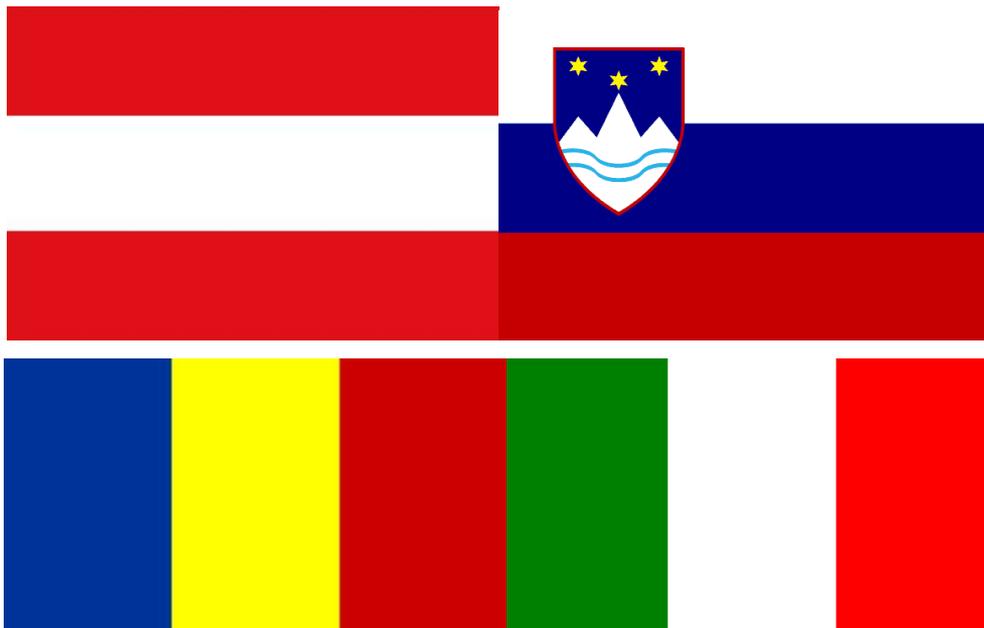




Green Paper



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1 Austria

1.1 Training in Austria

The professional training in the forestry field in Austria begins with completing the forestry training program and becoming qualified logger.

Generally, in order to carry out the logging as well as the commercial activity as contractor in the field of forest exploitation, no training is needed in Austria.

1.1.1 Training for qualified loggers

The forestry training is governed by the Education Law in the agricultural and forestry field (LFBAG 1990). Moreover, besides this basic law, there are nine training-related regulations of the present federal states. The agricultural and forestry schools and colleges for qualified workers and apprentices have the competence to train loggers. These schools and colleges are managed by the Chambers of Agriculture.

Nowadays, the training can only be done in a practice unit, by a professionally qualified instructor. So, according to the laws in force, contractors are excluded from the vocational training of qualified loggers.

Any additional training and any harvester and farm tractor driving courses as well as the cable logging crane operation courses are voluntary and provided, in the first place, by the schools designed to train qualified loggers according to the Austrian training syllabus, but they are not stated by the law.

In order to reorganise the logger training programme, the University of Agricultural Studies and the Institute of Forest Technique carried out in 2011 a study upon the request of the federal agricultural and forestry school for qualified loggers and apprentices (LFA) (NEW qualified logger, the University of Agricultural Sciences).

The following comparison between several countries in connection with logger training programmes is taken from the Rottensteiner and Stamper study, a study carried out as part of the University of Agricultural Science in Wien.

1.2 Comparison of the training programmes

Both in Austria and in Germany and Switzerland, a period of apprenticeship of three years is needed in order to become a qualified logger. Besides the training within a forest division, it is necessary to attend the courses at a vocational school. These courses may take place every week or in the form of modules. The exceptions in Austria (the practice which completes the studies “The exam for professional reorientation to become a qualified worker”) are not mandatory in Germany or Switzerland.

At the end of the apprenticeship period, as in Austria, a graduation exam must be passed. However, Germany adopts a special position because here, besides the final examination, an intermediary exam must be passed after the second year of apprenticeship (Figure 2).

Specialisations for certain forest machines such as the harvester and the forwarder, as often intended in Austria, Germany and Switzerland, are meant to be taken only after the practice period and are not included in the subject matter.

