

Building a Generation of Safe and Healthy Workers Project.
Safe and healthy youth

Guide for the mainstreaming of

- **Occupational Safety and Health**

in vocational training programmes

**Forestry and wood
production sector**

Nina Billorou and Jimena Sandoya

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01



The Project

The Project

Occupational safety and health (hereinafter OSH) is critical when it comes to young workers, since they are the most vulnerable to both accidents and injuries at work as well as to diseases arising from occupational exposure.

According to national statistics, in Uruguay, 41.8 per cent of workers who suffered occupational accidents in 2014 were between 15 and 29 years old, and 45 per cent of the injured workers had been working less than two years (BSE, 2014). This means that those with less experience and qualifications suffer more accidents, in relative terms.

A recent study found that for young workers who received OSH teaching at school, the occupational accident rate was 50 per cent lower than for young workers who did not.¹

In this scenario, training and awareness-raising on OSH among youth must be a priority for all the stakeholders and institutions related to education, in general, and vocational training, in particular.

Uruguay is one of the participating countries of the global Project “Building a Generation of Safe and Healthy Workers. Safe Youth @ work”, executed by the ILO and funded by the US Department of Labor. One of the components of the Project aims at strengthening the mainstreaming of occupational safety and health into vocational training.

¹ Institut National de Recherche et de Sécurité, INRS, 2018. Quoted in “Improving the Safety and Health of Young Workers”, ILO - Labour Administration, Labour Inspection and Occupational Safety and Health Branch (LABADMIN/OSH), ILO, 2018.



ILO/Cinterfor (Inter-American Centre for Knowledge Development in Vocational Training).

Its role in the Project: Responsible for the implementation of the advisory services (it is framed within the Global Strategy of the ILO's Safe Youth@Work Project).

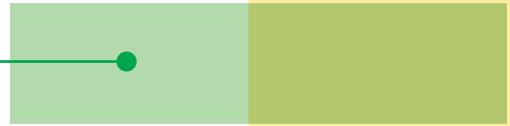


CETP - UTU (Vocational Technical Education Council - Technical University of Uruguay) is a public educational institution founded in 1878. It has 291 centres throughout the country that are divided between technical schools, agricultural schools, regional campuses divided by regions of the country and technological poles. Its role in the Project: counterparty institution of the Project.



Educational Technological Pole of Tacuarembó, CETP-UTU, inaugurated in 2017 in this city, it offers nine tertiary-level courses. Its role in the Project: tertiary-level training programme that offers the programme selected by UTU as a reference for analysis of the training offer.

02



Introduction



Introduction

The inclusion of OSH training into VT training programmes is commonplace. All the actors involved in training and work agree that it is in training processes where we should acquire knowledge, develop skills and internalize risk identification and prevention behaviours at work.

For participants in training processes, in particular young people, to effectively adopt **safe and healthy work behaviours**, they must understand and value their importance, associate them and apply them in the different processes and moments of their work practice, know their rights and duties in this field and, most of all, identify and act to prevent the specific risks to which they are exposed to by developing OSH skills.

However, most cases include a generic approach that focuses on the transmission of conceptual and informative content rather than on students developing their skills. Occupational safety and health issues are usually taught in a subject, in a

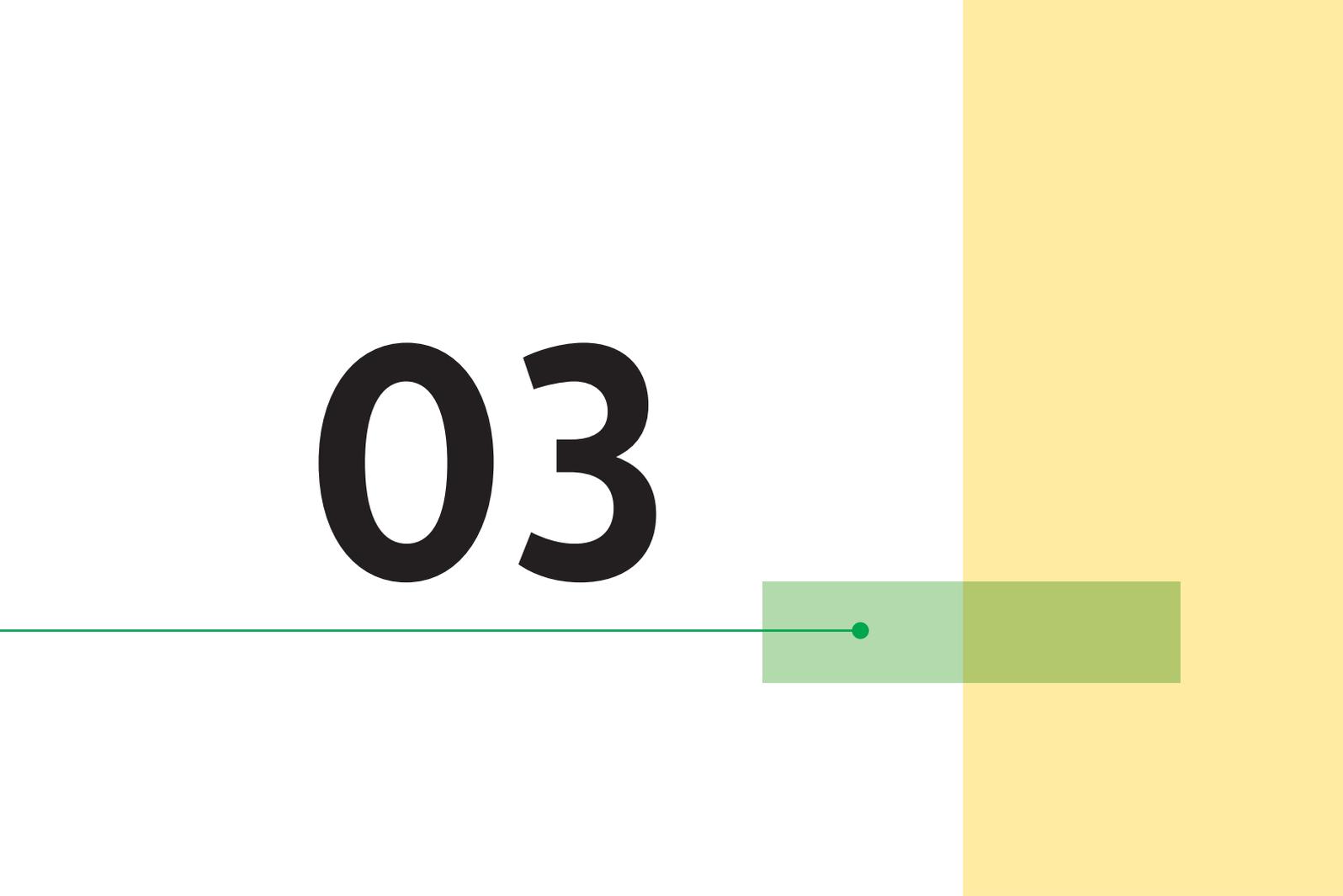
training module or concentrated in a given number of training hours at the beginning or in parallel with training processes geared towards the development of vocational skills, without a clear connection with the problems that participants face in learning situations and in work practice

It is essential to work with young people so that they understand that occupational safety and health is much more than just a boring set of rules and that knowing that the risks of every work process and how to prevent them is as important as acquiring and applying certain techniques or obtaining quality products.



All the actors involved in training and work agree that it is in training processes where we should acquire knowledge, develop skills and internalize risk identification and prevention behaviours at work.

03



Practical
guidelines:

What for?

How did we build them?

How can they be used?



3.1. What is the objective of these practical guidelines?

The objective of this booklet is to offer some practical guidelines to teachers to make their work in the field of OSH easier.

The guidelines and suggestions that are here systematized aim at mainstreaming the prevention of risks at work, the protection and the promotion of health into the forestry and wood production sector, while also taking into account the particular features of the target audience: young people who are participating in educational processes.

These guidelines include:

- Identification of skills to be developed by participants.
- Methodological suggestions for mainstreaming.
- Analysis of work processes by identifying risks, common errors and systematizing good practices.
- Examples of learning activities linked to different risks,
- A repository of resources to support training processes.



The guidelines and suggestions that are presented here to trainers and institutions aim at mainstreaming the prevention of risks at work, the protection and the promotion of health into the forestry and wood production sector, while also taking into account the particular features of young participants.

3.2. How did we build them?

The guidelines and solutions suggested here were drawn by observing, analysing and reflecting upon a training programme offered by UTU in the forestry and wood production sector.

Among the vast training offer provided by UTU in the agricultural sector, the institutional authorities decided to prioritize the forestry sector. More precisely, the training course selected is the associate degree in forestry and wood production from the Educational Technological Pole of Tacuarembó, whose entry requirement is having completed secondary education.

This has been a strategic decision for UTU since the Technological Pole is a new bet on regional development, where another pilot project to promote the forestry industry is being implemented. Tacuarembó is located in the Northwest of the country, 400 km from Montevideo, and is one of the departments with the highest concentrations of forest plantations together with Rivera, Paysandú, Río Negro and

Lavalleja.

The analysis and reflection process about good practices, and learned lessons was carried out based on the exchange among the institutional leaders, the team of teachers and students and was complemented by the research and implementation of these advisory services.

It is worth mentioning that even though the starting point was this specific programme, the purpose of this document has been that the knowledge, considerations, suggestions and methodological strategies that are presented here transcend the specific experience and provide inputs and tools that can be enriched, transferred and adapted to other forestry and wood production training proposals.



We believe that the most useful and relevant knowledge, learned lessons and good practices in the field of OSH training are those based on the experience and contributions made by the different actors involved: young participants, trainers, institutional leaders, state organisations, sectoral social partners, enriched by the help and research contributions by the authors. In such sense, this set of guidelines and tools is only a starting point, a proposal under construction, open to new contributions, experiences and revisions



The analysis and reflection process about good practices, and learned lessons was carried out based on the exchange among the institutional leaders, the team of teachers and students and was complemented by the research and implementation of these advisory services.

3.2.1. How can they be used?

This set of guidelines and tools is not a Manual, and is not meant to be a complete systematization of the available strategies and resources.

It seeks to bring together and organize a set of considerations, strategies and resources of different kind, drawn upon the analysis of good practices, lessons learned in the framework of a specific training programme so that they are available to:

- The teaching staff of technical training programmes of the forestry and wood production sector.
- Curriculum designers
- Institutional leaders.
- Vocational training policy makers.

In all cases, it must be pointed out that this paper is an input to include OSH issues in the vocational

training agenda, by providing tools and resources so that trainer teams use them according to the needs and characteristics of the participants, adapt them, contextualize them, combine them and suggest new individual or collective settings.



The intention here is to make tools and resources available so that training teams use them according to the needs and characteristics of the participants, and adapt them, contextualize them, combine them and collectively suggest new settings.

04

Structure of
contents

Structure of contents

Apart from sections **1, 2, 3, and 4**, which are an introduction, in section **5**, some general concepts about the meaning of OSH mainstreaming, and how it can be put in practice in competency-based training, are presented.

In section **6**, the characteristics and attitudes of young people towards risk prevention and management are analysed and in **7** the competencies that participants of a training program of a tertiary level, focused on the wood forest area, should develop in the formative process. Section **8** includes good practices and lessons learned about mainstreaming and section **9** proposes a methodological sequence for mainstreaming.

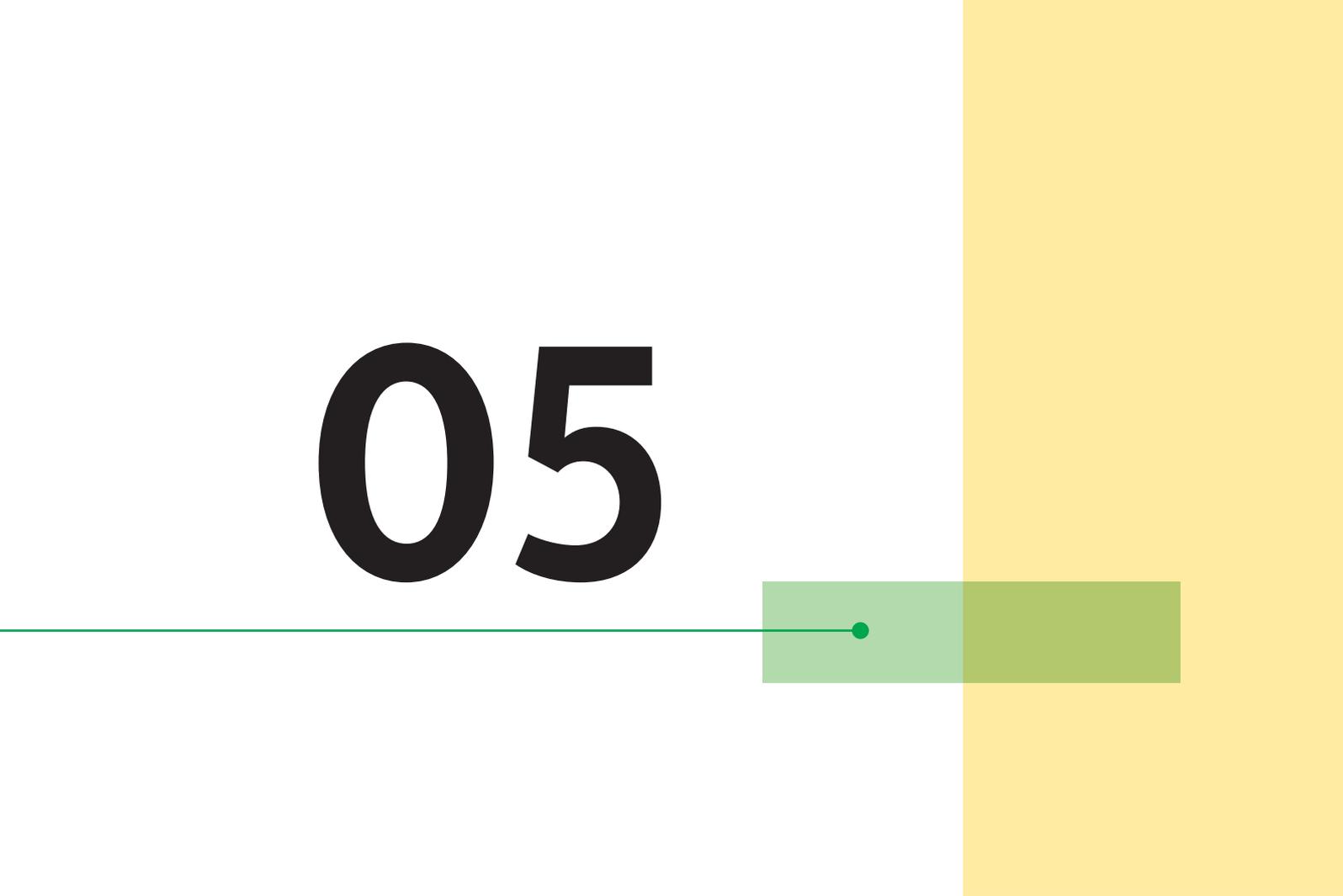
In sections **10 and 11**, there is an analysis of the skills that must be developed by young people and the work processes of the forestry and wood production sector.

