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TOWARDS AN EUROPEAN STANDARD FORESTRY CURRICULA REPORT

FOREST

FORESTRY OPERATORS REFLECTING ON EQUALISING SKILLS AND TRAINING

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1. EXECUTIVE SUMMARY

This document aims to provide a summary of the information and comparative analyses carried out within the FOREST project, as well as to suggest some specific reflections on the importance of moving towards a harmonisation of forestry education.

Finally, an overview of the best practices that emerged in the project is provided.

The document is intended for institutions, education and vocational training professionals as well as forestry workers.



2. INTRODUCTION

2.1 The FOREST project

The **FOREST** project, which started in November 2019 with a duration of **31 months** and was co-financed by the **European Union's Erasmus+ programme**, promotes the **exchange of good practices** between forestry organisations from **5 European countries (Italy, Austria, Slovenia, Croatia and Romania)** around the discussion of a **standardisation strategy for the training and qualification of forestry workers**.

As a consequence of ongoing climate change, we have witnessed several environmental crises and natural disasters in recent years.

These events cause a massive mobilisation of forestry workers and volunteers from different regions and countries. In response to this growing mobilisation, a **common competence recognition system** is more than necessary, especially in terms of occupational safety and proper coordination between countries in the case of cross-border interventions.

Collaboration between transnational partners is essential for a **Europe-wide comparison of training systems to identify strengths and weaknesses** between vocational education and training in different countries and to **increase student mobility** and facilitate the comparison and alignment of competences.

Timespan: November 2019 - June 2022

Funding: Erasmus + (KA2)

Project coordinator:

Agenzia Veneta per l'Innovazione nel Settore Primario - Veneto Agricoltura

Partners:

- ◆ Croatia Wood Cluster - Croatia
- ◆ Grm Novo Mesto - Biotechnological Centre A Turizma - Slovenia
- ◆ National Chamber of Agriculture and Forest in Stiria and Forest Training Centre Pilch - Austria
- ◆ Asociatia Nationala A Femeilor Din Mediul Rural - Romania
- ◆ ALDA - Association Des Agences De La Démocratie Locale - France



To date, **a common training pathway and a standard recognition system for the competences and skills** required for the qualification of 'forestry worker' have not been identified at European level. As a result, there is a **fragmentation of competences** in forest management at national and international level.

In this context, the FOREST project responded to this fragmentation by initiating a **European debate on the possibility of creating a standard level of competences and skills** for forestry workers. The international debate was structured on **three levels**:

- ◆ A **technical** level, concerning the content of training programmes and the skills required of forestry workers;
- ◆ A **legislative** level, to harmonise authorisation of diplomas and certificates;
- ◆ A **sustainability** level, to promote innovative and inclusive approaches in the forestry sector.

The objectives of FOREST

- **Map, discuss and exchange know-how on forest management, vocational training and safety standards**
- **Promote the exchange of good practices and techniques with other European countries**
- **To improve the level of professionalism and competitiveness of forestry workers across borders**
- **Increase the knowledge and safety standards of workers and the quality of their work**
- **Discuss the creation of a standard level of competencies and skills for forestry workers, valid across national borders**

In order to achieve these objectives, FOREST provided for the organisation of **six international exchanges in the five European partner countries** (Italy, Austria, Slovenia, Croatia, Romania), to define a **common strategy for the harmonisation of training systems and for the mutual recognition of skills**, as well as to **foster innovation and the introduction of sustainable tools**. In particular, these meetings were outlined in **4 thematic focuses** considered as priorities within the debate on the standardisation of forestry training.

In chapter five, the good practices and the main outcomes that emerged from the European exchanges are collected and articulated in the four aforementioned focuses.