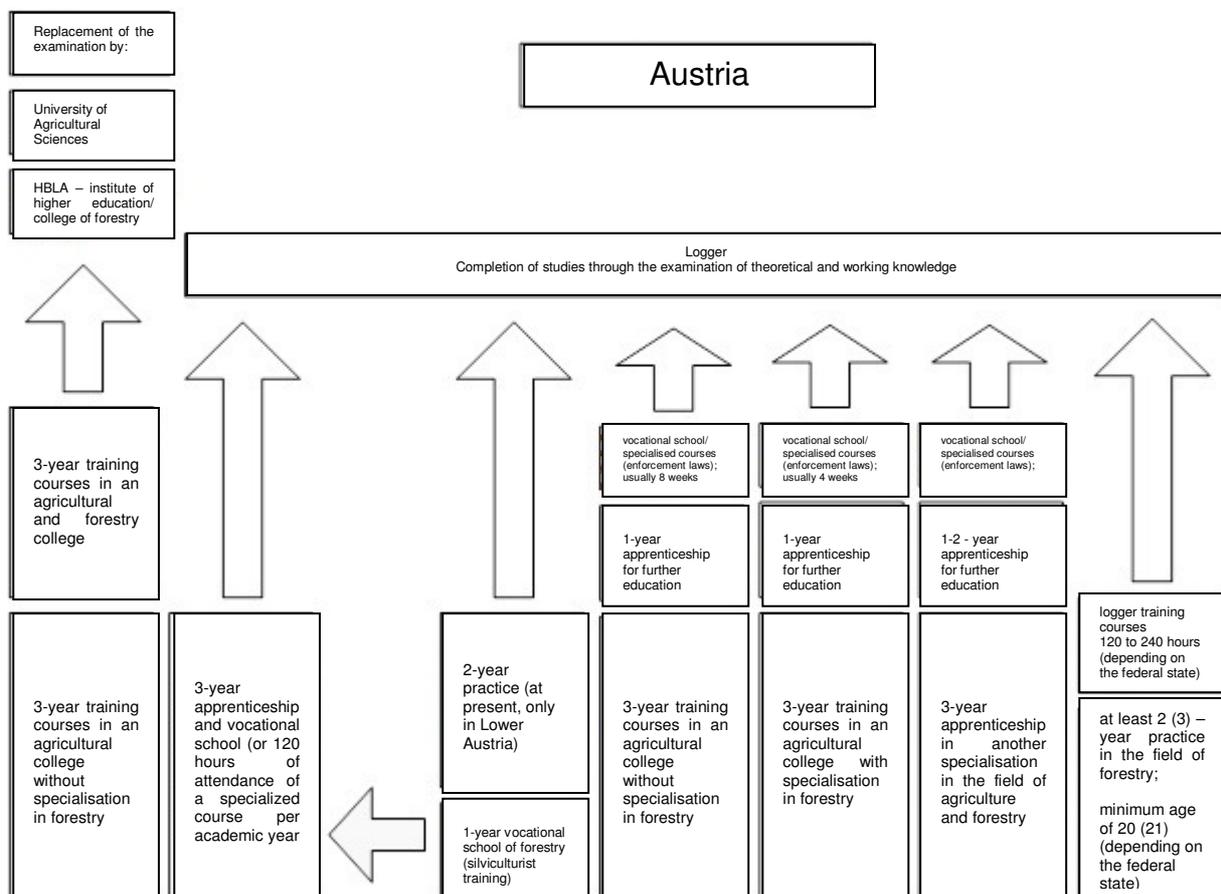


Figure 1: Ways of becoming qualified logger in Austria (Rottensteiner and Stampfer, K. 2011)

| Country | Switzerland | Germany |
|--------------------------|---|---|
| After school education | forest machine operator with Swiss Certificate of Competence, specialised in harvester/forwarder/tractor requirement: vocational training, 2-year specialty practice, graduated modules, examination); chief operator of cable logging crane, with Swiss Certificate of Competence requirement: graduated modules | certified operator for forest machines requirement: vocational training completed, driving licence for category T |
| Name of job | forester with Swiss Certificate of Competence (EFZ) | silviculturist |
| Training | graduation exam (theoretical and working knowledge) | graduation exam (theoretical and working knowledge) |
| | <div style="display: flex; justify-content: space-between;"> <div data-bbox="541 835 719 1151">3-year apprenticeship (4 days a week) in the practice unit or training community (association of several forest divisions)</div> <div data-bbox="746 835 930 1151">vocational school (1 day a week) courses accompanying practice and training courses between the forest divisions (47 to 52 days with 8 hours) or module training</div> </div> | <div style="display: flex; justify-content: space-between;"> <div data-bbox="995 835 1174 936">1-year apprenticeship in a practice unit</div> <div data-bbox="1201 835 1385 936">vocational school (1-2 times a week or 2-3 – week modules)</div> </div> <div data-bbox="995 947 1385 1003">intermediary examination (theoretical and working knowledge)</div> <div style="display: flex; justify-content: space-between;"> <div data-bbox="995 1014 1174 1151">2-year apprenticeship in a practice unit</div> <div data-bbox="1201 1014 1385 1151">vocational school (1-2 times a week or 2-3 – week modules)</div> </div> |
| potential practice units | <ul style="list-style-type: none"> - public forest division - private forestry company - education network (association of several forest divisions) | <ul style="list-style-type: none"> - main forest division for acquisition - independent forestry unit - forestry services provision company - public sector management - association (forest community) - several forest divisions |

Figure 2: Training for qualified loggers in Germany and Switzerland (Rottensteiner and Stampfer, K. 2011)

In Germany, the companies providing forestry services have also the right to train apprentices. The same happens in Switzerland. There, the companies providing services in the forestry field are considered to be private forestry companies and are allowed to train apprentices (Lüchinger, 2011). In Switzerland, a unique feature is given by the practice unit associations, which are formed by two or more forestry companies. These companies join together in the form of vocational training communities with the purpose of training apprentices. Using this method, it is intended to provide the complete contents which should be covered during the training process.

At the beginning of the apprenticeship, it is established what is going to be taught, in which forest divisions and at what time. Although even in Germany several forest divisions may train qualified workers, if these forest divisions do not meet all the requirements according to the training institutes, this regulation becomes an exception.

1.3 Module-based training plan for qualified loggers

Following some interviews and a seminar held by experts, the study authors, Rottensteiner and Stampfer (2011), end up by proposing a training plan based on modules for the training courses attended in order to become qualified loggers in Austria. Therefore, besides the basic module that must be graduated by all the participants, one may choose between 4 main modules and one of the 5 specialised modules.