Section **12** proposes that the systematization of risk factors, preventive measures, errors and regulations is essential for teachers to know all the information about OSH they need to consider in order to work on the issue.

A series of learning activities for skills development on OSH, as well as a repository of support materials for trainers and participants, respectively, are presented in sections **13 and 14**.

Finally, in section **15**, some suggestions are made to make mainstreaming in forestry training possible and section **16** summarizes comments from different actors.

05



What does it
mean to mainstream
OSH into training?



What does it mean to mainstream OSH into training?

The term cross-cutting, or mainstreaming, refers to something that passes through or traverses an object from one side to the other.

As for curricula, mainstreaming is a strategy whereby certain drivers, topics and/or skills that are considered key or priority are present throughout the programme, permeating all the specific subjects, modules and/or projects.

Mainstreaming “... basically refers to a new way of structuring the curriculum from a holistic or total perspective, contributing to overcoming the fragmentation of the areas of knowledge (independent subjects).”²



Mainstreaming OSH into training means considering that, in order for young people to develop the skills of caring for themselves and others, it is necessary to integrate this perspective in all learning situations.

² Abraham Magendzo K., “Una propuesta de un currículum en competencias genéricas e indicadores de logro para la formación de un sujeto de derechos: Desarrollo y complejidades”, Chile, 2011

Mainstreaming OSH into vocational training is a strategy to ensure that safe and healthy work becomes a key objective and dimension in the design, implementation and evaluation of training programmes and practices and thus clearly contribute to building new generations of safe and healthy workers.

Mainstreaming OSH into training means considering that, in order for young people to develop the skills of caring for themselves and others, it is necessary to **integrate this perspective in all learning situations**. This involves considering the risks and their incidence, as well as safe and healthy work practices in relation to each and every one of the specific technical skills included in the professional profile to be developed by the programme as a whole.

Mainstreaming OSH into vocational training is not an end in itself, but a means of facilitating and consolidating the development of OSH skills by the participating youth. It is a strategy to ensure that safe and healthy work becomes a key objective and dimension in the design, implementation and evaluation of training programmes and practices and thus clearly contribute to building new generations of safe and healthy workers.

Like any training strategy, however, it cannot guarantee the results it sets out to achieve on its own. For this strategy to become operational, the different actors involved (public policy makers responsible for training policies, training institutions, teams of trainers, tutors in companies) must be committed to the approach. Effective changes in youth care behaviours require paying attention not only to the apparent or explicit curriculum but also to the hidden curriculum, institutional culture and coordination with the productive sector.

Therefore, it is necessary to adopt an integrative approach at the different stages and products that are part of the design processes and training implementation. This implies that OSH is present in:

- **occupational profiles** that are the reference of curriculum design (SST skills),
- the **curriculum**, linking OSH skills to each



Mainstreaming OSH in training involves collaborative work, permanent coordination among trainers, with the support of institutional managers and a joint project approach to be developed from the spaces that are part of the training programme.

stage of the work process, to the labour context, to each module and teaching unit,

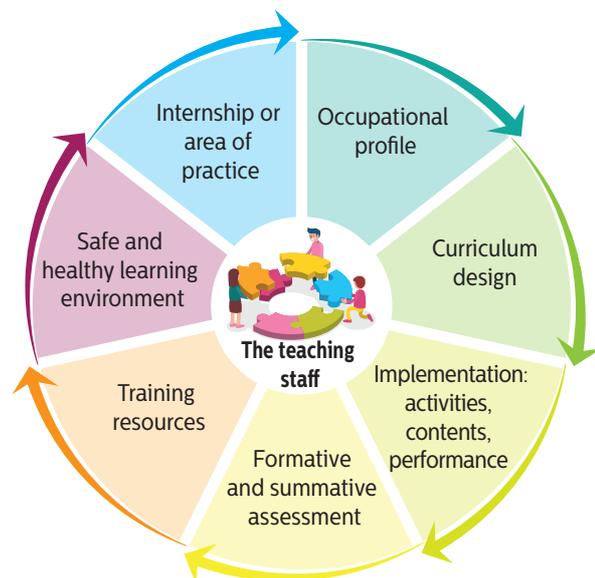
- the **implementation of the programme**, to ensure that facilitators pay ongoing attention to the subject, both from reflection and content and from performance during learning processes,
- the role of the **teaching staff**, through their practices of care and promotion of OSH, for which they must have solid training in the subject,
- the **learning resources**: training materials, both specific on the subject and including this dimension to all support materials,
- the **formative and summative assessment of learning**, so that the practices and knowledge linked to safe and healthy work are considered and required at the same level as the learning of technical skills,
- the **learning environments**, which should be an example, offering the best conditions from an OSH perspective,
- **apprenticeships or professional practices** that must be opportunities to learn good practices in this field.

It is worth noting that mainstreaming OSH into the curriculum, that is, an integrative and transdisciplinary approach, does not imply eliminating specific spaces devoted to the topic.

On the contrary, the **Forestry safety** subject, in this case, must not only be maintained but also strengthened, as it enables awareness raising, presenting and clarifying conceptual aspects.

However, when mainstreaming OSH, training should not only be addressed from this perspective.

Finally, we should not forget that all this will be possible as long as there is a team of committed trainers to lead it. We will refer to **trainer/teacher teams** throughout this booklet since mainstreaming cannot be done by every trainer in isolation. Mainstreaming OSH involves collaborative work, permanent coordination among trainers, with the support of institutional managers and a joint project approach to be developed from the spaces that are part of the training programme.

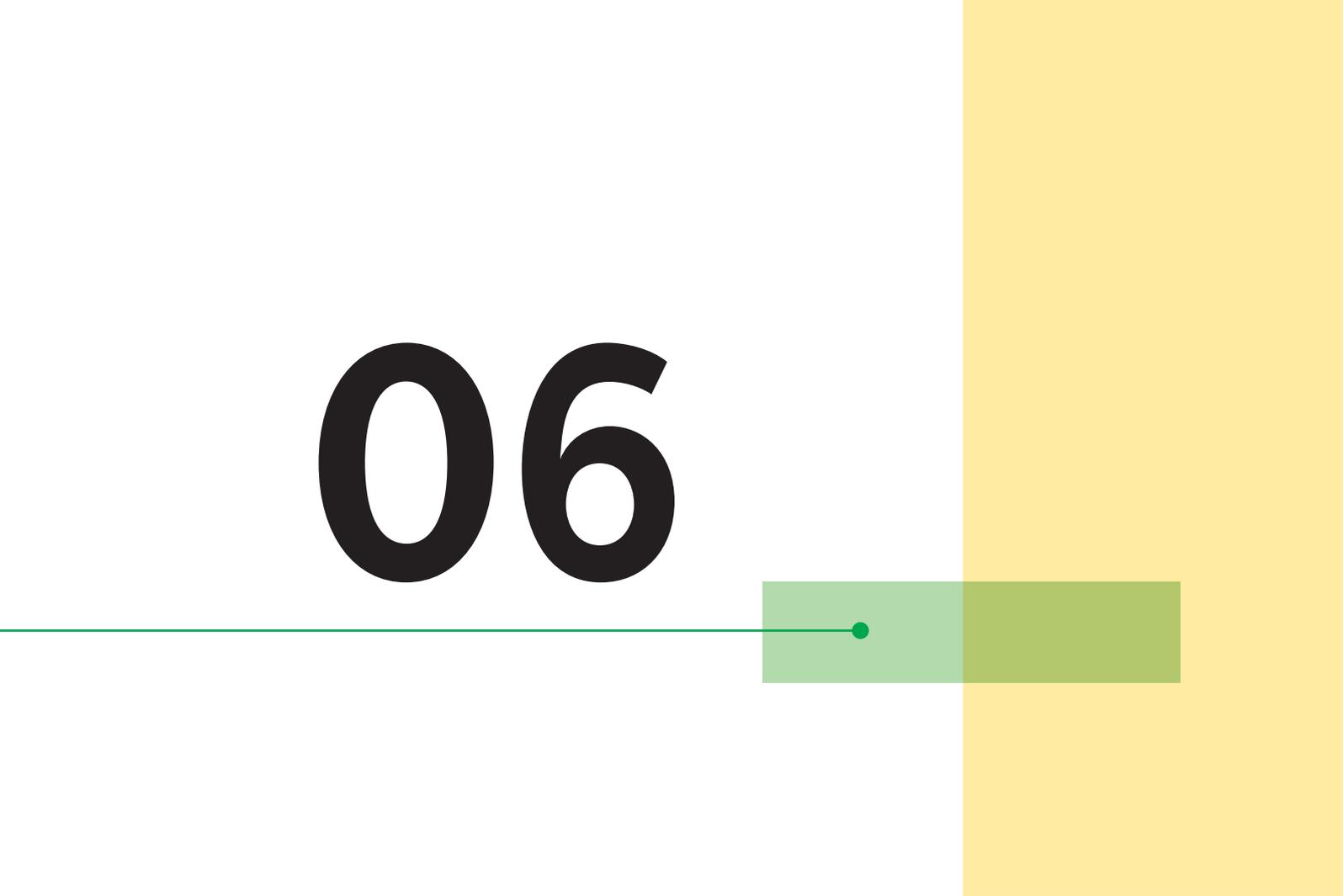




Mainstreaming OSH involves collaborative work, permanent coordination among trainers, with the support of institutional managers and a joint project approach to be developed from the spaces that are part of the training



06



OSH skills
development



OSH skills development

The starting point when designing and implementing a mainstreaming strategy focused on **OSH skills** development is to determine what performances and knowledge of various kinds are required to work safely and healthily in the professional role(s) which young graduates will be able to perform at the end of their training. Ultimately, it is a question of identifying which **OSH skills** education needs to address, as they are the ones required by the occupational profile(s) targeted by the programme.

The professional skills approach seeks to address the profound changes that have been taking place on work organization, qualifications and social relations within organizations and it involves significant changes in the way vocational training is conceived, articulated and organized. Although the approaches, uses and definitions referring to vocational skills are diverse, they all share certain aspects, such as:

- their connection to the demands of performing as a professional in a given context,
- the use or mobilization of a complex combination of internal (knowledge, skills, values, attitudes, emotions) and external resources to solve the professional situations that arise,
- considering people as subjects capable of understanding the implicit meanings of their performance in order to obtain a result with the required quality in a dynamic and ever-changing world of work,
- vocational skills are developed in training processes and in professional practice, work and social experience or as Guy Le Boterf³ proposes, in the apprentice's daily work, when navigating different situations.

³ Perrenoud, P. (2007). Diez nuevas competencias para enseñar, invitación al viaje. Biblioteca de Aula, 96. España.



The starting point when designing and implementing a mainstreaming strategy focused on OSH skills development is to determine what performances and knowledge of various kinds are required to work safely and healthily in the professional role(s) which young graduates will be able to perform at the end of their training.

07



Young people
and OSH skills

Young people and OSH skills

Competency Based Training (CBT) seeks to develop a dual relevance approach, which means being capable of catering to both the demands of an ever changing world of work and to the diverse needs of subjects that learn and have heterogeneous characteristics and starting points.

Thus, once the problems and specific skills to be developed are identified, it is necessary to determine the most suitable training solutions considering the profile of participants, in this case, young people. It is therefore essential to ask ourselves how young people learn, what interests them and how they position themselves regarding the potential risks they may be exposed to at work.

One of the issues to consider, and which has been extensively analysed in recent times, is the relationship of adolescents and young people with the risks they may be exposed to.

Dr. Silvia Bunge (University of Berkeley) indicates that young people “dismiss dangerous situations”

and identifies three aspects that can affect their behaviour: changes in the brain, the role of hormones and the influence of context and peers.

Indeed, young people undergo a stage of significant changes which is decisive in the acquisition and development of skills for life and



It is essential to ask ourselves how young people learn, what interests them and how they position themselves regarding the potential risks they may be exposed to at work.

One of the key issues to consider is the relationship of young people with risks.

work, including caring for oneself and others. Within this framework, young people can be very open to integrating new behaviours, provided that the environment (training and work) promotes these behaviours through strategies that arouse their interest, move them and gives them sense and meaning.

For real attitudinal change to take place and for new forms of action to be integrated, young people must first understand the importance of care and, following Edgar Morin, understanding is a process that involves going beyond information, it refers to identifying with others and empathy.

“Human understanding is beyond explanation. Explanation is adequate for objective or intellectual comprehension of anonymous or material things. It is inadequate for human understanding.

Human understanding implies subject to subject knowledge. If I see a child crying, I am not going to understand his tears by measuring their salt content but by finding my own childish distress deep inside, by identifying him with me and me with him. We do not only perceive others objectively, we perceive them as other subjects with whom we identify and whom we identify with ourselves, an ego alter that becomes an alter ego. Understanding necessarily includes a process of empathy, identification, and projection. Understanding, always intersubjective, demands an open heart, sympathy, generosity.”