The 4 thematic focuses

- **Safety at work at European level**
- **Regulatory framework: certification and qualifications in the forestry sector**
- **Sustainability and innovation**
- **Inclusion of women in the forestry sector**



The results achieved

Short-term

- ◆ **Better opportunities** for forestry workers to learn across national borders and work together on joint projects to promote innovation, professionalism and mobility in the forestry sector
- ◆ **Exchange of best practices and knowledge** on technological tools and innovative practices to be adopted in the forestry sector
- ◆ **Improve public information** on forestry and its importance in mitigating climate change

Long-term

- ◆ **Facilitation** of knowledge transfer and (cross-sectoral) and (trans)national collaboration
- ◆ **Increased capacity** of the forestry sector to respond to developments and innovations in various policy areas
- ◆ **Production and publication of a report** containing recommendations, new methods and approaches that have emerged regarding the harmonisation of forestry training programmes at technical, legislative and sustainable levels

3. COMPARATIVE ANALYSIS

3.1 State of the art of forestry training in Italy, Slovenia, Austria, Croatia and Romania

Slovenia

Slovenia is a country with many forests, and 9 out of 10 farms own forests. For safety reasons, national regulations require every forestry worker to take a course in the safe use of chainsaws. The Forestry Institute offers short courses for working safely in the forest, as do some agricultural schools in Slovenia.

Forestry training is offered in five different school programmes in Slovenia, but many other schools offer forestry training modules. Forestry training is also offered as a national vocational qualification.

There are two main educational levels:

Secondary school:

- ◆ three years of vocational training
- ◆ four years of vocational training

University

- ◆ Three years of education
- ◆ Additional training (Msc and PhD)

Italy

Prior to 2018, the year in which the "**Testo unico in materia di foreste e filiere forestali**" (**TUFF**) was published - (Legislative Decree No. 34 of 3 April 2018), in Italy there were no guidelines on how to delineate the professional boundaries of the forestry operator despite its **fundamental importance in concretising the scientific, planning and management** choices of forest management and the need for greater safety in forest work.

Vocational training in forestry has a **strong national gap** due to different situations in each of the 21 Italian regions; some local contexts have planned and regulated forestry work activities without any coordination and sharing at national and European level.

Thanks to the TUFF, the figure of forestry operators and companies has only been recognised in recent years, in order to **promote a standardisation of training, refresher courses and certifications between the State, the Regions and other bodies** for the protection, management and active valorisation of the forest heritage.

The operational actions envisaged by the **Italian National Forestry Strategy** include: the qualification of forestry operators and economic actors in forestry supply chains and the cooperation of forestry enterprises.

The line of action for the implementation of the aforementioned actions implies the **creation of national standards** for the qualification of both individual operators and enterprises operating in the sector. At the same time, the implementation of these courses must **guarantee the recognition of the competence and professionalism** of the trained and recognised operators and enterprises throughout the country.



Austria

Apprenticeship training for forestry workers

After compulsory schooling, the forestry apprentice begins his training in a forestry company as an employee. He attends a vocational school for two months during the three years of apprenticeship, which he concludes with a qualification examination as a skilled worker.

Apprenticeship training for forestry technicians

This type of training is aimed at forestry entrepreneurs who are not represented by the Chamber of Agriculture but by the Chamber of Commerce. The entry requirements and duration of training are the same as for apprenticeship training to become a qualified forestry worker.

Forestry worker training in the second route

At the age of 20, a person working in a forestry company, either as a forest owner or as an employee, can obtain the forestry worker qualification through a 5-6 week course with a final examination. The prerequisite is three years' practical experience in one's own forest or as an unqualified worker in a forestry company.

In exceptional cases, graduates of an agricultural technical institute may be younger than 20 years of age. This exemption currently only applies in Styria, as the training to become a specialised forestry worker or master craftsman is the responsibility of the state and is based on the Agricultural and Forestry Vocational Training Act.



Austria

Training to become a master forester

Starting with the specialised forestry worker, training as a master forester in forestry can be started after a further three years of relevant forestry practice. The training in Styria is approximately 400 hours, divided into theory and practice, as well as accounting tasks and the creation of a forest management plan.

Forest ranger training

Federal training takes place in a two-year course at the forestry competence centre in Traunkirchen, Upper Austria. The qualification of forest ranger corresponds to the majority of forestry activities. The forest ranger training also opens up the possibility of training as a professional hunter (2-year practical training). The forester for forestry does not have this possibility at the moment, but a change in the law is being worked on. The forest forester is accredited after completing training as a specialised forester, but not as a master forester! The legal basis is laid down in the Austrian Forestry Act.