The relevance to the ATHOSK project consists of the fact that one of the 5 specialised modules shall be dedicated to the cable logging system theme, shall take about 80 hours and shall focus on the following:

Cable logging system

- Getting used to various methods of cable logging
- Planning and organising the work
- Measures for the organisation of the work station from the ergonomic point of view
- Cable operation procedure
- Elements of the cable logging system
- Principles and remediation of problems in connection with the hydraulic and electronic elements
- Planning and installing cable routes
- Installation and removal of cable logging systems
- Choosing the supports and the anchorage trees

- Building the artificial supporting elements
- Making the calculations to establish the bending deflection
- Making joints and preparing cable fixing elements
- Exploitation and maintenance of cable logging systems
- Getting to know the factors of influence on productivity and costs
- Calculation of the costs with the machines
- Calculation of production costs (calculations before and after the commissioning)
- Commercial law and labour law

Once ATHOSK has almost completely covered these training issues and, based on these, has defined a 3-week vocational training contents, the ATHOSK graduation as specialised module should be taken into consideration. This graduation is recommended both from the point of view of the manufacturer or user and from the accident prevention perspective. This procedure makes it possible to deepen the ATHOSK contents when training qualified loggers on one hand and to follow ATHOSK as a separate module from the qualified logger training programme, namely in the form of a specialised course designed for the teams working with cable logging systems on the other hand.

1.4 Legal changes

In parallel with the structuring of the qualified worker training programme and for the recognition of ATHOSK in the specialised module, it is desired, from the ATHOSK partners' perspective, to change the Vocational training law so that the so-called vocational training associations, to which the access of the contractors is also allowed, may also train professional loggers to the extent they are certified to do such thing, at least partially. For this purpose, it is necessary, of course, that the parties interested, both the companies (Chamber of Commerce) and the Chamber of Agricultural Workers lobby the lawmakers.

In this context, it must be noted the fact that the accentuated federalism in Austria has resulted in an inhibiting effect on the forestry education. The allocation of the

components between the federation and the state, for example, leads to a labour law at republic level, but there is the possibility of a decision in connection with the labour law by each federal state. Some federal states have used such possibility while others haven't. The consequence is that more legal regulations apply to one subject matter. From the point of view of ATHOSK, the existence of a unitary legislation for the entire Austria in the field of vocational training and after school education is desired. This would facilitate both the enforcement as well as the control of the legal framework for all the parties involved – authorities, contractors, workers – enhancing a simplification.

1.5 Training recognition at transnational level

From the European point of view and especially after considering the market opening, it is absolutely necessary to assess the individual vocational training and standards and to obtain a recognition method for the training programmes specific to each country. In this respect, ATHOSK has brought a first major contribution, namely the partner organisations participating in the ATHOSK vocational training programme recognise among them the training programme attended.

1.6 Taking over by ATHOSK of the forestry training centres as part of the measures for after-school education and training

The stated objective of ATHOSK is that ATHOSK, besides the vocational training in the form of a specialised module, replace the cable logging crane courses attended until now and that ATHOSK be taken over by the forestry training centres in order to achieve a greater efficiency of the practice. This measure is not meant to bring into competition the vocational training institutes, but to coordinate the training programmes. A combined approach between the theoretical knowledge and the development of the learning contents “at the workplace” allows a much tighter cooperation between the forestry training centres and the companies. However, this needs persuasion efforts so that the training centres do not see ATHOSK as a competition compared to the courses they provide, but to perceive ATHOSK as an opportunity and to engage in partnerships in order to provide an up-to-date and practice – oriented vocational training for the operation of cable logging systems.

2 Slovenia



2.1 Training in Slovenia

The vocational training constitutes the basis for a safe and efficient work. After completing the elementary school, the pupils in Slovenia are professionally trained at different secondary and vocational schools, where they reach the desired education level and therefore, can find a job. The vocational training to become a forester (the equivalent of the Austrian logger) has a long tradition in Slovenia. Since 1959 there is *The Postojna Secondary School for Forestry and Forest Technologies (SGLŠ Postojna)* in Postojna, which plays the leading part in the vocational training for qualified loggers in Slovenia. Lately, the forestry training courses have been included in the training programmes at several other vocational schools.

2.1.1 Training for qualified loggers

In the field of training to become qualified loggers, the following institutes are present in Slovenia: the Postojna Secondary School for Forestry and Forest Technologies (SGLŠ Postojna), the Vocational School in Postojna and the Biotechnical Faculty in Ljubljana – Forestry. At SGLŠ Postojna 2 vocational training programmes are carried out: forester and forestry technician. The Vocational School in Postojna trains engineers in the forestry and hunting field, at the Biotechnical Faculty in Ljubljana students may complete their studies as forest engineer with Bachelor of Science Degree or graduate engineer.

The training programme covers various fields of forestry. Due to the highly specific requirements and the relatively low use of cable logging systems, the logging using cable logging systems for forestry usage is not completely taught anywhere.

For this reason, for workers operating the cable logging crane, additional cable logging crane operation courses are offered. The cable logging crane operation courses are organised and held by the SGLŠ Postojna with the help of the foreign experts in the cable logging. The cable logging crane operation course comprises 41 hours of theory and 56 hours of practice. The cable logging crane operation course is graduated after passing an exam, which includes the examination of both the

theoretical knowledge and the working knowledge. Therefore, skilled workers operating the cable logging crane meet the requirements for the cable logging crane operation, according to the provisions regarding the minimum requirements to be met by the workers who carry out forestry works. (The Official Journal of the Republic of Slovenia, No. 35/1994, 74/2011) (Ur.l. RS, št. 35/1994, Ur.l. RS, št. 74/2011).

The measure regulates, besides the cable logging crane operation, the previous level of education. For wood transportation using the cable logging crane, it is necessary to graduate at least the education level 4 and a cable logging crane operation course or to have a national vocational training as cable logging crane operator. In order to design the cable logging, it is necessary to graduate the training level 6/1 in the forestry field and a cable logging crane operation course.

The cable logging crane worker is also provided with the training catalogue which he can use to obtain nationally recognised skills. According to this method, the workers who have acquired formal knowledge and experience in the cable logging technology may be granted an appropriate certificate by which they can prove their vocational training, respectively the competence for a certain type of work. In order to obtain the “national vocational training certificate”, a detailed procedure is to be followed, by which the skills and knowledge are tested and confirmed.