Morin, E. (2007)

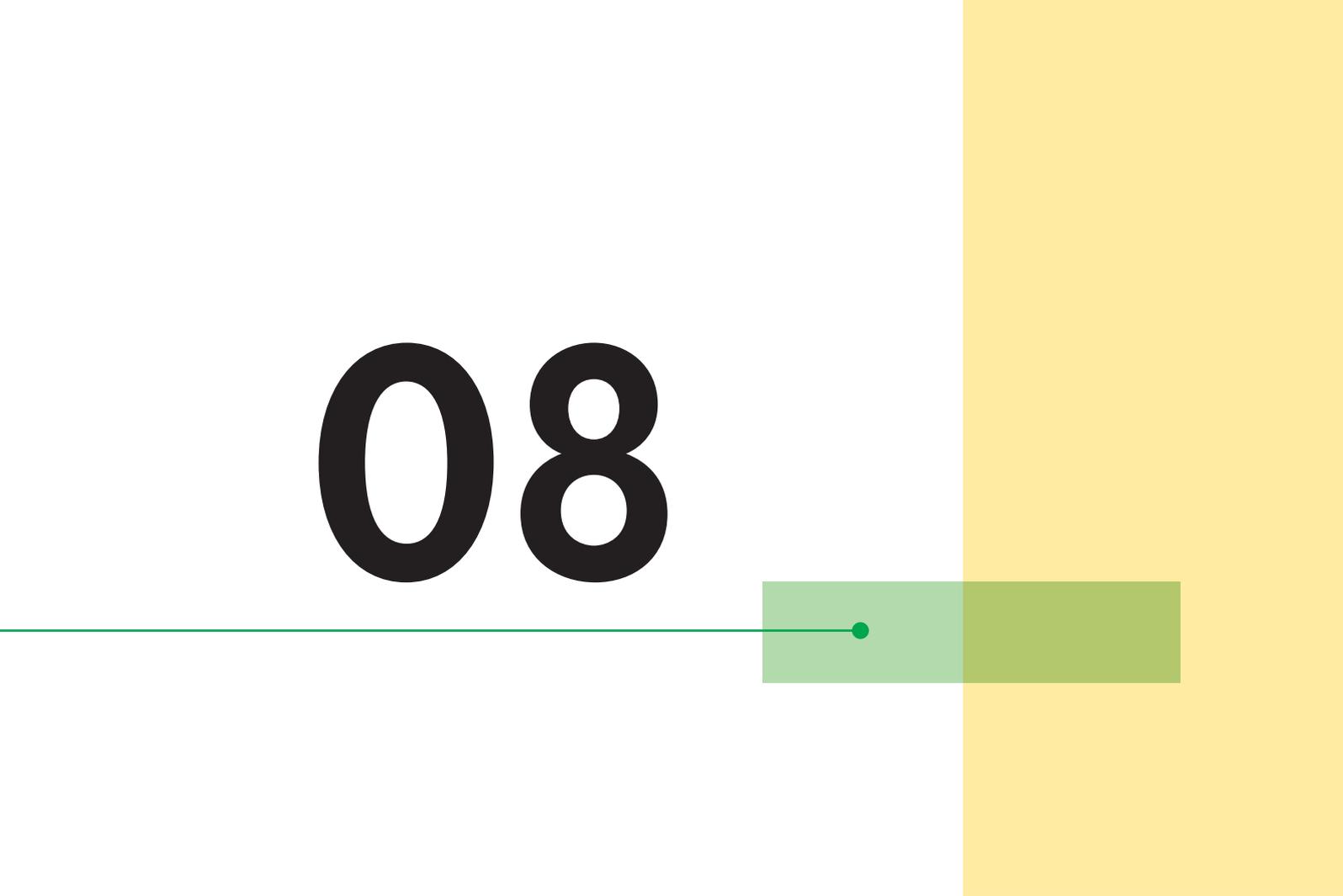
Learning processes are individual and group experiences, that depend on previous knowledge and the ability to relate new information to experience, the willingness to learn, and the young person’s perception of the value of what they learn and the interest they have in their work and life.

In this scenario, the curriculum must respond to the objectives to be defined, based on the development of OSH skills and also to the needs, emotions, perceptions and interests of young people in order to achieve meaningful learning opportunities that translate into safe and healthy work behaviours.



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08



Mainstreaming:
Good practices and
lessons learned



Mainstreaming: Good practices and lessons learned

In order to mainstream OSH issues in learning processes this approach needs to be integrated into the organizational life of training institutions, in such a way that learners and educators work together to make the training institution a safe and healthy place to work and learn, through:

- education on risks and OSH management, for example, by having students participate in risk prevention and hazard identification;
- the promotion of dignity and respect for all, for example, with campaigns to promote equality at work and against mobbing;
- the concern about the environment, for example, about the responsible use of supplies, recycling and reusing.

The analysed experience shows the good practices and some lessons learned about the different aspects of the design and implementation of vocational training geared toward young people.

With regard to the occupational profile and graduate profile:

The occupational profile must be identified from



The risk prevention and OSH care approach needs to be integrated into the organizational life of training institutions, in such a way that students and teachers work together to make the training institution a safe and healthy place to work and learn.

the reality of the world of work, usually in consultation with social partners (employers and workers and their organizations) and it includes skills that are key to the professional performance. Experience shows, however, that actors in the world of work do not always mention OSH skills or environmental care skills spontaneously among the required skills.

OSH skills must be explicitly included in the occupational profile, not only as an implementation condition but as a capacity to be developed. In this way, OSH skills will be considered and duly hierarchized in the graduation profile and, consequently, addressed in the curriculum and evaluated.

In the specific case of the Associate degree we are analysing, it is worth mentioning that the graduation profile aims at a leader role of work teams. That said, for a technical expert to be a leader, promoter and multiplier of good OSH practices, it is essential to address a set of key transversal skills: assertive communication skills, people management, teamwork, leadership.

The mastery of technical skills is not sufficient to build these capacities, mainly in a young audience that possibly will have to lead teams of adult workers, with years of experience in the sector and deep rooted practices.

At the level of curriculum design:

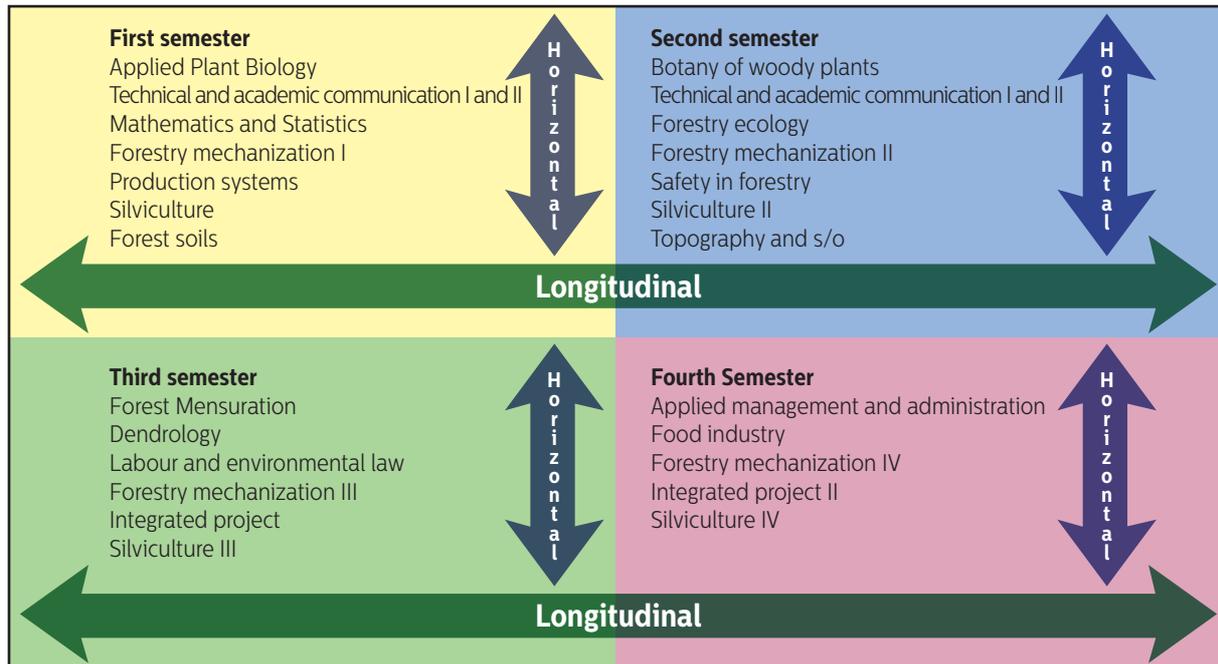
Mainstream OSH objectives and content in the design of the training programme. This mainstreaming is pursued in two directions: along (from start to finish) and across the programme (through the different subjects, with joint or coordinated projects and initiatives).

It is essential that OSH is addressed throughout the programme, from beginning to end, from a space specifically devoted to the topic, as well as in all the subjects (in the case of the analysed programme: *Safety in forestry* is a subject that is only present during the second semester with 32 course hours).

Currently, the curriculum has been distributed in the following way, the arrows depict the mainstreaming proposal both in longitudinal and vertical directions.



For a technical expert to be a leader, promoter and multiplier of good OSH practices, it is essential to address a set of key transversal skills: assertive communication skills, people management, teamwork, leadership.



As it has been mentioned before, mainstreaming challenges the fragmented and subject based approach, as it focuses on addressing learning processes in a coordinated manner, focusing on students' skills development versus each teacher developing content.

This implies working together, in a coordinated manner, so as to articulate the concepts addressed by the Safety specialist with the knowledge imparted by teachers in technical subjects.

Articulation entails the necessary contextualization of concepts regarding the work practices that are essential to understand them and for them to make sense.

Horizontal mainstreaming also implies, as far as possible, having shared work sessions (where the

specialist participates jointly with other teachers), providing ongoing feedback to participants while the work processes are addressed to work on the associated risks.

It is ideal to have more than one teacher in practical training sessions per class in order to ensure that each student is permanently aided and monitored. If there are two teachers, one can always pay attention to OSH aspects (anticipating risks and hazards, monitoring compliance with health and safety standards and measures, warning and teaching students, based on successes and errors). If this is not possible, it is essential to have a teacher specialized in safety taking part in some of the practical sessions so they can observe and provide feedback, complementing the session with their OSH perspective.

At methodology level:

For young participants, to be interested in learning and developing their OSH, it is advisable to apply active methods that are also attractive, hands-on and meaningful: instead of theoretical classes, implementing practical exercises, watching videos, conducting drills, learning visits, testimonials and internships.

Reviewing OSH concepts routinely at the start of each practical activity, or implementing safety checklists, sends a powerful message regarding its importance in everyday practices.

It is also key to make participants responsible for their own care and that of the team (colleagues) in OSH matters, and to train them in risk detection and the integration of safe and healthy work practices.

For example, activities can be implemented in groups aimed at identifying risks and developing proposals for improvement in real settings, such as:

- going on tours, examining the conditions of the workplace in order to verify that they comply with the relevant regulations, documenting practices and making proposals,
- during performance, conducting a peer review and giving feedback to peers,



For young participants, to be interested in learning and developing their OSH, it is advisable to apply active methods that are also attractive, hands-on and meaningful.

- preparing a brief talk or presentation on risks before starting work on a particular process⁴,
- designing and making posters to illustrate risks or exemplify incorrect vs. good practices,
- playing (and recording with photos or videos) role-playing games simulating accidents and making appropriate interventions (e.g. falls, fires, etc.),
- making videos or presentations to explain and train work teams (peers in this case) on the use of equipment or safe practices, among others.

The teaching staff

Training centres must take occupational risk prevention as a major part of comprehensive students training and, thus, must bear in mind

⁴ See the SENATI example on distraction.

that for this to be possible, trainers must be aware of and properly trained in OSH.

In a similar vein, both inspectors and school directors must also be trained and committed to the topic, including mainstreaming OSH into their practices and into the criteria used to assess teacher performance.

As mentioned above, mainstreaming requires trainers to work as a team to address OSH issues together, from different perspectives, in a coordinated and articulated manner.

This implies providing spaces and times for teachers to coordinate their work, as well as promoting a culture of collaborative work, focused on the needs of participants and not on the logics of each subject or specialty.

Faced with the need for regular coordination, it is often argued that teachers do not have paid hours for this, but in fact there are paid coordination hours that are often used to harmonize operational aspects, and it would be important for teachers to focus on this type of collaborative work.

Working as a team entails considering the need to view learners from a holistic perspective, paying attention to what happens to them. In learning processes, and especially regarding OSH, emotional state strongly influences the lack of attention to potential risks. It is essential to timely detect anything that may be interfering with concentration and care practices in students, which requires a holistic approach.

In practices and/or internships at enterprises

In the training proposals that include practices, internships in workplaces, alternation modalities or dual training, trainers must be instructed before-hand to make sure they are aware of their responsibility in the occupational risk prevention among the young participants they are tutoring.

For this, trainers must also be trained in occupational risk prevention and prepared to carry out adequate supervision, observing, assessing and evaluating the safety of young people's practices.

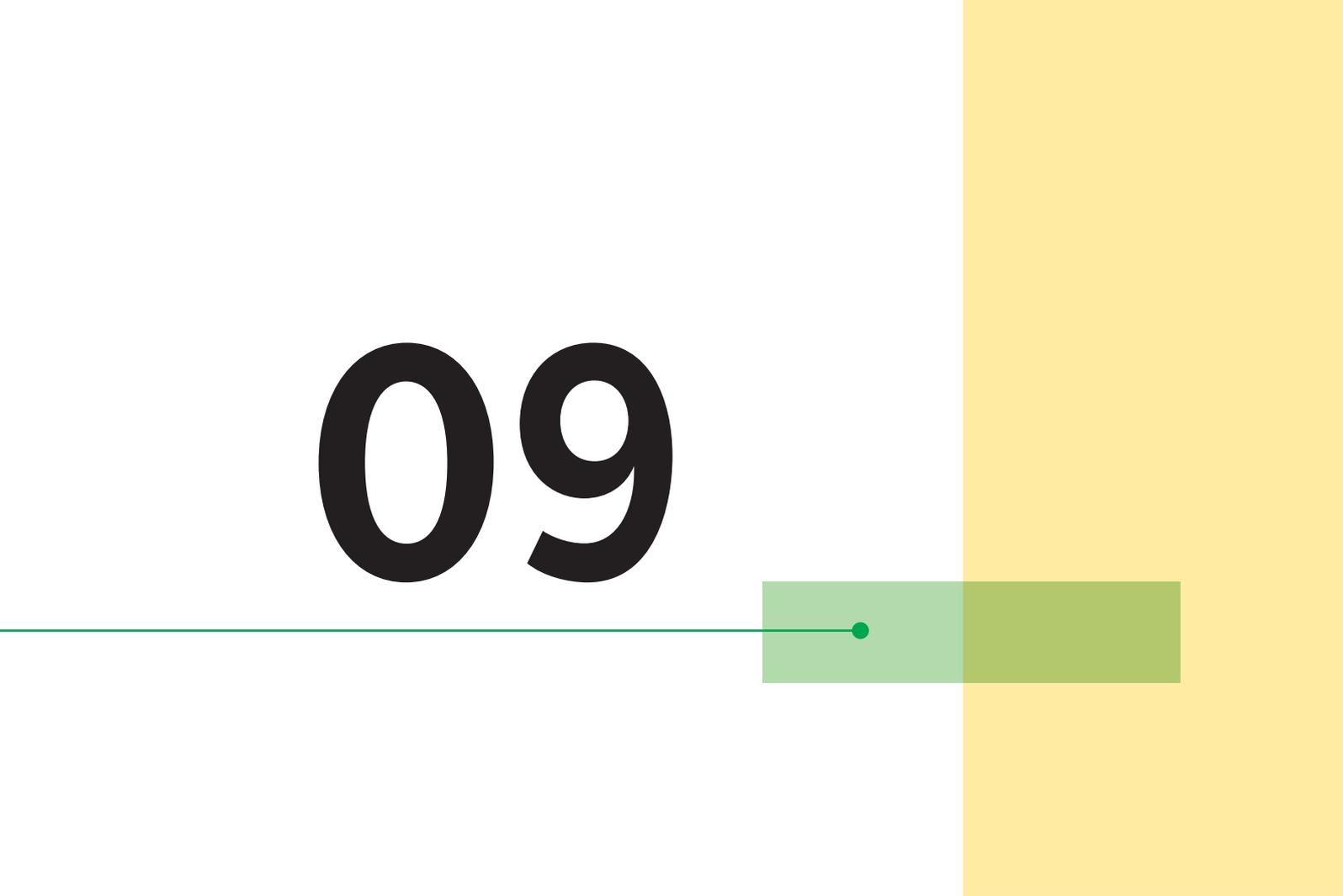


Training centres must take occupational risk prevention as a major part of comprehensive students training and, thus, must bear in mind that for this to be possible, trainers must be aware of and properly trained in OSH.