Croatia

In Croatia there is a dual training system (e.g. a sawyer must be trained to work safely and to work with a working tool such as a chainsaw).

Training to work safely can be carried out by companies authorised by the Ministry of Labour and the Pension System, while vocational training with a chainsaw can only be carried out by high schools authorised by the Ministry of Science.

After finishing high school in forestry, it is not possible to work with a chainsaw unless the school has been accredited to provide this type of training by the ministries and agencies mentioned above.

However, these certificates are not validated by any international accreditation body. There are more than 40 different entities, mostly private companies, that can provide training to work safely, and there are 20 entities that can provide training to work with chainsaws.

In all organisations, training is provided in two stages, theory and practice, but not all subjects provide the same number of hours dedicated to theory and practice (ranging from 20 to theory and 100 to practice). The price of the course is approximately 800 euros. The European Chainsaw Certificate is not mandatory to work as a forestry operator.

Romania

In 2019, forestry education/training was organised in 43 schools across the country, with 168 classes/trainees and 4718 students.

Short-term (6 months) training for foresters or forest technicians is not included (source NIS).

Each qualification is based on training standards and has a code, according to the Ministry of Education and the Ministry of Labour.

All regulations are mandatory at national level. It is a uniform system applied to both legal and natural persons operating in the forestry sector, regardless of the type of ownership or organisation.

The levels of forestry training currently recognised in Romania are summarised below:

- ◆ **Age 15-18 years: upper secondary level**

- EFQ3: vocational education and training programmes based on WBL50%, 3 years, ISCED352; provided by vocational schools and employers; in-company training combined with WBL in school workshops/workshops (DUAL VET). Professional qualification: skilled worker at EQF level 3: chainsaw operator; tractor driver.
- EQF 3, short vocational training programme, WBL 100%, 720 hours, ISCED 357
- EQF4: technological programme, WBL 25%,4 years,ISCED354

Romania

- ◆ Short VET programmes (ISCED-P 352): students in grade 10; 720 WBL hours; EQF vocational qualification level 3 - forestry; coordinated by VET schools and provided mainly by employers
- ◆ Post-secondary vocational training programmes (ISCED 453) Higher vocational training programmes of 1-3 years;
 - EQF vocational qualification level 5: well-trained forester
- ◆ On-the-job apprenticeship: adults (age 16+) WBL: 70%. Training: 6 months (EQL1); 1 YEAR (EQL2); 2 years (EQT3); 3 years (EQT4) - vocational programme EQF 4, WBL 15%, ISCED 345
- ◆ EFQF6 degree programme :age 18+;3 years (ISCED 645)/4 years (ISCED 655)
- ◆ EQF7:Master's programme;1-3 years(ISCED 747; 757)
- ◆ EQF 8: PhD and post-doctoral programme; 3/4 years; ISCED 844/854.



3.2 METHODOLOGY

The main objective of the survey was to **assess forest owners' perceptions of the legislative framework for forestry operations.**

The survey was conducted in January 2022 in the project partner countries Italy, Austria, Slovenia, Croatia and Romania.

Fifty forest owners were involved, **60% of whom own or manage a forest area** of up to 10 hectares and over **90% are men.**

The survey results provide answers on the following areas

- ◆ Degree of satisfaction with the legislative framework on safety in forestry
- ◆ Degree of satisfaction with the education/training system related to forestry operations
- ◆ Support for the introduction of the European Chainsaw Certificate as a mandatory certificate
- ◆ Importance of holding a European chainsaw certificate as an employee.

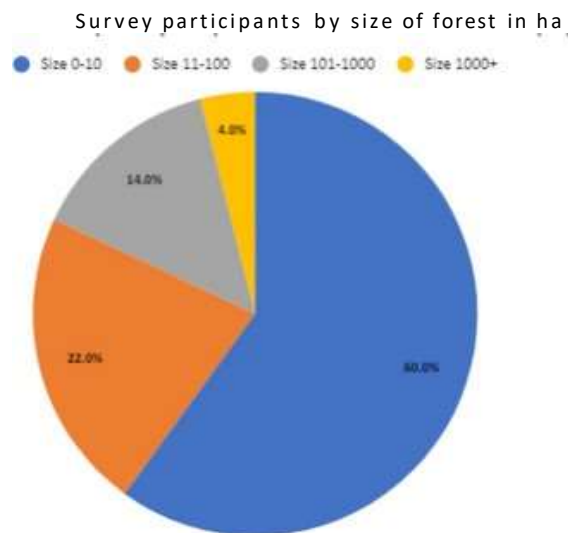
3.3 MAIN RESULTS OF THE SURVEY

The results of the survey depend on the country and the state of forestry and its legislative framework.

