professionals. Less than half of employers (45.5%) are not satisfied with this ability of their employees. We will also focus on this area in the Urban Arborist curriculum. Other important areas where employees have lack of knowledge are: biodiversity protection, urban forestry, pedology, regulations and legal issues. Nevertheless, the majority of employees rate their level of knowledge and skills as competent.
63.6% use professional communication during maintenance, and 45.5% of the respondents lack this form of communication.

Teamwork is important when working on trees. Employees mostly work in groups of two, three, and four, and if necessary, employees combine these groups (up to 36.4%)

6. ADDITIONAL

During communication with respondents we found out that workers in this field have a strong relationship with nature, and many of them would welcome the improvement of the curriculum for arborists.

They recommend starting to encourage interest in bushes and trees at young age. It is necessary to motivate those interested in the job of an arborist to work in the form of benefits, work advantages. Acquisition of new insights and knowledge by participating in courses, seminars and webinars with reimbursement of education costs. For interns, e.g. to reimburse housing costs, to introduce an innovation day for arborists and arborist experts, to establish counseling centers where the wider public of various age categories would also find answers to their curious questions.