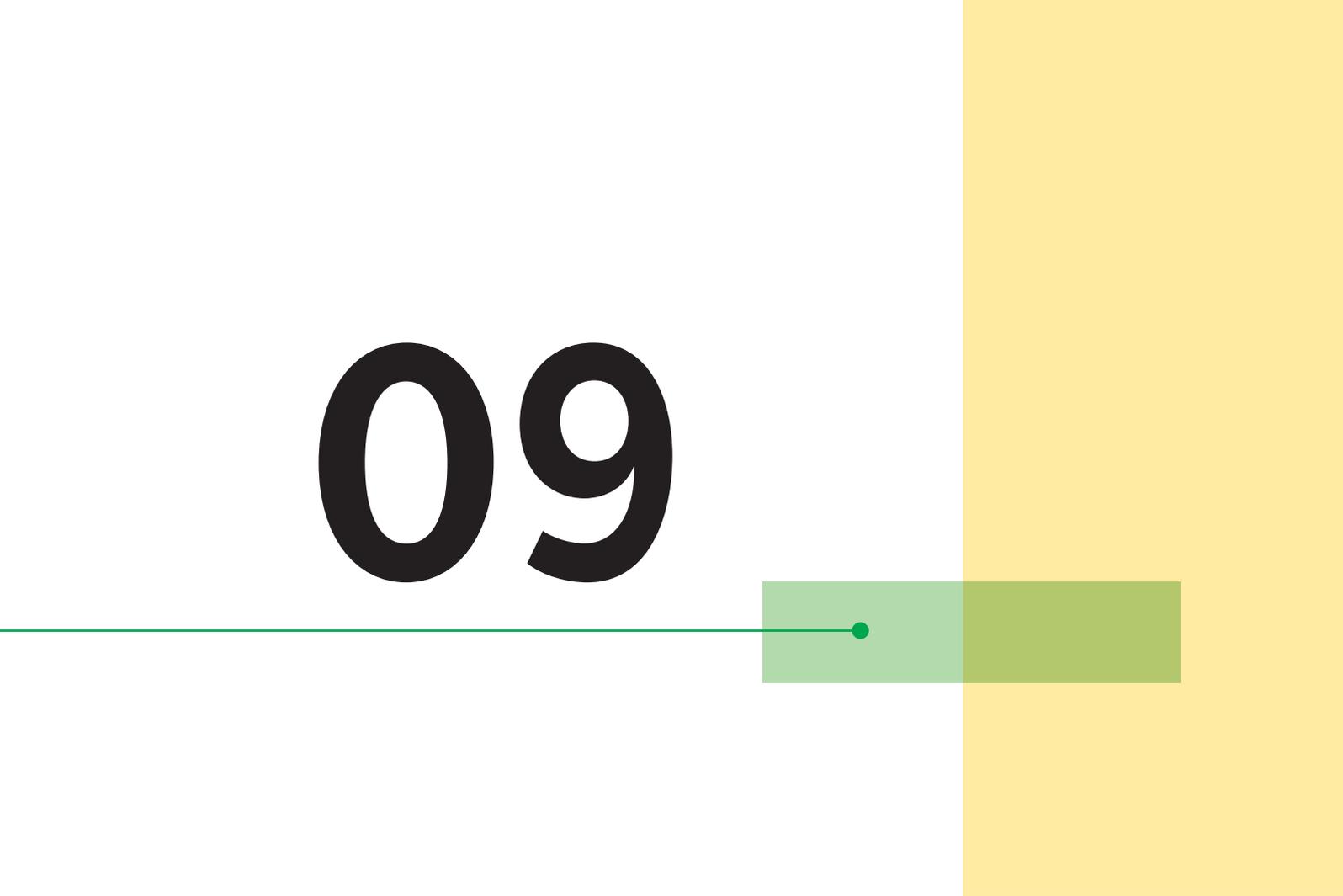


Working as a team entails considering the need to view learners from a holistic perspective, paying attention to what happens to them. In learning processes, and especially regarding OSH, emotional state strongly influences the lack of attention to potential risks.

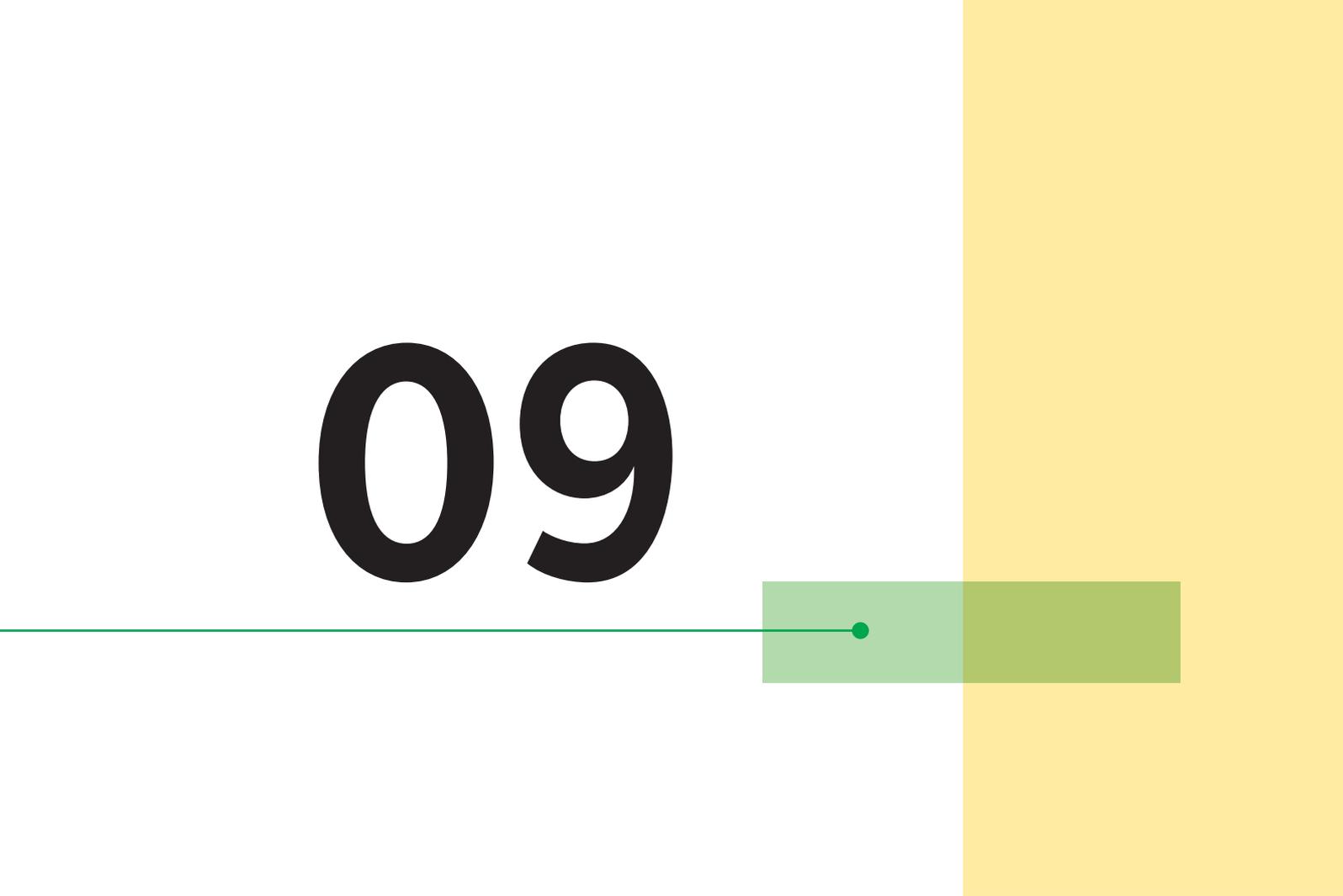




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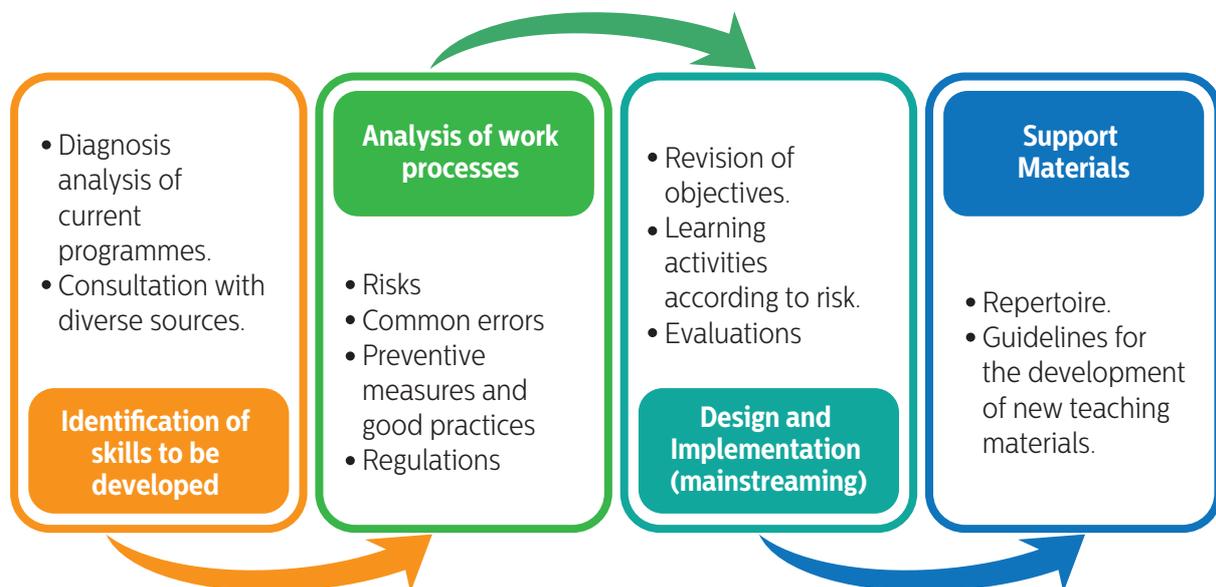


Methodological
sequence for
mainstreaming OSH



Methodological sequence for mainstreaming OSH

We propose the following methodological sequence for mainstreaming OSH into the design, planning and implementation of training processes



1. The first step in defining effective training (and mainstreaming) strategies for OSH is to **identify and formulate the skills** students need to develop, based on the occupational profile(s) targeted by the Training Programme. In the case of the associate degree in forestry and wood production, the skills to be developed by participants were defined based on the type of roles they would take up when graduating (level and contents of occupations) and the scope of the training proposal. According to the information provided by the institutional leaders based on the graduate profile and the employment opportunities in the country, graduates could serve as responsible/leaders of working teams at different kinds of organizations, in general, contractors and, mainly, in the field.
2. As a second step, an in-depth **analysis of the OSH aspects connected to each of the work processes** and stages in which the activity of the forestry and wood production sector is structured, and which are addressed in the training programme, is proposed. This analysis will help identify the risk factors present, preventive measures and regulations, the most common errors and, essentially, the tasks which the work team leader should be able to carry out as part of their role managing and multiplying good practices in OSH.



To define effective training (and mainstreaming) strategies for OSH it is necessary to identify and formulate the skills students need to develop, based on the occupational profile(s) targeted by the Training Programme.

3. The third step involves **analysing the available curriculum design** for mainstreaming OSH⁵:
 - the specific objectives are revised, introducing OSH care explicitly,
 - the learning activities, based on the previous analysis, are determined,
 - strategies and guidelines for evaluation are identified according to the achievement criteria established in the OSH skills.

This stage of the analysis should be performed together with the team of teachers at two moments, considering two perspectives: i) for the programme as a whole (the four semesters) so as to ensure a comprehensive approach focused on the progressive development of skills and ii) for each semester in order to determine

⁵ It is worth mentioning that in the framework of this study, the analysis and proposals are made taking the existing curriculum as a reference and, therefore, only suggestions about mainstreaming OSH are made, without considering other aspects of the curriculum.



This analysis of the OSH aspects connected to each of the work processes and stages that structure the forestry and wood production sector will help identify the risk factors present, preventive measures and regulations, the most common errors and, essentially, the tasks which the work team leader should be able to carry out as part of their role managing and multiplying good practices in OSH.

the interventions that can be coordinated and worked transversely by teachers who intervene simultaneously in each semester.

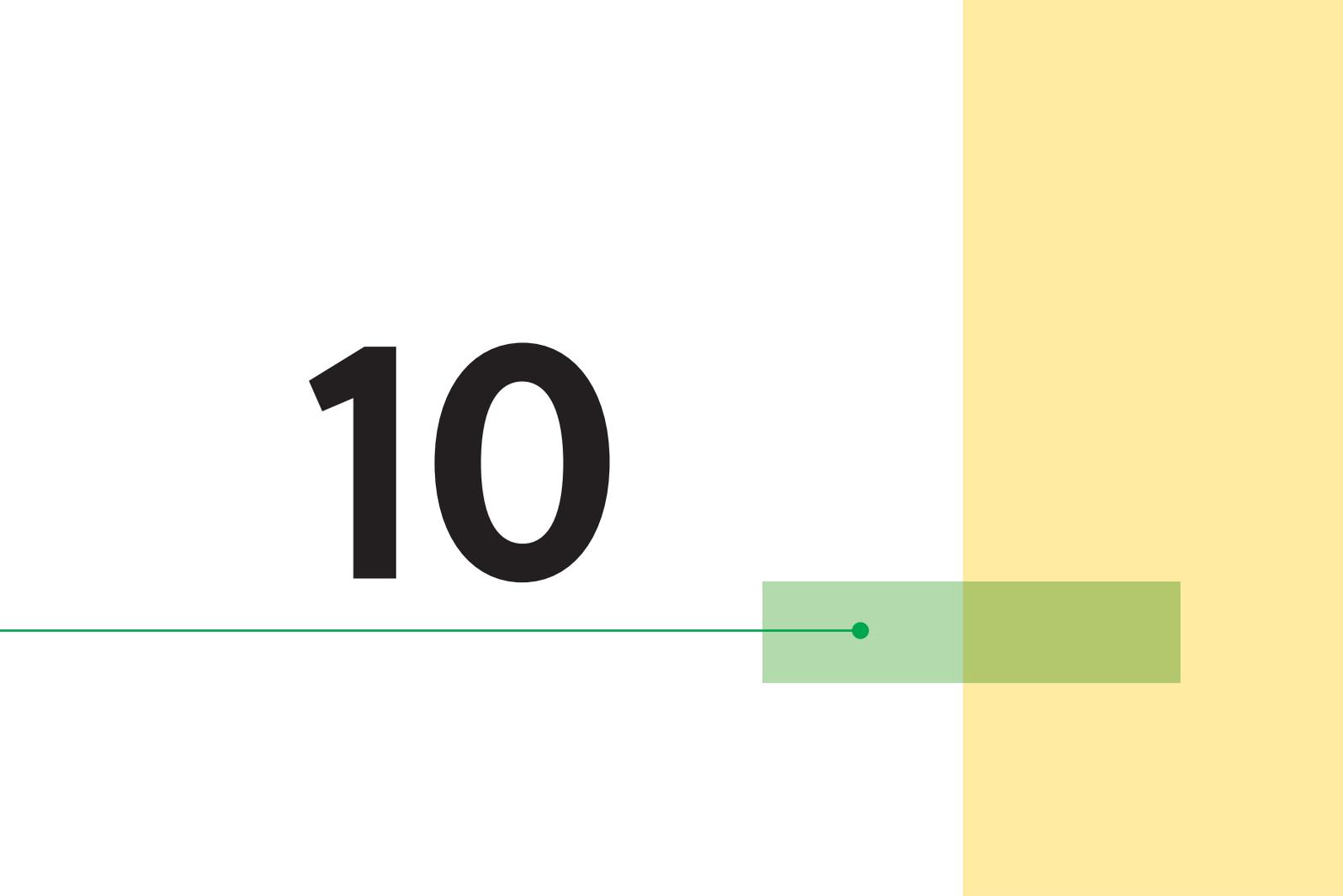
4. Finally, an attractive and relevant **set of training and support materials** is fundamental to accompany and facilitate skills development. In this case, and as a contribution to start a repository of materials for forestry and wood production teachers, a preliminary list of teaching materials (including bibliography, videos, etc.) on OSH is included in section 15 (that could be enhanced by the advisers and teachers).