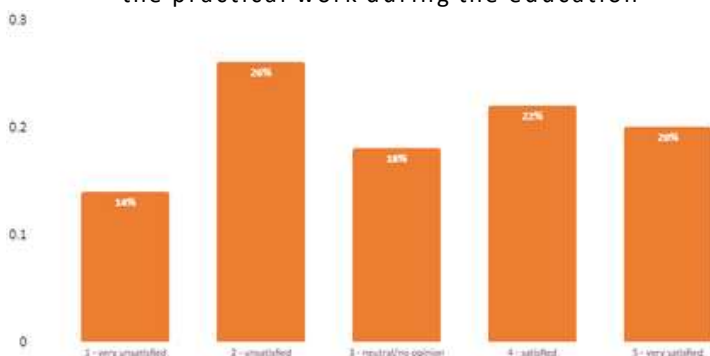
The graph on the right shows the distribution of respondents according to forest area size expressed in hectares.

Although the education and training systems are different in each country, the results show that half of the respondents (46%), are not satisfied

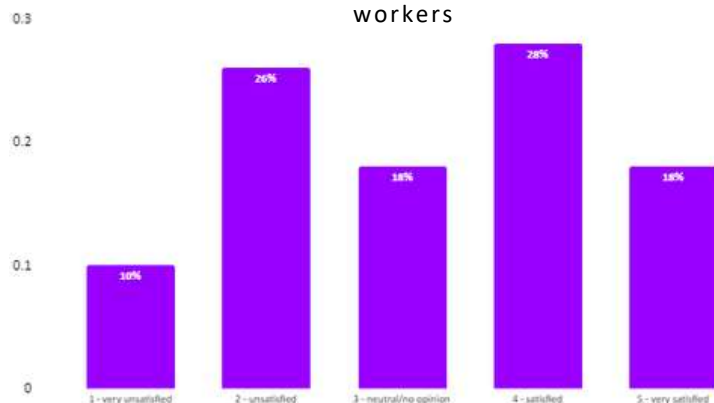
with the organisation of the education system, in particular with the number of hours devoted to practical work during the training period (40%).



Satisfaction with number of hours dedicated to the practical work during the education

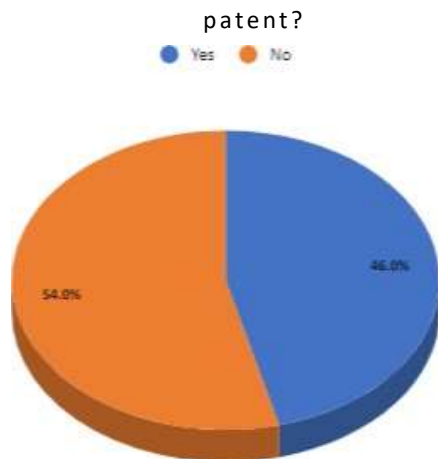


Satisfaction about the education system for forestry workers

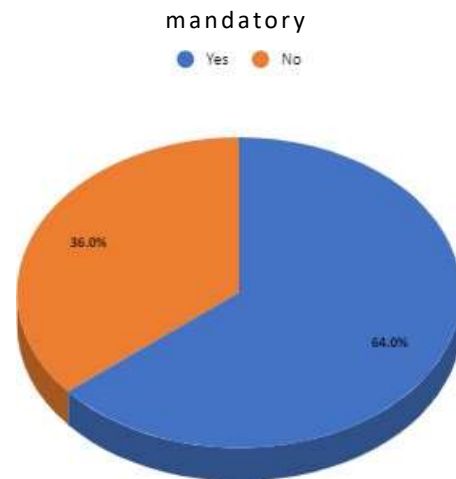


Almost half of the respondents (54%) confirmed that they were **not familiar with the European Chainsaw Patent**, but at the same time a majority (64%) supported the idea of **introducing the European Chainsaw Patent** as a mandatory requirement in the recruitment process.