For all the workers who carry out their activity in the forest using a chainsaw, appropriate knowledge is required and such knowledge may be proved by means of a valid certificate indicating that the vocational training to become a forester was completed, of a national certificate proving the vocational training to become a forester – woodcutter or of a successfully completed woodcutter course.

The cable logging crane workers must also prove they have the above mentioned skills since they also use the chainsaw when carrying out of their activity.

The same thing applies to the workers operating the hydraulic loader.

2.2 Comparison between the different types of training

| | Type of training | Duration (in years) | Points | Training level |
|--|---|---------------------|------------|----------------|
| HIGH SCHOOL | Intermediary vocational training level/ FOREST GUARD | 3 | 180 points | 4 |
| | Vocational and technical training/ FORESTRY TECHNICIAN | 4 | 240 points | 5 |
| VOCATIONAL SCHOOL/COLLEGE | College/ FORESTRY AND HUNTING | 2 | 120 points | 6/1 |
| BACHELOR STUDIES – ACADEMIC DEGREE | The first level of higher education of the Bologna system of education/ FORESTRY | 3 | 180 points | 6/2 |
| | The first level of higher education of the Bologna system of education/ FORESTRY AND RENEWABLE FOREST RESOURCES | | | |
| BACHELOR STUDIES – POST GRADUATE STUDIES | Master’s degree, the second level of the Bologna system/ FORESTRY AND MANAGEMENT OF FOREST ECOSYSTEMS | 2 | 120 points | 7 |
| | PH D IN NATURAL SCIENCES (the third level of the Bologna system)/ NATURAL SCIENCES BIOMEDICINE ENVIRONMENTAL PROTECTION STATISTICS | 3 | 180 points | 8/2 |

Figure 3: Vocational training levels from the point of view of type and duration of the vocational training (source: Češarek, Prelc, 2012).

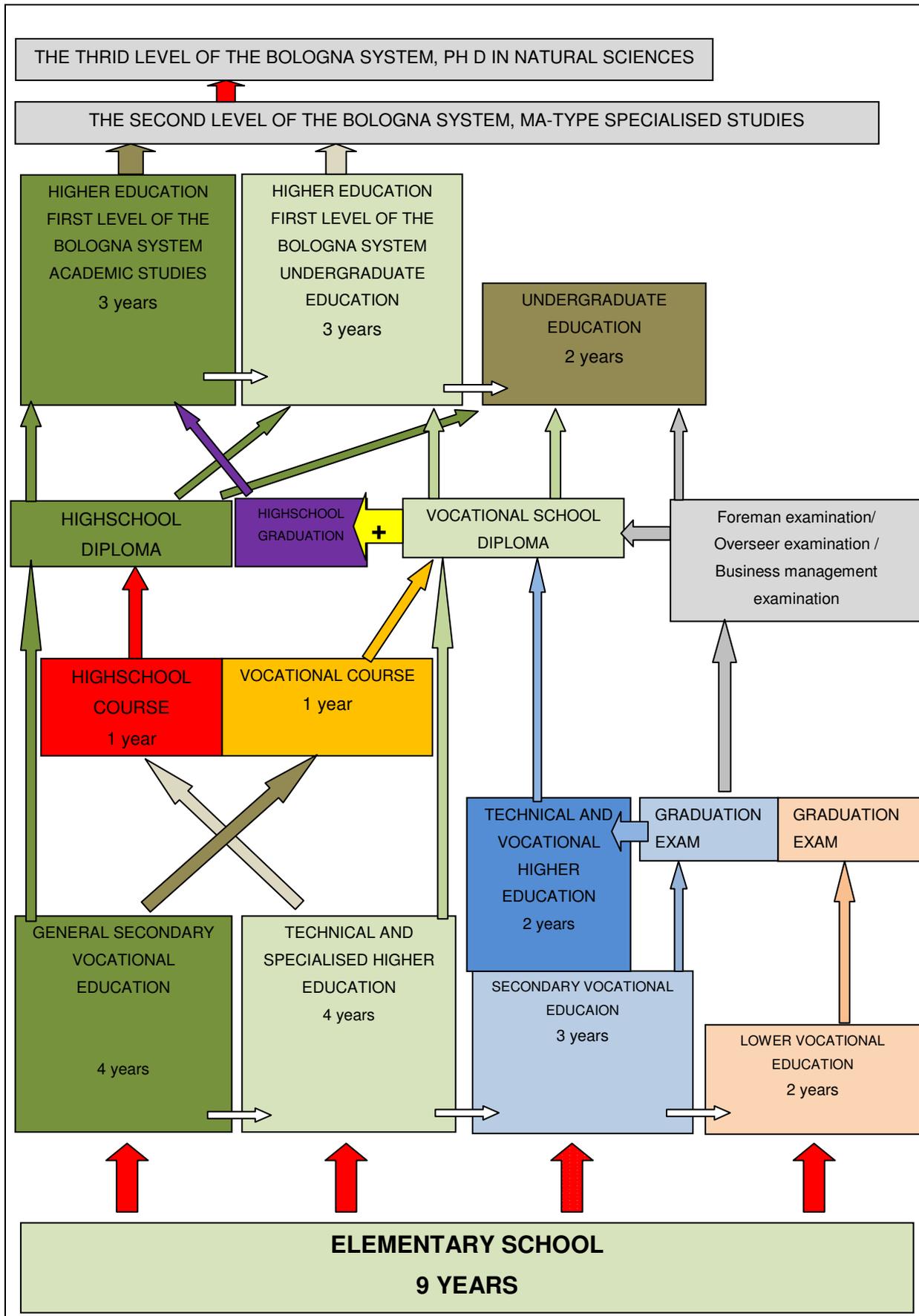


Figure 4: Forestry education in Slovenia (source: Češarek, Prelc, 2012).