Below, (sections 10, 11 and 12) show examples of the four mentioned stages.



An attractive and relevant set of training and support materials is fundamental to accompany and facilitate OSH skills development.

10



Which OSH skills
should young
people develop?



Which OSH skills should young people develop?

According to UTU's institutional documents, the skills acquired during the degree will enable the graduate to:

*“Perform at a **“middle management”** role, at public or private enterprises, either productive, services and/or environmental undertakings, with a high sense of responsibility and initiative, capacity to lead and make decisions.*

*Know and monitor, both ethically and professionally, the management tasks of forest nurseries, seedling production, forest planting and after-planting care, forest management, measurement and harvesting of forests, ensuring that it is done with quality and **as safely for workers and** the environment as possible.*

Manipulate and maintain the different equipment, machines and tools to perform forestry tasks.

Run productive development plans and take part in the development of application of new technologies and research related to the scope of action, contributing to the drafting of

technical documents connected to the field.

Take part in conservation projects and preservation of the environment and forests of the region. Have an adequate rapport both to interact with senior management and his/her staff.

Be able to observe problems and suggest possible solutions to work teams with a proactive attitude to improve processes. Choose and apply comprehensive methods of pest, disease and weed control.

Be very familiarized with technical and legal aspects of the field.” (UTU, Educational planning).

As it has already been mentioned, the graduate profile aims at “middle management” roles, that is, someone able to lead and manage work teams, which seem to match the needs of the productive

sector in the area.

Based on these definitions and the information collected through consultations held with teachers, young people, institution officials and leaders in the sector, OSH skills must be geared toward:

- managing the risks to health and safety,
- complying and enforcing the regulations by the team and the enterprise, and
- promoting safe and healthy work in the work teams.

OSH skills to be developed by students of the associate degree in forestry and wood production

Skill	Key activities	Achievement criteria
Managing risks to OSH in work teams	Identifying hazards and assessing risks for members of the team	<ul style="list-style-type: none"> • Identifies the risks to safety and health in each work process and the possible consequences of an accident according to the risk. • Identifies the worker's and the enterprise's rights and duties in the field of OSH.
	Preventing risks, implementing the necessary preventive, corrective and improvement measures.	<ul style="list-style-type: none"> • Assesses risks. • Plans and organizes routine or non-routine team activities preventing risks. • Proposes and implements preventive and control measures based on the identification of hazards and the assessment of risks.
	Communicating to the team information on hazards, risks, control and prevention of accidents and occupational diseases.	<ul style="list-style-type: none"> • Assertively communicates to the team all the necessary information on measures, regulations, procedures and roles regarding OSH. • Explains to the team general and specific information on the identification and control risks, and the prevention of occupational accidents and diseases.
Ensuring compliance with OSH measures and regulations by team members.	Monitoring compliance with preventive measures and OSH regulations by team members.	<ul style="list-style-type: none"> • Controls the application of safe work techniques and the use of tools, PPE, clothing and machinery in safe conditions. • Supervises the order, hygiene and safety conditions in the work space.
	Ensuring compliance with preventive measures and OSH regulations by the company.	<ul style="list-style-type: none"> • Inspects facilities, machinery and equipment, and takes corrective measures or suggests them to the responsible persons. • Ensures the enterprise meets OSH regulations. • Ensures compliance with the established OSH prevention procedures.
Promoting safe and healthy work among team members.	Training workers on OSH.	<ul style="list-style-type: none"> • Carries out the induction and provides formal or informal training on OSH and basic first aid to team members. • Provides feedback on OSH performance to team members. • Supervises/when appropriate corrects the actions of team members to prevent accidents.
	Promoting the improvement in OSH organizational practices.	<ul style="list-style-type: none"> • Makes suggestions for improvements observing the hierarchical structure of the organization where they work. • Promotes exchanges, collective reflections and proactive attitudes regarding OSH in the team.
Timely intervening in situations of risk or accident.	Disseminating information to the team so they can respond in the event of accidents.	<ul style="list-style-type: none"> • Keeps the information up-to-date and available. • Provides instructions, manuals, etc. on OSH.
	Acting in a timely and correct manner in case of an accident.	<ul style="list-style-type: none"> • Complies in due time and form with established procedures in case of an accident. • Participates in the investigation of incidents, accidents and/or occupational diseases.

11

Analysis of
work processes

Analysis of work processes

Identifying the existing risks for each work process, the preventive measures that must be implemented as well as the most common errors is the starting point for **contextualizing the skills and identifying the learning situations** that enable working on OSH skills.

Relevant information is organized and presented for the purpose of having both:

- Input for the team of teachers to analyse as a basis for the joint and/or individual planning of specific training activities and teaching materials for mainstreaming OSH.
- Reference materials for the students.

The chart below shows, by way of example, **the systematized information per process**. The chart is not meant to be complete, it is just an example and its purpose is to display the information to be used by teachers and students in an orderly and organized manner.

Indeed, this example only discusses some risk factors for each process, therefore, in order to be a valid tool, it must be completed with the help of the institutions advisers for the forestry sector and validated with leaders from this productive sector (employers and workers) and OSH specialists.

This example is based on the review of documentation at the national and international level, and the interviews and workshops carried out.

It is important to note that because this is a very dynamic sector, in which new technology is continuously being introduced, this systematization should be revised periodically so that it can be kept up-to-date.

11.1 Forestry work processes

Forestry work processes in commercial production systems⁶ can be summarized into six:



The chart that comes next follows the following format:

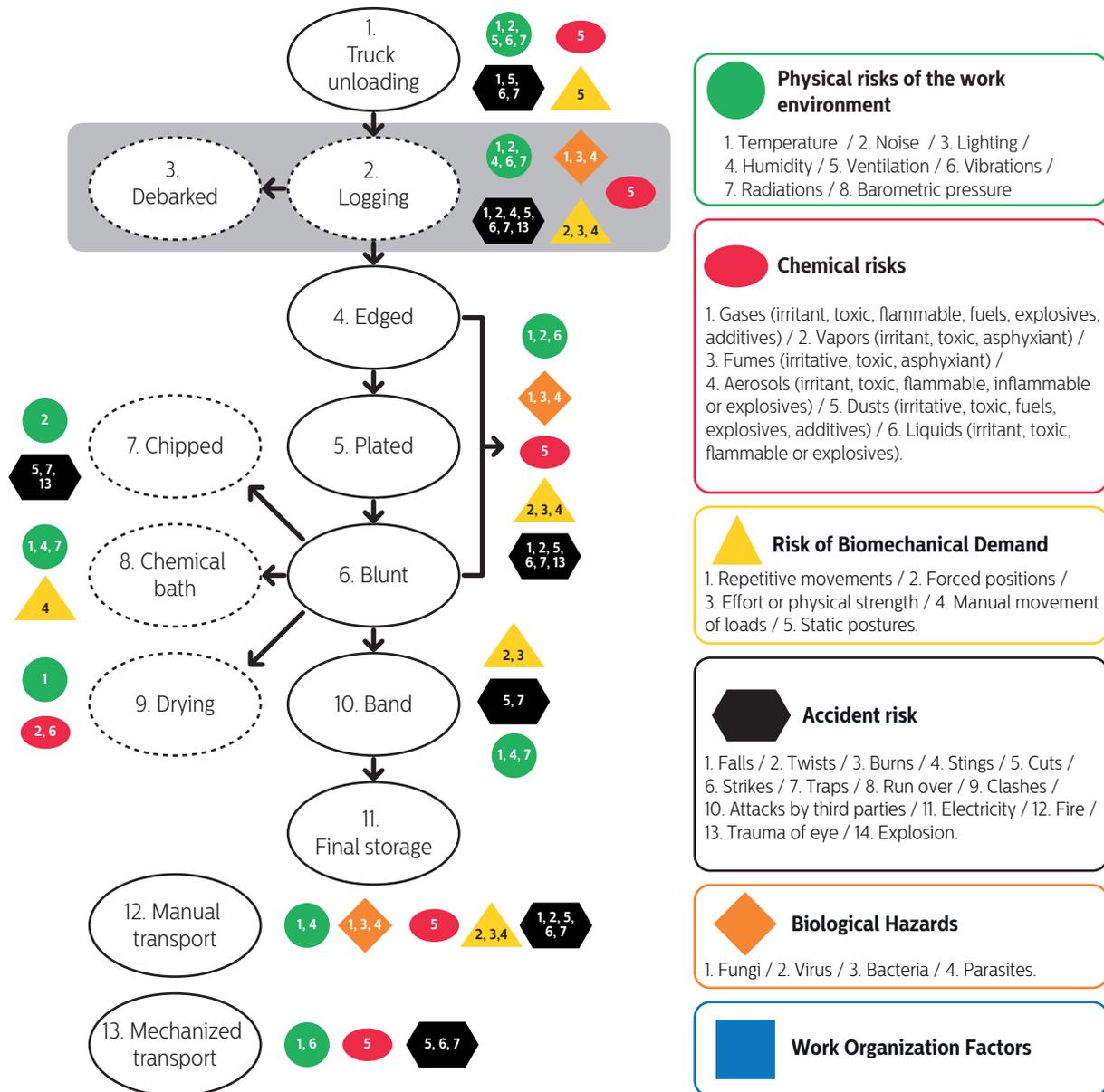
Nurseries			
Risk factors	Preventive measures	Common errors and accidents	Regulations
Planting of forests			
Pruning and thinning			
Harvest			
Wood transport			

⁶ There are other areas (environment, management and conservation of native forests, technical support services) which, even though they can be marginal, are included in the graduate profile of the degree.

11.2 Examples

Work process: Nurseries and seedling production			
Risk factors	Preventive measures	Common errors and accidents	Safety standard or procedure
<ul style="list-style-type: none"> Exposure to agrochemicals 	<ul style="list-style-type: none"> Wearing personal protective equipment that matches the requirements in the identification label of the product. Following the waiting periods recommended by the manufacturer of the chemical used before entering the treated area. Warning workers carrying out activities in the area to wait. Never eating or drinking anything, or smoking, during and after handling these products. Storing chemicals in facilities specifically designated for such 	<ul style="list-style-type: none"> Incorrect handling of agrochemicals. Chemical spills. Drinking, eating or smoking before removing personal protective equipment or before washing hands and face. 	<p>Decree 372/99 Art. 74 "Workers shall wear the following protection equipment in nurseries (7.4.1.): rubber boots or shoes, gloves, hat or visor and waterproof clothing as appropriate according to the season and weather conditions."</p> <p>Decree 372/99 Art. 78 "All containers with chemicals must be identified and marked with a label, and employers shall be responsible for ensuring that said information remains on the container."</p> <p>Decree 372/99 Art. 84 "Employers must provide appropriate above the shoulders head protection, as well as face protection including respiratory and eye protection, by providing a mask with a filter that is appropriate for the substance used."</p>

There follows, also by way of example, another way to illustrate risk factors per process that is usually very clear (mainly as support material for students).⁷



⁷ SRT; MTEySS (2014). Manual de buenas prácticas industria maderera. Argentina: SRT / MTEySS. Disponible en: <https://www.srt.gob.ar/index.php/micrositio-prevencion/micrositio-manuales/>

11.3 To be taken into account for all work processes

Internationally, forestry is considered among the most dangerous in the world.⁸ In Uruguay, however, the sector has low accident rates.

In this regard, even though all the industry leaders interviewed claim safety and hygiene conditions and, in general, working conditions in forest enterprises have improved substantially in recent years, it is a very physically demanding occupation with exposure to weather conditions and in which workers can spend long periods of time away from their place of residence, all factors which can affect the health of workers.

Lower limb trauma injuries are the most frequent injuries in forestry, while alterations in upper limbs are the most common injuries in timber extraction. The trend shows that the most frequent case of accidents is “falling objects during manual handling” for both activities, which cause bruises and cuts according to the tools used. In addition, in forestry, injuries to the eyes and lumbosacral region tend to be twice as common as in other activities.

Occupational Hazard Supervisory Authority (SRT), Manual de buenas prácticas de la actividad forestal, Argentina, 2017

⁸ ILO (1998), The ILO Encyclopaedia of Occupational Health and Safety, Forestry.

In general, for all the work processes of the forestry sector, it is important to consider the pace of work, the pressure for achieving production goals and physical demands as well as the family and social uprooting that this type of work may cause. Moreover, on specific occasions, the pressure the demands, deadlines and tasks to be performed place on workers can result in a certain degree of stress.

Work-related stress can cause momentary distraction, errors of judgement, or failure in the performance of normal activities, increasing the risk of workplace accidents. It can contribute to the development of mental disorders (burnout and depression) and other physical problems (cardiovascular diseases and musculoskeletal disorders), as well as negative coping behaviours (alcohol abuse or smoking). Consequently, stress results in a deterioration of well-being and quality of life for workers (ILO, 2016).