Do you know the European Chainsaw patent?

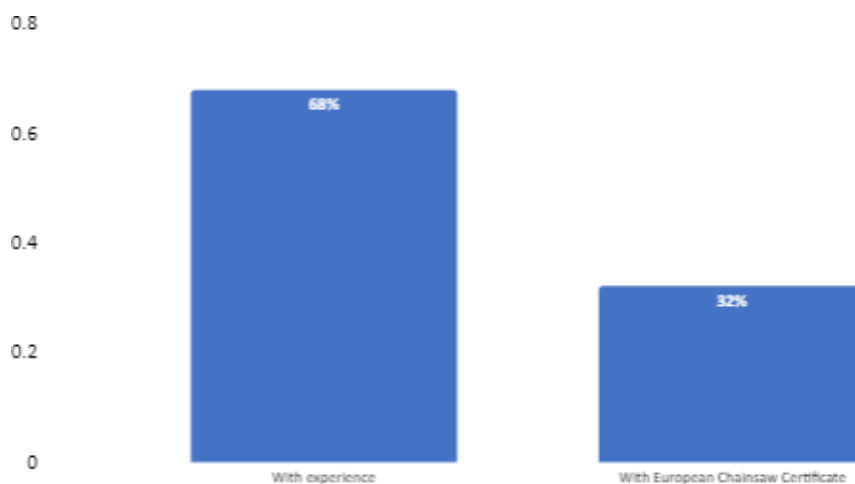


European chainsaw certificate should be mandatory



However, almost two-thirds of the respondents (68%) **favour experienced workers** over holders of the European Chainsaw License when hiring.

When hiring new workers, I give advantage to the applicants...



3.4 DISCUSSION OF THE RESULTS

The legislative framework on safe forestry work needs to be further improved. Laws or regulations should establish the levels of competence required for the safe performance of forestry work for the various categories of workers and specify the procedure that verifies these competences and certifies their adequacy.

The training system for forestry workers is quite satisfactory, but there is still room for improvement. The competent authorities should support the establishment and operation of a training system adapted to the needs of the forestry sector. Particular attention should be paid to access to training for self-employed workers, contractors, forest farmers and forest owners working in forests.

The number of hours dedicated to practical work in forests during education should be increased. Currently there is no standard number of hours or education and training programmes for working in forests, which makes it difficult for forestry workers to find work outside their own countries.

The introduction of the European chainsaw certificate as a mandatory certificate for obtaining employment is desirable. By guaranteeing a minimum standard in forestry work, the European Chainsaw Certificate also contributes to the improvement of health and safety, as well as to mobility through the ability to exchange certificates.



4. BEST PRACTICES IN ITALY, CROATIA, SLOVENIA, ROMANIA AND AUSTRIA

4.1 An example of best practice in standardisation: the case of the project "For.Italy - Forestry Training for Italy"

Within the framework of the TUFF, in order to facilitate the path towards national standardisation and to reduce the existing gap at national level, the Ministry of Agriculture, Food and Forestry (Mipaaf) has financed a project called 'For.Italy - Forest Training for Italy'.

(https://www.reterurale.it/FOR_ITALY)

The aim is to respond to the training needs of forestry operators and trainers in every Italian region and to standardise the qualification of workers involved in forest management.

Through a participatory approach, For.Italy has been shared by all Italian regions as the first and important result of an inter-institutional cooperation activated thanks to the "TUFF", with the aim of enhancing the skills of operators and promoting the development of the whole forestry entrepreneurial sector.