2.3 Module-based training plan for qualified loggers

In Slovenia, the operators of the cable logging crane used for logging are trained following a unitary system. These are the so-called cable logging courses. The participant in the course is trained to become a machine operator, operator of traction trailers (trailers) and auxiliary worker/woodcutter.

Thus, the “job rotation” system may be applied at the workplace, which leads to an even distribution of the workplace within the work team responsible for the cable logging. The module-type vocational training system designed for loggers could be a positive method to better integrate new learning resources and specialised knowledge in other fields too directly into the training (for example, operation of harvesters, exploitation of the processing units and others).

The vocational training to become a forester or forestry technician is carried out according to a preparation plan based on modules, in which mandatory and optional modules are included. The modules contain theoretical and practical elements. Both are taught by one and the same instructor so that the pupils can be intensively and efficiently attended. This structure based on fixed and variable modules makes it possible to take over the subject matters covered by ATHOSK within the national training system.

2.4 Legal changes

The percentage of the cable logging cranes with processor attachable to crane (cable logging cranes with processor for the tilter). The operation of such equipment requires additional knowledge and the changing of the present laws. For this reason, at present, an expert team in the field of the cable logging technology is already working in order to prepare a presentation of the legal changes and necessary knowledge.

2.5 Training recognition at transnational level

As far as the unitary training method established for the training to become an operator of the cable logging systems within the ATHOSK project is concerned, the training completed in order to become an operator of the cable logging crane is mutually recognised because the knowledge is taught according to the same methods and safety standards. There are small differences in the field of labour protection. In this field, reference shall be particularly made to the differences and

regulations specific to each country. Labour protection particularly influences the work execution method and not the technology used and applied, which stays the same. For this reason, these differences should not become obstacles to the mutual recognition of ATHOSK in each and every partner country.

2.6 Taking over by ATHOSK of the forestry training centres as part of the measures for after-school education and training

The subject matter covered by the ATHOSK project fully coincides with the vocational training catalogue and with the contents of the courses taught in Slovenia. By including the ATHOSK standards, the existing training types are improved, completed and brought to a unitary level with the other countries in the Alps area.

3 Romania



3.1 Training in Romania

The vocational training and the postgraduate education in Romania are subordinated to the “National center for adult training” NCPFA as well as to the agricultural and forestry secondary schools. Furthermore, there are forestry universities which provide higher education in the field of forestry.

In Romania, the training to become a logger is subject to certification. The vocational training standards and especially the safety ones do not correspond to the standards ATHOSK follows.

The contractors in the field of logging and wood cutting also need a certificate.

This means that each contractor in the field of wood cutting in Romania is conditioned by the granting of an official certification.

Mainly, similar to the situation in Slovenia, for each job and each forestry activity, a proper training with a recognised certification is required. Practice proves however that there is a highly accentuated gap between theory and practice (legal regulation on one hand and actual execution of the works on the other hand). This gap is very clear especially in the case of the application of a technological level corresponding to the cutting technology and of the conformity with the mandatory safety standards as well as in the case of the use of individual protection equipment. The safety helmets of loggers, the cut-resistant pants and the safety boots are not yet part of the work equipment in Romania, being more an exception than the rule.

3.1.1 Logger – forest cutter

In Romania, the training to become a logger or forest cutter can be completed by attending a 360-hour course. A number of 240 hours is meant for practical training and the remaining number of hours represents the theoretical course. Furthermore, the qualification can be also granted by attending the courses of an agricultural and forestry secondary school. The graduates are awarded a certificate issued by a certified training institution.

3.1.2 Cable logging works

The training required for the operation of the cable logging systems is also regulated by the law and comprises the necessary requirements for the workers operating the cable logging systems. This training is also provided by the National center for adult training. This training covers all the cable logging systems used and does not make the difference between the transport of the materials, transport of personnel and the logging.

3.2 Module-based training plan for qualified loggers

The present situation in Romania, where there is a big difference between the legal framework, in the form of required certifications, and the working knowledge used on-site, would be ideal for the implementation of a module-based training system. The first step would be the implementation of the training programme for the execution of the wood cutting works using the chainsaw in the form of a course meant to train forest cutters using the chainsaw; the course would focus on labour safety, cutting technology for soft wood and rich wood, including the legal requirements and, in particular, a detailed part regarding the chainsaw maintenance and service.

This module should be considered as basic requirement for any other forestry activity in the case of which priority must be given to the practical activity and not to the achievement of formal certificates.

Subsequently, based on a general course for wood cutting using the chainsaw, respectively based on the checking of the working skills in this field, specialised training alternatives should be offered, for example in the case of works at a logging line designed for forest exploitation. At present, in Romania, in the logging sector, cable systems without loading crane and processor are mainly used. For such a specialisation, ATHOSK would be the ideal opportunity to provide vocational training at the workplace to the individual participants in the logging works. Moreover, such programme might fill in the gap in the field of cable logging technology and provide the necessary knowledge in the field.

3.3 Training recognition at transnational level

If ATHOSK succeeds to implement and officialise the vocational training in the field of forestry exploitation using cable logging cranes, the ATHOSK training programme shall be recognised by all the project partners and probably shall also be recognised

by the partner countries. The prerequisite for such thing is to find partner organisations in Romania ready to adopt the ATHOSK standard and subsequently use it in the vocational education for the training regarding the cable logging systems. Meanwhile, it is also possible that the persons interested to participate might graduate the ATHOSK vocational training course in one of the partner countries and thus a rapid knowledge transfer may take place.