Because young people continue to develop into their mid-twenties, mentally, emotionally and socially, their exposure to psychosocial hazards can be especially harmful.⁹



In general, work-related stress can cause momentary distraction, errors of judgement, or failure in the performance of normal activities, increasing the risk of workplace accidents at all the work processes of this sector.

Planning work as much as possible before starting is recommended in order to mitigate these situations.

On the other hand, awkward postures and/or constrained postures during the course of the working day lead to many musculoskeletal problems.

Whenever possible, the tasks to be performed should be rotated in order to prevent problems. This is a recommendation that technicians should endorse, not only to take care of themselves but also to organize the work of their teams.

⁹ ILO. 2018. Improving the Safety and Health of Young Workers. Geneva: ILO

It is important to have rest periods during the training process, and for students to understand its relevance and how they should be used. Trainers must explain that rest periods should be used to relax tired muscles, to perform certain movements when muscles are stiff, to walk when the workspace restricts the worker's ability to change postures, etc.

It is also important for young people to know that they should report illnesses or discomforts experienced during work, so that working conditions can be improved and corrected.

Even though the actions of apprentices must be continuously monitored by trainers during the learning process and, afterwards, during

the exercise of their occupation by supervisors, so that they may, based on their experience and caution, avoid and prevent occupational accidents when possible, it is essential for young people to be aware of the relevance of the care of OSH for them to act constantly avoiding risks.

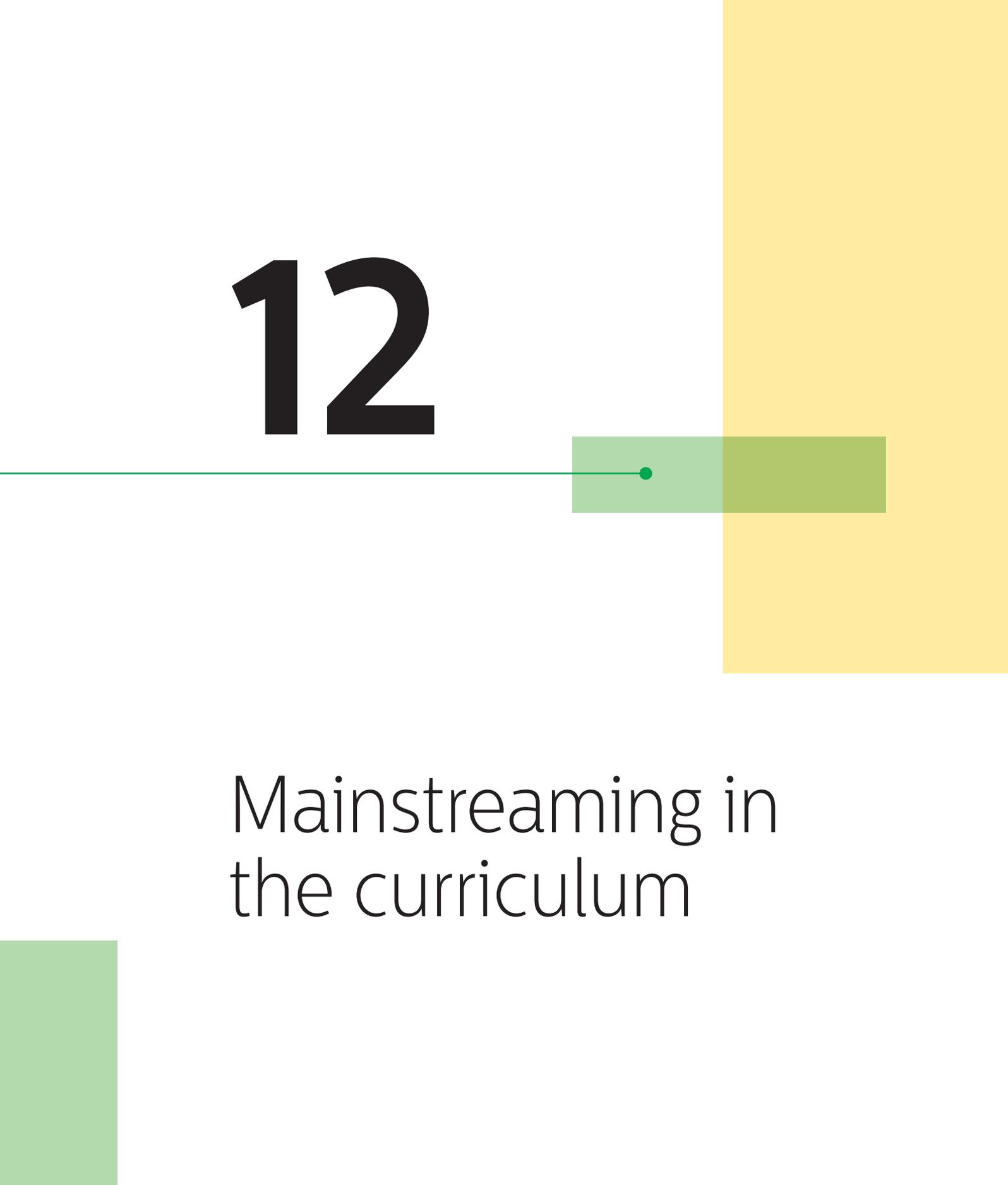
In this regard, it is important to train students not only to take care of themselves but to take OSH into account in the organization of team work since certain forms of hiring (piece-work, subcontracting), that lead to increasing the pace, sacrificing rest and working long hours, are often common in this sector. The resulting fatigue has a direct impact on the occurrence of accidents and diseases.



Awkward postures and/or constrained postures during the course of the working day lead to many musculoskeletal problems.

It is important to have rest periods during the training process, and for participants to understand its relevance and how they should be used.

12



Mainstreaming in
the curriculum

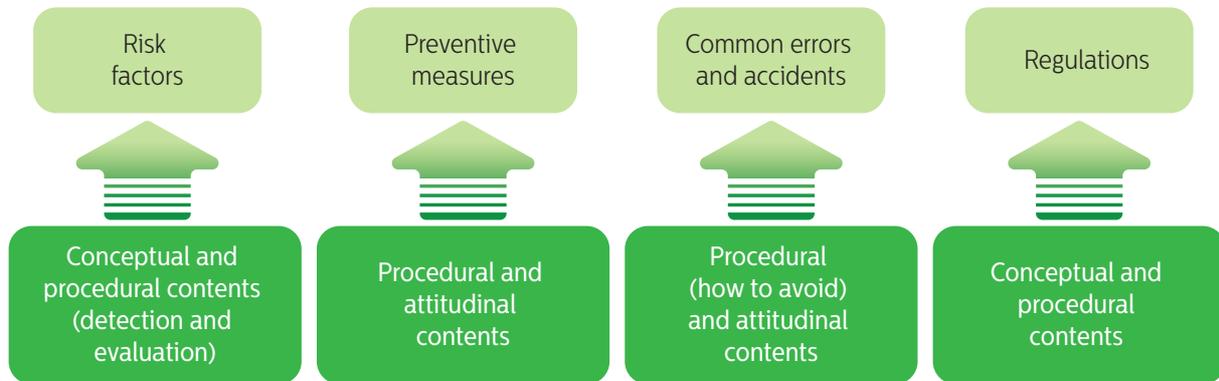
Mainstreaming in the curriculum

The systematization of risk factors, preventive measures, errors and regulations is essential for teachers to know all the information about OSH they need to consider in order to work on the issue, both in each specialty and in joint projects.

Each of these aspects will help focus the development of the OSH skills to be acquired, for instance:



As for the approach to teaching each of these aspects, below is a list, not meant to be complete, of some of the main contents derived from each of them:



Regarding mainstreaming in the curriculum¹⁰, it is suggested: that:

1. Each teacher, within their specialty, carries out an initial analysis of the curriculum, **identifying opportunities for including OSH** in each learning unit, always taking into account the skills to be developed and the productive processes connected to the subject.
2. As a whole and, as far as possible, with the support and guidance of the Forestry Safety teacher and/or advisers of the topic, **OSH objectives and contents that can be worked on jointly** are analysed in a coordinated manner. This can be carried out as a group project or as coordinated activities during the semester in two or three subjects in sync.

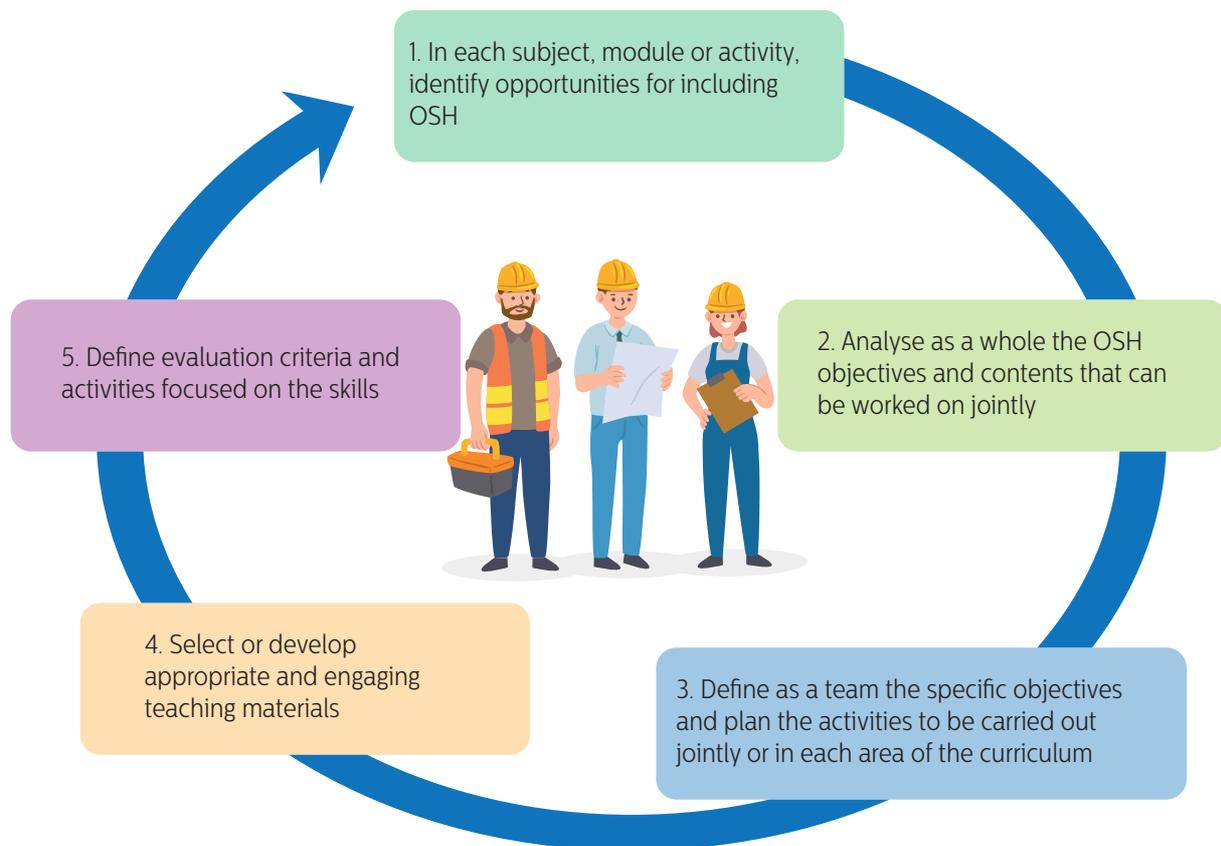
3. For each collaborative work project on OSH, that **the collective definition of the specific objectives and the planning of the activities** is carried out jointly or in each area of the curriculum taking into account the suggested selection criteria (activities that are meaningful and connected to the future occupation, with an active role of students, consistent with the skills to be developed,



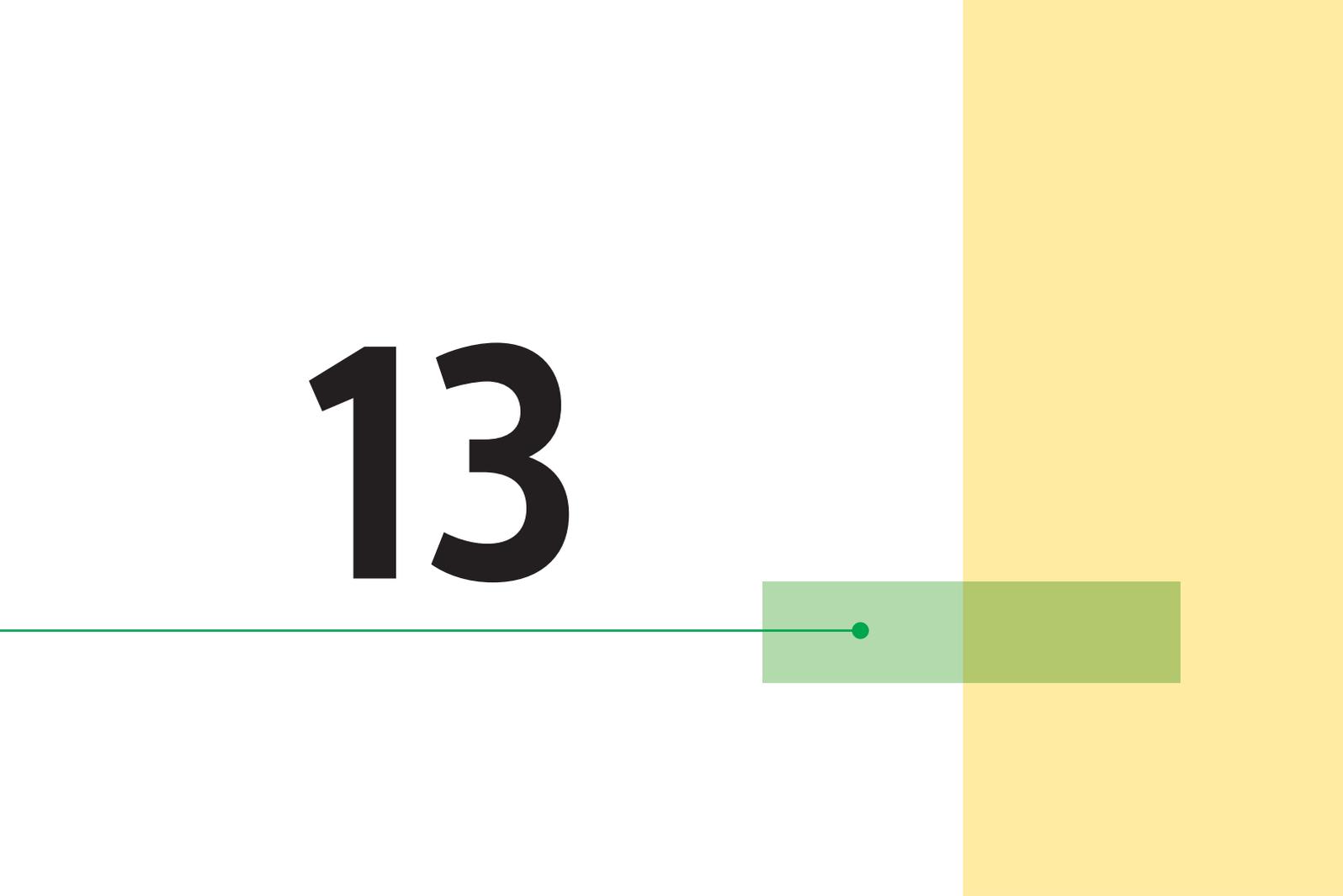
¹⁰ It must be noted that we refer here to mainstreaming by teachers under current conditions, within the curricular framework defined by Educational Planning and the existing subjects and course load.

tailored to a young audience and its interests, that facilitate the development of key transversal skills such as communication, leadership, teamwork, etc.). Below, by way of example, we suggest a list of appropriate activities related to the different types of risk.