The project, developed by the Piedmont Region and the Institute for Wood Plants and the Environment SpA (IPLA), with the recommendation of Mipaaf and the National Council for Agricultural Research and Analysis of Agricultural Economics (CREA), included specific demonstration training and information events, such as:

- ◆ Forest felling demonstration sites, to show standard lessons, equipment, skills, techniques and procedures related to various forestry operations;
- ◆ Implementation of demonstration training courses with the expected standards, carried out by certified forestry trainers.
- ◆ Development of brochures and information and teaching tools for training and safety at forest felling sites;
- ◆ Organising information and networking events for mutual knowledge sharing;
- ◆ Creating an extensive mailing list to involve companies and operators in future events, training courses and workshops to disseminate technical innovations.
- ◆ Understanding the specific needs of companies and workers, conveying forest policy issues and defining a direct communication channel between public administrations and operators, with particular attention to the issues of safety and sustainable forest management.

The 'For-Italy standard' was approved in the Permanent Conference for relations between the State, the Regions and the Autonomous Provinces on 6 August 2020 (repertory 138), and the standard itself conforms to the possibility of obtaining EFESC Certification through dedicated examination sessions.

Focus 1: Safety at work: the case of Austria

Title	Training as unskilled worker for forest maintenance work
General topic	In Styria there is a lot of forest maintenance left over. There are fewer and fewer domestic and foreign workers. Climate change increases maintenance residues and thus the development of unstable forests. This gave rise to the idea of getting job seekers interested in forest maintenance. An eight-week training course was developed with the Institute of Rural Forestry Education and the Labour Market Service.
Description	The participants received 4 weeks of technical training, mainly for practical forest work, and for 4 weeks the course participants received inputs in personal development and company formation. In addition, during 4 weeks the course participants were able to gain practical experience in on-site operations and with large forest owners. The pilot project started with 12 people, 9 have successfully completed the course. After three years of forestry practice, the participants can complete a further two-week training with the specialised forestry operator examination. In addition, they receive plant protection skills.
Aims	discounting care residues in the forest creation of a climate-friendly forest well-trained staff
Focus	Education and awareness-raising of forest owners on the possibility of using trained persons for forest maintenance. annual Implementation of training Best practice for other federal states and beyond
It is recommended to use in	where there is a high need for care in the forest intended for people who enjoy working outdoors with a high level of knowledge and initiative
Remark/recommendation	Best feedback from all participating organisations, training participants are highly motivated.

Focus 1: Safety at work: the case of Austria

Title	Forest-Monday
General topic	Information for forest owners on various forest-related topics, online, one hour of information followed by a discussion, every Monday from 6.30 p.m. to 7.30 p.m.
Description	Online information via zoom, a current, interesting topic is presented by experts and questions are then answered via chat. 12 Forest Mondays with more than 3,700 participants
Aims	Information to Austrian forest owners about controversial forestry issues. Advertising for the organising institutions: Forest Association Styria and Forestry Training Centre Pichl Possibility of knowledge transfer in lock-down times
It is recommended to use in	Travel times are eliminated, resources are conserved and the environment is protected by eliminating travel routes

Focus 2: Sustainability and innovation in the forestry sector: the case of Croatia

Title	Protecting interests of forestry
General topic	Croatian Chamber of Forestry and Wood Technology Engineers
Description	<p>The Croatian Chamber of Forestry and Wood Technology Engineers was established by a special law in 2006. The members of the Chamber are forestry and wood technology engineers who carry out professional work in the field of forestry, hunting and the wood processing industry. The Chamber is an independent professional organisation that exercises the public authority entrusted to it, preserves the reputation, honour and rights of its members, ensures that certified engineers perform their duties conscientiously and in accordance with the law, and promotes, represents and harmonises their interests in the country and abroad. The public authorities entrusted to the Chamber are:</p> <p>(1) the register of forestry and wood technology engineers, (2) the licensing of contractors in the field of forestry, hunting and wood technology - fulfilling the requirements of professional and technical competence, (3) the care of professional examinations - three years of experience in the profession.</p> <p>The Chamber also carries out the following activities: organisation of professional training for members - lifelong learning, participation in the preparation of regulations in the field of forestry, hunting and wood technology, representation of the interests of its members, co-financing and donations for the publication of professional books and manuals, co-financing and organisation of symposia, conferences, meetings, contract of liability insurance for registered engineers.</p>
Targeted audience	Forestry and wood technology
Focus	engineers Regulation of the profession
It is recommended to use in	Forestry and wood working industry