4 Italy

4.1 Training in Italy

In Italy, the forestry vocational training is clearly stated with regard to foresters and forestry academicians. The training to become a silviculturist is divided into Bachelor and Master Studies. The courses attended and graduated abroad must be recognised by the Italian state. The forester job requires the graduation of a secondary school, respectively of an agricultural technical college. In Italy, there is no secondary school of vocational training in forestry (like in Austria). The vocational training for loggers is not subject to a specific schooling, but, in most cases, the activity is mastered as a craft which was learned and the specific knowledge can be obtained by attending the appropriate courses. In some regions of Italy, postgraduate education courses are provided by means of the forestry department, especially in the field of labour safety. Besides the fact that in Italy the training for loggers is not governed by regulations, there is no demand for vocational training courses on the operation of cable logging systems, respectively of forwarders.

In Italy, labour safety is very generally described and the industries are independently governed by regulations. The legal basis was transposed to the national law based on the EU directives. Since the constitutional reform in 2001, the legislative power, with some exceptions, has been transferred to the regions. The state adopts master-laws for certain fields, but these laws can be defined with more details and adapted to each region. Moreover, the two provinces, Trentino and South Tyrol have been authorised to adopt their own internal regulations. In 2008, in Italy, the so-called unitary text was adopted in order to ensure labour safety. But, until the present moment, neither laws regarding labour safety nor concrete statements regarding logging have been adopted by the Trentino and South Tyrol regions. This means that, in case of workplace accidents, the technological level of the neighbouring countries, Austria and Germany, is referred to.

4.2 Training in Italy

In Italy, there is no unitary system of training for loggers at national level. This training can be obtained at regional level, by means of the specialised courses provided. Vocational training programmes are not available in all the regions; the main legal requirements vary from region to region and, in some cases, from region to region.

Recognised courses for loggers are provided in the following regions:

- Aosta Valley:

In this region, 5-week courses are provided to the loggers (*bûcherons*) employed by the state-owned forest divisions; these courses provide training for the operation of the machines used for forestry works and land management and strongly focus on practice.

The courses included in this training programme are organised by *Assessorato Agricoltura e Risorse naturali* (the Council for Agriculture and Natural Resources) and is meant for the workers who carry out their activity in the woodlands of the natural resource department and of the forest division as well as for the employees of other structures and authorities which manage the territory of the region.

The courses describe the correct operation of the chainsaw and of the other machines used for forest work and provide training for the logger job.

There is no specialised training for the operation of the cable logging crane.

- Piemont:

In this region, there are three different types of forestry jobs and three appropriate training programmes; by means such programmes **the professional qualification of logger, biological engineer and tree climbing operator** can be obtained. The training during the attendance of these courses is carried out by instructors of forestry profile, special trained and strongly oriented towards working knowledge. The three training programmes based on modules depending on the various education units, are completed after passing a graduation exam which verifies the technical and working knowledge of the participants, following which the qualification

is granted. **The accreditation of certain education units** may be replaced by proof of the relevant experience.

The Piedmont region has recently proposed a round table debate for all the Italian Alps regions, in order to find out more about the educational system in the forestry field of each local authority and to determine a legal instrument for the mutual recognition of the competence obtained by the various training means. The proposition was appreciated by the regions of Liguria and Lombardy and the autonomous province of Trent.

There is no specialised training for the operation of the cable logging crane, but, during the last years, training and educational activities have been occasionally organised for this technique.

- Liguria:

This region does not provide courses at regional level, but recognises the logger craft for which the training was completed in the region of Piedmont. At present, in the region of Liguria, efforts are made to adopt appropriate provisions and to introduce a forestry training programme, following the example of Piedmont.

- Lombardy:

The training programmes for loggers and chief loggers in this region aim at developing the necessary skills in the field of agriculture and forestry for independent activities or for the employees of the forestry companies, forestry associations, mountain communities and other government agencies. The prerequisite for the participation in the courses is the legal age and the physical and mental aptitudes in connection with the forestry activity as well as an interview for the introduction and assessment at the accredited vocational training institute, which the course provides. International candidates must have basic knowledge of the Italian language so as to be able to socially relate and to understand the technical terms in connection with the tasks to be filled by loggers.

The minimum duration of the training programme for the loggers is 40 hours, with 32 hours of practical exercises. The course aims at providing the basic knowledge necessary for the operation of the chainsaw during tree care and forest management activities and is taught by instructors specially trained in the forestry field. Upon

completion, an oral and a practical exam shall be taken; if successfully passed, the vocational certificate of “logger” is issued.

After this certificate is obtained, the course can be attended in the second stage, for the training as chief logger; the minimum duration of the course is 40 hours, with at least 32 hours of practical exercises.

During the second course, the participants can learn about the activity from a more complex point of view, including how to manage woodlands. The purpose of the course is to train qualified workers which carry out their activity independently and in accordance with the safety requirements applicable to the workplace.

Upon completion of the course, an oral and a practical exam shall be taken; if successfully passed, the vocational certificate of “chief logger” is issued. There is no specialised training for the operation of the cable logging crane.

- The autonomous province of Trent:

Servizio Foreste e Fauna (the Agency for Forests and Fauna) in the autonomous province of Trent organises demonstrative courses and projects for the operation, technique and security of forestry machines.

The instructors possess appropriate technical and operational skills due to their own working experience and are, in their turn, educated and trained from the point of view of teaching and communication methods.

In order to hold the courses, the province of Trent has a motor vehicle fleet and appropriate forestry equipment (tractors, winches, logging cranes etc.). The auxiliary activities are prioritarily executed under real forest circumstances.

The vocational training offer comprises: courses for professional workers (cutting, logging using the tractor and the winch, installation and operation of traditional logging cranes and mobile logging cranes), courses for unskilled workers (cutting – basic technique) and courses for technicians (the technique, operation and security of forestry machines, planning of the transport using the logging crane). Furthermore, demonstration projects are organised with the purpose of increasing the citizens’ awareness with regard to the hazards of operating a chainsaw and sharing the information regarding the relevant safety measures.