4. **Select or develop** appropriate and engaging **teaching materials**. Also as an example and to aid on the search for support materials, a preliminary Repository is presented in section 15.
5. **Evaluation criteria and activities focused on the skills** and the corresponding achievement criteria are defined. The importance of evaluating fundamentally the incorporation of safe and healthy behaviours in the work practice in the centre should be considered.



13



Examples of
learning activities
according to the
type of risk



Examples of learning activities according to the type of risk

A series of activities, which can be implemented for working on identifying risks and preventive measures both in the entire set of processes, or for each type of risk, has been identified for the purpose of making the mainstreaming of OSH in planning easier.

Risk analysis and preventive measures for each work process:

The following activities can be done to analyse each work process (nurseries, seedling production, forest planting, pruning and thinning, harvesting, transportation, industrialization) according to the types of risk and errors that frequently occur in the forestry sector:

- Interviews with OSH specialists or interventions from students pursuing said qualification.
- Case studies.
- Educational visits to enterprises with guided tours.
- Projects on preventive measures for a nursery, forest, etc.
- Research project on the accident rates in sector enterprises in



the area (surveys to entrepreneurs, workers).

- Research on the accident rates in the sector, according to available data from the National Insurance Bank (BSE).
- Development of OSH rules in average premises.
- Preparation of awareness materials on risks, preventive measures (posters, leaflets, videos, PowerPoint presentations, etc.).
- Work camps (in the context of real or simulated work).
- Organization of a competition on OSH good practices at the training Centre.

Falls:

- Analysis and discussion based on videos, photos. Reflection based on observations (events that take place and cause accidents in the workplace, what should they do to avoid said risk, what are the consequences of their actions).
- Interviews to specialist doctors (for example, from the National Insurance Bank, BSE).

Cuts:

- Practical lessons on the use of all kinds of chainsaws, sharpening, handling and prevention recommendations for handling.
- Videos.

Overexertion/load lifting:

- Role-play.





- Instructional videos.
- Load lifting exercises at the Technological Pole premises.

Risks resulting from the use of chemicals:

- Application practices.
- Reading and analysis of product labels. Awareness.
- Observation of photos with skin injuries, poisoning, etc.

Risk of injuries for not wearing PPE:

- Observation of photos, videos.
- Interviews or statements from injured workers.
- Practices using PPE (including heavy clothing).

Fire:

- Practical training on the handling and use of portable fire extinguishers.
- Review of escape routes and exits, as well as signage and access to extinguishers, hydrants, etc.
- Evacuation drills.

First aid training:

- For each type of risk, discuss with students the reaction or procedure they should follow in case of accident or emergency. For example, what to do in case of a cut, or a fall, or a snake bite. The trainer teaches how to help someone in case of an accident.
- Reading and discussion of information leaflets about the regulatory framework and where to turn to in case of accident.

- Drills, role-play and gaming activities that encourage learning “what to do in case of”.

Occupational health, food and living conditions:

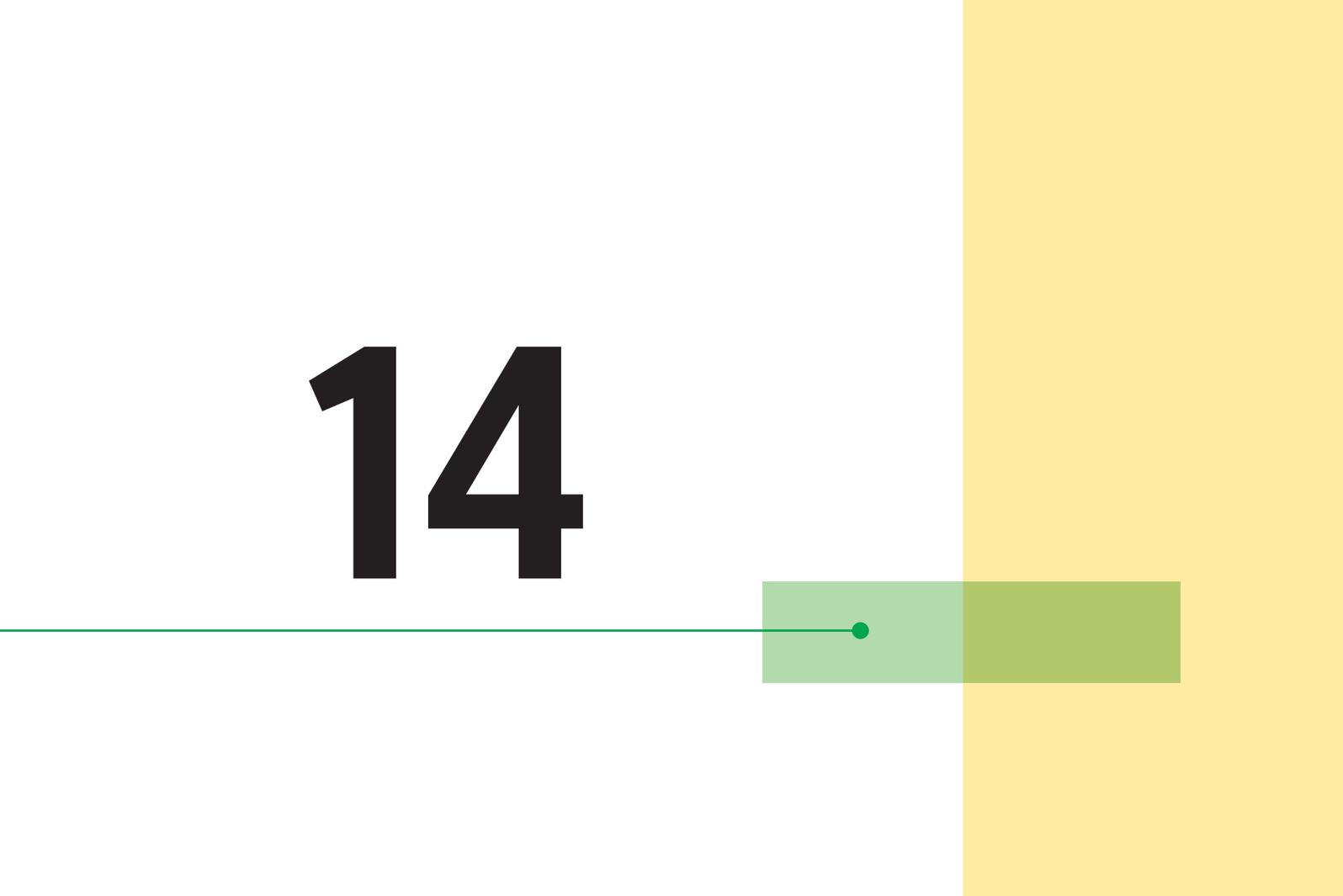
- Group reflection on physical care, understanding one’s strengths, analysis of how weather conditions affect the health of people in summer or winter.
- Interviews with sector workers.

Electrical risks:

- Analysis of videos.
- Visits to industries.
- Training by experts tailored to young people.



14



Repository of
support materials
for including OSH
in training



Repository of support materials for including OSH in training

Teaching materials could be any kind of device designed and made for the purpose of facilitating the learning process.

They are the resources teachers can rely on to facilitate and guide the learning process of participants (books, posters, maps, photos, prints, videos, software, texts, content handbooks, handbook of learning activities, etc.).

Teachers identify and prepare teaching materials to plan their courses, as vehicles and support for facilitating the development of skills by participants.

For teaching materials to be effective and foster a successful learning setting, they must take into account:

- The skills to be developed.
- The problem situations in the professional

environment that need to be solved.

- The contents (conceptual, procedural, attitudinal) that will be covered using the materials.
- The characteristics and interests of participants.
- The characteristics of the context (physical and curricular in which the teaching takes place, and where we plan on using the teaching material selected).
- The teaching strategies in which the materials can be introduced.

The materials to be used with students will always

be selected based on the context, within the design of a specific educational intervention, considering all of these aspects and taking into account the specific elements of the curriculum that are involved. A careful revision of the possible ways in which the material can be used will help design effective learning activities and teaching methodologies that will ensure the planned lessons are learned.

Based on the interviews carried out with the persons in charge and trainers of the course and the observations made by participants, it can be concluded that the materials should include a significant amount of pictures, photos and, in general, be aesthetically appealing to young people. It has been found that one version of a material with too much text makes students lose their focus, while a different version of the same material with pictures and photos makes comprehension easier. This shows materials must be clear, include figures and diagrams. The more pictures, the simpler and more understandable it is.

There are many support materials available for teachers to easily use. Below are some videos and publications to that effect.



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Videos about OSH in general

<p>Prevention of accidents</p>	<p>Riesgos laborales, cosa de dos. Available at: https://www.youtube.com/watch?v=Q5TJwk10PB4 Length: 18:38 minutes</p> <p>Siembra seguridad. Prevención de riesgos laborales en la agricultura Available at: https://www.youtube.com/watch?v=XGjdWNc40QI Length: 9:58 minutes</p> <p>Risk prevention - No laughing matter Available at: https://www.youtube.com/watch?v=h8leJZsz-Sw Length: 8:38 minutes</p> <p>¡Cuidate! prevención de riesgos laborales en el trabajo Available at: https://www.youtube.com/watch?v=fj7e-uE_5NY Length: 10:35 minutes</p> <p>Campaña de Prevención de Riesgos Laborales de LafargeHolcim Available at: https://www.youtube.com/watch?v=VDhydb-1UsQ Length: 5:49 minutes</p>
<p>Stress Management</p>	<p>Campaña de Prevención de Riesgos Laborales de LafargeHolcim Available at: https://www.youtube.com/watch?v=VDhydb-1UsQ Length: 5:49 minutes</p> <p>Counter stress Available at: https://www.napofilm.net/en/napos-films/napo-when-stress-strikes/counter-stress Length: 0:49 minutes</p>

Forestry sector-related videos

<p>Prevention of accidents</p>	<p>Some advice from our forestry colleagues. Campaign launched by the Bureau of Occupational Safety and Health that works for multiple institutions linked to OSH in Chile. Available at: https://www.facebook.com/forestalesceroaccidente/videos/332781406913822/ Length: 1 minute</p> <p>Risk prevention in forest harvesting Available at: https://www.youtube.com/watch?v=WSPx5x50DWY Length: 23:35 minutes</p> <p>42 Excusas Típicas de Seguridad Video presented by the Joint Committee of the Remanufacturing Plant CMPC during the “5th Meeting of Joint Committees and the Department of Risk Prevention of the Forestry Pulp and Paper Sector”. Available at: https://www.youtube.com/watch?v=jXRHTgwK9H4 Length: 3:26 minutes</p> <p>Safety and health measures at work drill Available at: https://www.youtube.com/watch?v=do6_FKsK_Js Practical demonstration about the effectiveness of safety systems Length: 8:04 minutes</p> <p>Forestry zero-accident campaign Available at: https://www.youtube.com/watch?v=q7eRY3bAcOM Length: 4:30 minutes</p> <p>Video about safety for visits to Arauco Cholguan Sawmills Available at: https://www.youtube.com/watch?v=35JSksMTIVk Length: 4:40 minutes</p> <p>Risk prevention at sawmills Available at: https://www.youtube.com/watch?v=qH_xJ72hqjo Length: 16:58 minutes</p>
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<p>Exposure to agrochemicals</p>	<p>Napo video on hazardous substances 1 Available at: https://www.youtube.com/watch?v=5PrAybF5mJg Length: 7:22 minutes</p> <p>Simulator - management of hazardous substances https://www.youtube.com/watch?v=3cnxqbniul4 Length: 2:47 minutes</p>
<p>Repetitive movements Loading and unloading Ergonomics / Positional</p>	<p>Prevention of musculoskeletal disorders Available at: https://www.youtube.com/watch?v=djadHooEMrE Length: 1:20 minutes</p> <p>Ergonomics at the workplace Available at: https://www.youtube.com/watch?v=syFev-0jRnQ Length: 9:52 minutes</p>
<p>Risks of slips or falls</p>	<p>Forestry work Agricultural mechanization Report on the Forestry and environment conservation technician intermediate course that is offered in Seville Available at: https://www.youtube.com/watch?v=EJ4_QN-LuB4 Length: 5:49 minutes</p>
<p>Cuts</p>	<p>The importance of machine maintenance Available at: https://www.youtube.com/watch?v=RKzg01HzHgk Length: 03:52 minutes</p>
<p>Forestry machines and transportation overturn</p>	<p>Best signs for safety: Available at: https://www.napofilm.net/en/using-napo/napo-for-teachers/napos-best-signs-safety/lesson-two-mandatoryrescue-signs#node-33 Length: 3:36 minutes</p> <p>Risk prevention in forestry transportation Available at: https://www.youtube.com/watch?v=UrJf8ewOr4 Length: 12:01 minutes</p>

Fires	Risk prevention in fighting forest fires Available at: https://www.youtube.com/watch?v=JAutQMglygE Length: 9:37 minutes
Electrical hazard	Electrical hazard Available at: https://www.youtube.com/watch?v=Jl3TJ8XUA9A&t=101s Length: 3:25 minutes