Focus 3: Woman inclusion in the forestry sector: the case of Romania

Title	SUMAL System Romania
General topic	SUMAL 2 is a timber tracking system based on digital training of both forestry men and women workers.
Description	A new easy-to-manage platform for men/women involved in the process of cutting, transporting and selling timber in Romania.
Aims	An innovative approach leading to a better working environment for male/female forestry workers; an example on how to include women in different levels of forestry.
Targeted audience	Men and women working in forestry; forest owners; rural stakeholders.
Focus	Non-formal education and training (including in forestry and ICT)
It is recommended to use in	Capacity building: increasing the skills of men and women in forestry activities.
Remark/recommendation	Access to the same knowledge means opportunities for men and women to work together in forestry activities. The inclusion of women could lead to their forest certification.

Focus 4: Legislative framework: certifications and qualifications: the case of Slovenia

Title	National vocational qualifications
General topic	Certification
Description	Slovenia has established a certification of national vocational qualifications in cooperation with the Ministry of Labour, Family, Social Affairs and Equal Opportunities. The certification is based on the recognition of informal education skills and knowledge acquired throughout life. The certificate is also valid at EQF level in other EU countries.
Aims	Certification of non-formal education
Targeted audience	Municipalities, government
Focus	Non-formal education, recognition
It is recommended to use in	National education

5. CONCLUSIONS

The Erasmus FOREST project is to be considered a **first step** in a **possible network for the exchange of good practices** towards shared standards in the training and qualification of forestry workers. It also represents a non-exhaustive picture of the state of the art of forestry training in some EU countries.

The picture that emerges is very complex, with some cases of absolute reference also at the European level and a good average attention to the issues of forest safety and operator training.

On the other hand, there is **a high diversification of training courses** even within the same country and the need for alignment on shared standards is not always felt.

The EFESC experience, with the ECC certificate, is a universally recognised attempt to unify courses under a progressive and shared curriculum of study and practice, but its voluntary nature makes it a reference course that is not valued in the same way, at least in the project partner countries.

The project also focused on certain aspects of absolute importance in the context of forestry training.

In particular, the **gender gap** that still exists in many countries in the forestry sector was highlighted. The problem is known in all countries, however, there are some interesting cases of the involvement of women in the traditionally male world of forestry work, as described in the previous chapter (see section 4, Focus 4.3). In general, the importance of focusing on the following specific aspects emerged:

- ◆ **Analysing the weaknesses** of each institution in terms of gender bias, low budget for gender aspects;
- ◆ **Implementing actions to encourage gender equality**, such as the involvement of women in the implementation of a gender-responsive forestry policy;
- ◆ **Promote stakeholder** consultation to support forestry institutions with a gender-balanced policy.



In addition, the legislative framework on forest work safety **must be improved** to allow for intra-governmental recognition of training courses. Laws or regulations should establish a common scheme of competence levels required for the safe performance of forestry work. Finally, all partners and stakeholders emphasised the need for more practical activities in training courses and recognised the value of professional experience.

At a general level, the **need emerges for a methodology** that is as shared as possible **for a comprehensive collection of statistical data** that provides an up-to-date picture of the state of training and standardisation of study and vocational curricula in different countries.

The challenge of environmental sustainability in the training of forestry workers passes through the **new perspective of a more comprehensive training**, not only focusing on safety and the use of forestry equipment, but also **including basic knowledge of silviculture, ecology and forest economics**.

From the point of view of training programmes, a gradual alignment of content and duration is desirable, addressing the problem of different starting skills and the recognition of previous professional experience.

It seems more realistic, at least at this stage, **to achieve a common baseline** and focus on it throughout Europe, with easier and more achievable objectives and with a context of official recognition by the European institution.

The training of trainers appears to be a central issue in all possible paths of training improvement. From this point of view, at least on a national scale, the example of the For-Italy project seems to be a useful best practice to be replicated in other countries.

In any case, it is necessary to exploit the great training tradition of some countries, without creating new competing standards, but seeking a common denominator on those already codified, such as the ECC or other locally admitted schemes.





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