The courses for skilled workers are meant for the employees responsible for the cutting works (owners or employees of the forestry or agricultural companies, companies registered in the agricultural company register or found on the lists of

independent cultivators). The preliminary requirement for the participation in the courses is given by the physical and mental aptitudes for the carrying out of the forestry activity as well as the knowledge of the Italian language.

The qualification of leader of the team operating the forestry machines makes it possible to obtain the “driving licence” (“*Patentino*”), which proves the completion of the training for the operation of forestry machines and which is nationally recognised. The preliminary requirement for the participation in this course is the participation in the “basic course for tree cutting” or the possession of recognised certificates by which the holder can prove his relevant professional competence.

The driving licence is valid until the end of the sixty-fifth year of life and can be renewed by 5 years at the end of the validity period: no mandatory subsequent training courses are required.

- The autonomous province of Bolzano:

Ripartizione Foreste (the Forestry Department) aims at providing basic training courses to all those who work in the forest: the forestry technique courses which strongly focus on the working knowledge are held by specially trained instructors. The offer comprises basic and advanced vocational training courses as well as specialised training courses. The courses on the operation of the cable logging cranes and winch cranes are organised by the Latemar Forestry School. The Azienda Provinciale Foreste e Demanio (State Agency for Forestry and Public Domains) provides the qualified personnel and forestry equipment for the practical exercises of the course.

In April 2012 a special course for loggers was started in cooperation with the Fürstenburg Agricultural and Forestry College: the course is divided on several stages and ends with a graduation exam; if successfully passed, the participants are granted the logger certificate.

- Friuli-Venezia Giulia:

The region offers a 3-year vocational training which mainly addresses young adults who graduated from school; this programme provides the training for “logger for the environment and transhumance” recognised in Italy as well as in Europe.

The training programme includes the accumulation of basic and specialised knowledge, divided according to the specialty domains (in accordance with the

minimum standard of economy). From the point of view of the **professional/technical field**, the knowledge on the forestry techniques, the operation of the most important forestry machines, the mechanisation of work sites and the management of woodlands is also provided.

In the case of this vocational programme, the theoretical preparation alternates with the practical exercises in the companies, state-owned agencies or directly on-site, in the mountain.

Starting with the second year, vocational practices such as the individual placement within important companies in the region, in Italy or from abroad, are included.

There is no specialised training for the operation of the cable logging crane.

- Venice:

There is no data with regard to mandatory or optional training programmes for loggers in this region.

There is no specialised training for the operation of the cable logging crane.

- Emilia-Romagna:

There is no data with regard to mandatory or optional training programmes for loggers in this region.

There is no specialised training for the operation of the cable logging crane.

- Marche:

The regional law no. 6 of February 23, 2005 states that vocational training courses shall be provided by the Region.

There is no specialised training for the operation of the cable logging crane.

- Tuscany:

In this region, training courses for loggers of the first and second level as well courses for the management of the forest-covered areas (of the first and second level) are provided. These courses address the agricultural and forestry companies from Tuscany. The courses are held by institutions of educations in cooperation with the technical/vocational schools and with the University of Florence. Tuscany has a multifunctional center for forestry activities (Center for vocational training of regional loggers/experimental activities with the most important research institutions), which

focus on the valuation of renewable energies with accent on the forest-wood-energy chain.

The training programme was launched at the beginning of 2004, in accordance with the requirements of the regional programme in the forestry field 2001-2005 and then eventually financed due to Measure 111 of the regional development plan 2007-2013; the programme coordination and monitoring is done by the University of Florence. The vocational training activities are held by instructors (8 at all) certified to train loggers who were trained during 2004-2012 by assistant professors.

The instructors possess appropriate technical and operational skills due to their own working experience and are, in their turn, educated and trained from the point of view of teaching and communication methods.

The types of courses provided are shortly described hereunder:

- Basic course (safe use of chainsaws and cutting and processing techniques);
- Advanced course (transport systems for the wood used);
- Course on the forwarder (special course on the forwarder and the auxiliary forestry equipment);
- Course on the cutting of the coppice and planting (cutting and working techniques for the coppice vegetation);
- Course on the management of the woodland (course for regional loggers on the safety of forest-covered areas and the selection in the forest sector);
- Vocational training course for instructors (yearly specialised training of the instructors who train loggers).

At the regional level, there is no specialised training for the operation of the cable logging crane; the vocational training on the operation of the cable logging means was however approached by the assistant professors at the University of Florence along the years (since 1983 until 1999).

These courses included:

- Introductory courses on the logging cranes;
- Specialised courses for the operators of the cable logging means;
- 3 postgraduate courses on the technical and specialty field for the operators of the cable logging means (installation, operation and removal of the cable logging means);
- Course on the design of cable logging means for forest exploitation;

- Specialised course for loggers on the installation, operation and removal of mini cable logging cranes;
- Course on the safety in the operation of logging cranes;
- Course on the planning and design of cable logging lines for forest exploitation;
- Course on the vocation training for the use of cable logging means in the areas with hydraulic exploitation and forest exploitation as well as courses on the continuous vocational training.

- Umbria:

In this region, basic vocational training courses on tree cutting and advanced courses for the employees from this sector who wish to participate in the courses, but do not intend to pass the graduation exam, are provided. Locally, some mountain communities require that all the workers using the chainsaw to cut the wood, the sections for the free space jig and to carry out the pruning works, are written down on the list of loggers of the relevant mountain community and have an **approval certificate** issued upon submittance of the document proving that the requirements stated were met or after participating in a 6-hour training course.