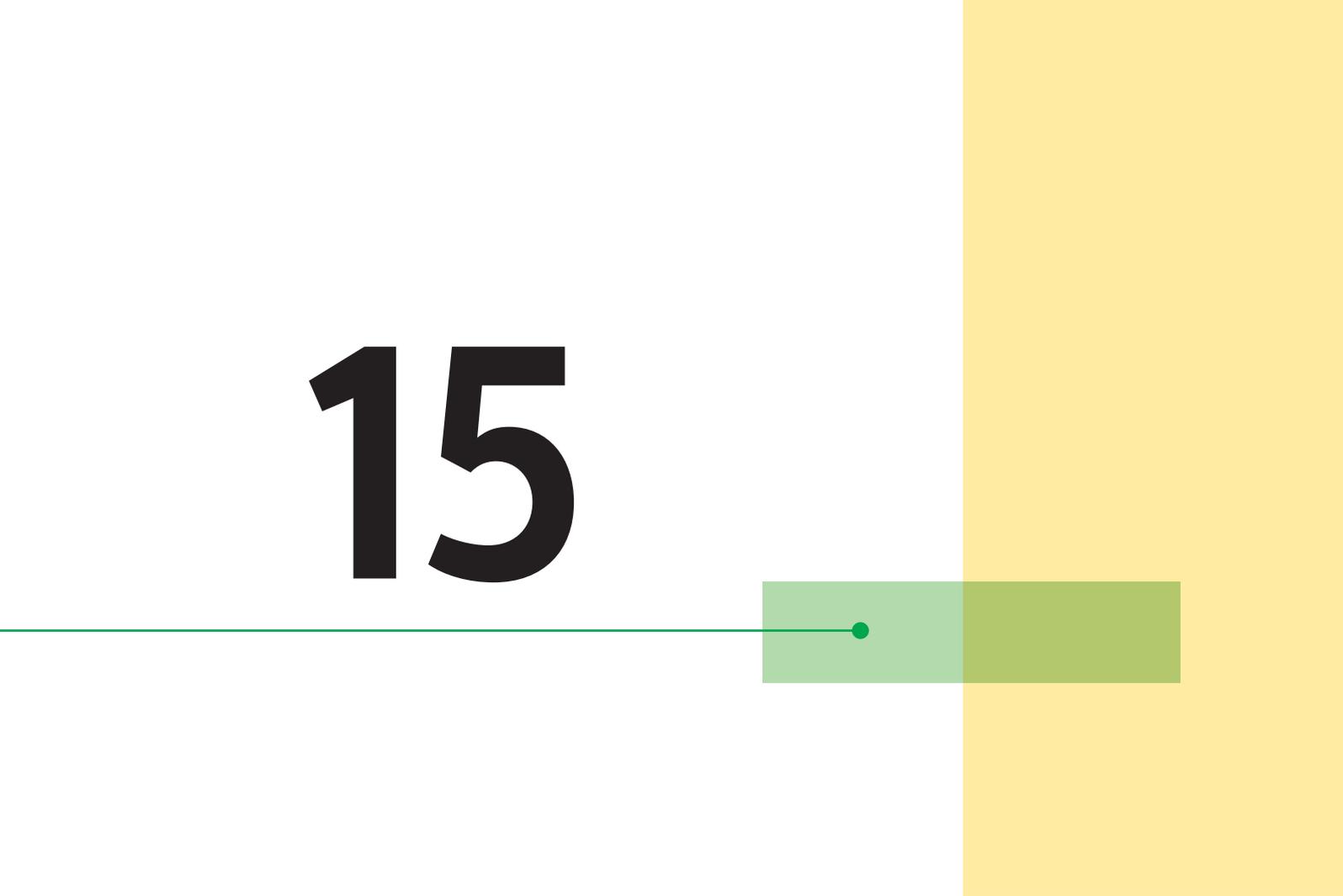
It is recommended to visit the European Agency for Safety & Health at Work. In particular, it has strategies on risk prevention for teachers and a variety of cartoon videos suitable to work on important OSH-related concepts in a dynamic way (including guidelines for teachers; these are the NAPO videos).

Other good examples of educational and training tools about OSH for young people

- ▶ The Canadian Centre for Occupational Health and Safety (CCOHS) has prepared teaching tools, the Health + Safety Teaching Tools to make it easy for teachers to educate their students about what they need to know to stay healthy and safe when they enter the workforce. The content is geared for middle and secondary school students.
- ▶ The National Institute for Occupational Safety and Health (NIOSH) of the United States has designed the Youth@Work—Talking Safety curriculum to teach the basics of OSH in a fun and interesting way to young people. The activities described in the curriculum highlight the hazards and prevention strategies of a great variety of work places where young people work. An assessment tools has recently been added to measure the knowledge that students have on safety and health at work, if they pass, they obtain a digital credential.
- ▶ The California Partnership for Young Worker Health and Safety, that brings together government agencies and statewide organizations representing educators, employers, parents, job trainers and others, has developed strategies to protect youth at work. Among its projects, it includes Young Worker Resource Centers in California, which provides information, training, educational materials, technical assistance and referrals to help educate youth, employers and the community on OSH, and protection to young workers. Its webpage, Youngworkers.org, includes information for adolescents, parents, teachers, job educators and employers.

- ▶ The Entrepreneurs Association of Navarra (CEN) has published a guide to help entrepreneurs to manage and prevent risks in terms of OSH for all young workers in small and medium-sized enterprises. The guide describes the specific requirements applicable to workers under 18 years of age (CEN, 2015). Available at: https://www.cen.es/documentos/ficheros_publicaciones/20170213123711_2653.pdf
- ▶ Oklahoma (United States) has been the first state to enact a law for “OSH integration into education” (2015) which establishes that the competent state authorities in work and education must provide training on safety and health in the workplace at schools for students of grades 7-12 (i.e., students from 12 to 18 years of age). The State of Texas has recently enacted a similar law and, other two states, California and Arkansas, are studying laws inspired by Oklahoma Law.
- ▶ The Guide for young workers focuses on the rights and responsibilities of young workers at work, with a particular emphasis on OSH (Ombudsman for fair work of Australia, 2017).
- ▶ The ILO has developed practical and easy to use tools to assess and manage risks, in:
 - A 5 step guide for employers, workers and their representatives on conducting workplace risk assessments,
 - Training package on workplace risk assessment and management for small and medium-sized enterprises.
 - Self-manage health and safety at work. Self-Training and Competency Assessment Guide.

15



Some suggestions for
mainstreaming OSH
into the selected
Programme



Some suggestions for mainstreaming OSH into the selected Programme

It is worth noting that these suggestions are not intended to represent the entire universe of potential ideas and possibilities for OSH mainstreaming offered by the Centre, the team of teachers, and the programme. That would require more far-reaching analysis conducted jointly with the technical team of the Project.

However, these proposals are made based the workshops and interviews carried out with all the actors involved, and the review of the available documentation, as well as the good practices learned by comparing experiences, for teams to discuss and for further in-depth analysis in the future.

Within the teaching staff:

It is essential to **maintain the interest and secure the commitment** of the entire team (teachers, director, leaders of the productive project, students) regarding this issue. During the visit and meetings held, teachers expressed the need to reinforce OSH in the curriculum because, as one of them pointed out, “safety is implicit in every

thing they do outside”. They also say it is essential “to think about OSH for every thing (subject, task or project”, and relevant and feasible suggestions came up during a first brainstorming session.

Conduct a **basic training process in OSH for teachers** in the forestry and wood production sector. Training can be conceived as a process with a first stage within the team with help from sector leaders (for example, a forestry adviser from UTU, a leader from the productive project, a Forestry Safety teacher, etc.) on one or two days before the semester begins.

Joint planning of OSH mainstreaming into the subjects of one semester: a working day before the start, working jointly to determine

transdisciplinary collective projects based on the methodological sequence proposed.

Regular team coordination, sharing the advances, difficulties and support materials on OSH.

At the level of the programme:

Currently, OSH is covered by a series of subjects, namely: silviculture, forestry mechanization (both included in all semesters) and labour and environmental legislation. The first two have a very substantial workload (352 hours of forestry mechanization and 512 hours of silviculture, in total, counting all four semesters) and both teachers are already working in coordination. One of the difficulties raised by teachers is that for forestry mechanization there is currently no equipment available for practical lessons, so the subject is mainly theoretical. However, the implementation of the productive project will solve this situation by providing opportunities for working practically on the set of processes.

The other subjects have not currently integrated OSH. Although it can be said that it is more difficult to integrate in some subjects (such as Forest Mensuration or Dendrology), in others, it is easier to collectively think of how to mainstream OSH and how to articulate horizontally with the subjects that are more closely connected to the productive processes. For example, it is key to mainstream OSH into subjects such as Communication, Mathematics, Production Systems, Management and Administration, Wood

Industry and, mainly, in the Integrated Project.

The Integrated Project is devised and developed by a team and the oral examination is taken individually. This is conceived as a valuable opportunity for practical mainstreaming, and also for focusing on the issue of OSH (for instance, researching real applications in the labour field, the experience of the enterprises in the area, etc.).

Strengthen, through the different areas of training, the skills related to human resources management, with an emphasis on OSH management within the teams: leadership, work organization, assertive communication, etc.

At the Centre:

Promote the continual improvement of OSH as a **Centre's project**, working with students on the detection of risks, and improving the safety and health conditions at the centre, implementing awareness raising activities in enterprises in the community, etc.

Coordinate with the associate degree in **Occupational Safety and Health** in order to contribute to the training of students and teachers of the forestry degree, and students of the OSH degree (since the coordination takes place with a specific field that is relevant for their context).

Promote the **optimization of the resources that will be provided by the productive project** to steadily mainstream OSH.



Conduct **workshops, seminars or meetings on OSH**. Encourage students to present their research projects (integrated project) or work experiences related to OSH during said activities. Integrate experts on the subject matter.

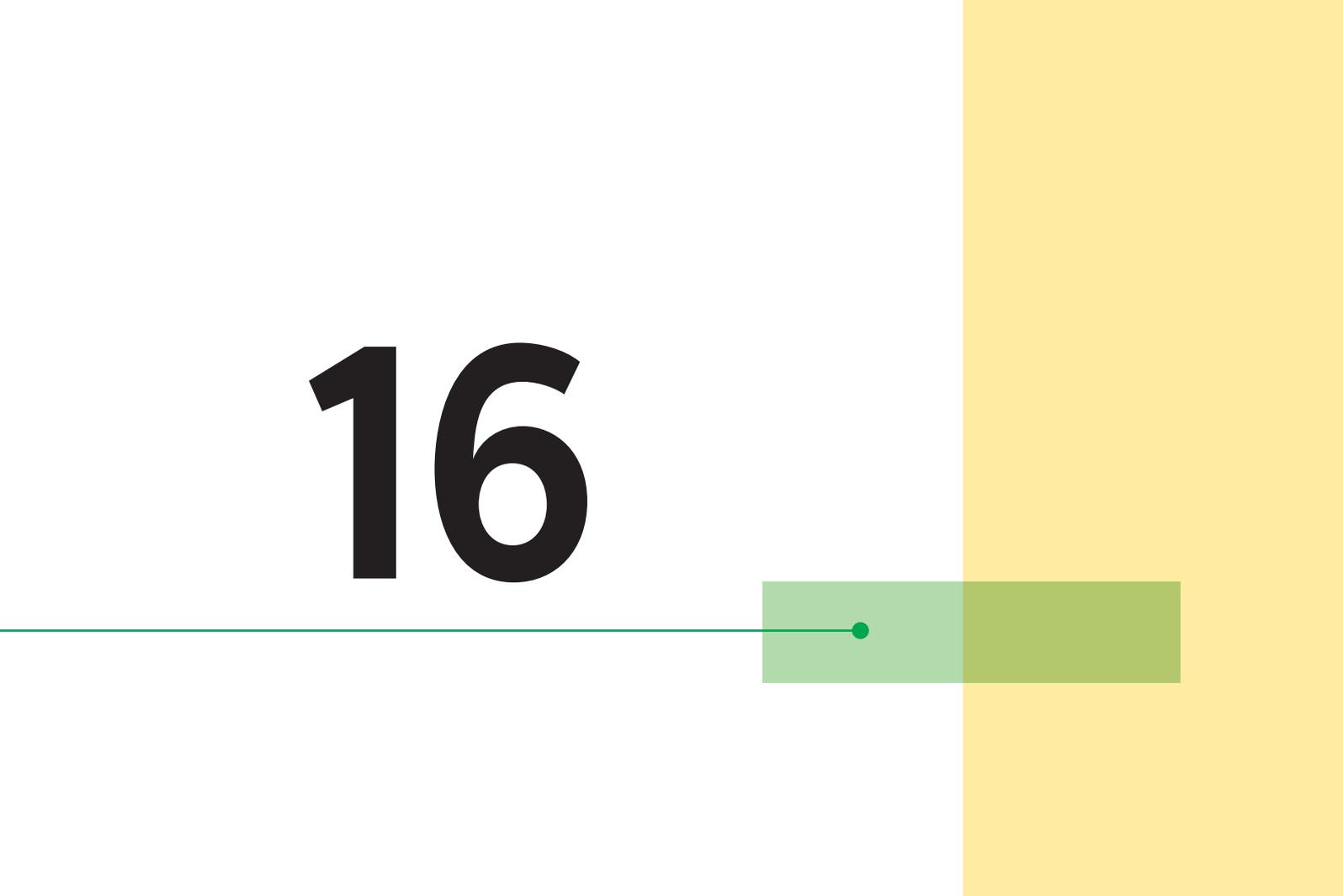
Coordinate with **forestry companies** to participate in some of the **training sessions** they provide for their new staff.

Organize visits/workshops with OSH experts from enterprises in the area to the Centre.

Promote **peer-to-peer learning**, fostering exchanges on OSH among students from different courses (for example, there are electromechanics, electricity and agrotech students doing internships in forestry companies).

As it was stated at the beginning of this section, it would be necessary to work more closely in consultation with teachers and the advisor team in the future so as to be able to go deeper into OSH mainstreaming proposals for the Programme.

16



Comments
from different
actors



Comments from different actors

Students identify risks

- *“We are constantly at risk in this profession.”*
- *“During the visit to the nursery we found scarce safety and poor training. There were no precautions.”*
- *“I have been working in the field for some time and I know that these things (PPE) are often not used because they are uncomfortable.”*
- *“OSH is fundamental, it is the person’s right but also the person’s duty.”*
- *“It’s a win-win situation both for the worker and the enterprise.”*



Students suggest for training



- *“It would be great to include OSH from the first semester.” “I think that we should be introduced to some notions from the beginning since we use PPE by inertia but had no previous preparation.” “I had no idea at all.”*
- *“They worked with fertilizers and chemicals and did not know/have uniforms nor proper signalling.” “After a visit, the technical aspects are analysed but OSH is usually left aside. And, in my opinion, it is a priority.”*
- *“We should be trained on how to reach workers.” We could include it in every subject through workshops and practical tasks.*
- *“Throughout the production chain or area that will be treated.”*
- *“Practical training, field visits”*

Contributions from enterprises leaders



- *“To be successful with OSH, you must reach people’s hearts.”*
- *“...Create culture”*
- *“In general, it is difficult that you get penalized for safety issues.”*
- *“Labour relationships end up being key.”*
- *“The big challenge is how to permeate OSH into small entrepreneurs/family businesses. People management when the enterprises that hire them, haggle prices and require a variety of things.”*
- *“If one gets hurt, everyone is harmed.”*
- *“Courage is necessary to intervene. I do not want you to get hurt. Promoting your own safety and that of peers.”*
- *“Raising awareness through workshops about how bad you may feel if anything happens to you: in terms of health, economically, productively, emotionally.”*

17



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