There is no specialised training for the operation of the cable logging crane; various state-owned agencies have occasionally organised special courses on the operation of logging cranes.

- Lazio region:

The agriculture development programme 2007-2013 for the Lazio region includes the introduction of the vocational training initiatives for farmers and silviculturists as well as the courses for the continuous schooling of the technicians and all workers in the agricultural and forestry field, as part of the provisions – practical and operational also – for the compliance with the EU legal requirements and with the new rural development planning.

The development programme consists of three measures; one of these measures addresses the vocational training in the agricultural and forestry sectors and includes the financing of the initiatives for the training of the workers in this sectors.

The programme includes training activities which exclusively address the workers in the agricultural and forestry sectors and aims at providing the appropriate technical

and specialised knowledge in order to increase the competitiveness, efficiency and sustainability of agricultural and forestry companies.

There is no specialised training for the operation of the cable logging crane. Training activities have been occasionally developed.

- Molise:

Training programmes in the field of forestry as well as for the operation of the cable logging systems are not known in this region.

- Abruzzo:

Within the agriculture development programme 2007-2013, the regional council finances training measures as well as measures to inform and provide the workers in the agricultural and forestry sector with the useful data. The specific objectives consist mainly in supporting the vocational training and the continuous schooling in order to provide specialised knowledge and skills. The measures address the contractors, the auxiliary personnel and the workers in the agricultural and forestry sectors as well as the young adults who wish to work for the first time in an agricultural or forestry company. The tender also includes the accreditation methods for the educational institutions, for the submission of the service provision offers in the field of education for the tenderers, after the appropriate training programme has been chosen.

We have no information on any special training courses for the loggers in this region.

- Campania:

Training programmes in the field of forestry as well as for the operation of the cable logging systems are not known in this region.

- Apulia:

At the province level, forestry courses are organised in cooperation with the technical schools/vocational schools and complete the vocational reorientation measures for the unemployed: so, these courses are exclusively meant for the unemployed. The courses last for 600 hours, 250 hours of practice in a company. Upon completion of the course, an exam to check the skills acquired shall be taken; if successfully passed, the vocational certificate of “logger” is issued. The vocational training

programme is made up of 12 preparation modules which focus on the learning using the *learning by doing* method.

- Basilicata:

As part of the agriculture development plan 2007-2013, training courses for loggers are organised in this region; the access to such courses is possible only by tender. There is no specialised training for the operation of the cable logging crane.

- Calabria:

The agriculture development plan 2007-2013 includes initiatives for the vocational training of the workers in the agricultural and forestry sectors.

The training aims at covering the need of qualified and skilled personnel in these sectors by providing short specialised courses (maximum 40 hours).

The vocational training courses are held as part of some accredited institutions, based on the demand from the agricultural sector (contractors, employees). The courses are exclusively meant for the contractors and workers in the field of agriculture and forestry.

The Regional Forestry Agency in Calabria (*Azienda Regionale delle Foreste della Calabria*) has acquired various forestry machines for the management of the state-owned forests and has organised a vocational training course in cooperation with Università della Tuscia, for a series of employees; the course focuses on the working knowledge, with technical and practical elements, has a 5-week duration and included specialised training for the cable logging.

- Sicily:

Centro Siciliano per la Formazione Professionale (The Sicilian Vocational Training Center) organises training courses for loggers; the courses have a total duration of 600 hours.

- Sardinia:

We have no information on any special training courses for the loggers in this region.

Only in some regions in Italy (such as Lombardy) it is mandatory that at least one of the employees of agricultural and forestry companies graduates a vocational training course for the company to be allowed to register in the forestry company register.

The royal decree R.D. nr. 827 of May 23, 1924 states, and this is applicable to the entire Italian state, that it is mandatory to possess a “driving licence” (“*Patentino*”), which certifies the skill to operate the forestry machines used in the forest-covered owned by the state authorities. Such requirement is not mandatory at national level for the loggers working on private woodland.

From the point of view of forestry and from the point of view of ATHOSK also, it is desired that the vocational training for loggers becomes a practical craft, respectively a vocational reorientation alternative upon completion and graduation of such courses in a vocational school, with vocational practice as apprenticeship. This would undoubtedly elevate the position of the logger, respectively of the forester, and would increase the attractiveness of this craft. In parallel, this measure can provide a unitary training level which leads to an increase of the security standard. Given the fact that, at the present moment, a multitude of official training programmes are missing, ATHOSK can significantly bring its contribution to the cable logging field and can take over the module on the logging, which requires a high degree of mechanisation. This would lead to unitary rules in the field of logging and cable logging systems with processor for the tilter.

Valentini, as major manufacturer of cable logging systems and partner of ATHOSK, shall recommend to the users and buyers of cable logging systems to graduate the ATHOSK courses in order to cover the gaps in the knowledge and operation of such systems, thus providing a uniform standard.

Shortly, due to the low number of cable logging systems in Italy, we cannot draw the conclusion that this type of vocational training can be recommended in Italy. For this purpose, reference companies must be found and their employees must complete in-house training. The partnership as part of the ATHOSK project makes it possible however for the training to be carried out in Austria or Slovenia.

4.3 Training recognition at transnational level

If ATHOSK manages to implement and officialise the vocational training for the operation of cable logging cranes in Italy, then these ATHOSK training courses shall

be recognised by all the partners in the project and, probably, by the partner countries. The prerequisite for this is the implementation of the appropriate training programmes and the finding of the partner organisations, which are prepared, in their turn, to adopt the ATHOSK standard and to provide training courses for cable logging systems according to this standard. For this purpose, the Valentini Company can play a significant part as partner of the project and manufacturer of cable logging systems. Until then, the participants interested in the ATHOSK courses may graduate the training course in a partner country and thus a transfer of specialised knowledge may rapidly take place.

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