



Farm
4SD

Farm4SD Methodological framework

Farmers as advocates and promoters
of sustainable change



Project Information

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This document was produced as a methodological framework in the Erasmus+ project Farm4SD, where farmers will make a long-term shift to a more sustainable way of agriculture. It will contain information from partners' national reports, instruction for easier planning and implementation of blended learning and a presentation of the main EU documents, connected to sustainable agriculture. The document will serve as a base for the development of project results – R2 to R4.

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1. What we have learned from the conclusions of the Farm4SD national reports?

Introduction:

Farm4SD aims at developing a holistic, innovative, and inclusive approach for farmers, especially medium and small farm holders, to educate and train them on the European pillars of sustainable agriculture. The effort to upskill and reskill farmers and C-VET educators, also in entrepreneurial and soft skills, is necessary so that they can become true factors of change and contribute to environmental protection, the sustainable growth of our planet and to rural development.

Five national reports (in Germany, Belgium, Poland, Slovenia and Greece) were conducted in order to find out:

1. **Farmers' skills gap concerning sustainable agriculture's pillars: The Agenda 2030 for Sustainable Development, European Green Deal, Farm to Fork and Biodiversity Strategies, The new CAP, soft skills, and entrepreneurial skills**
2. **Best practices in farmers' C-VET provision, as well as the skills' recognition paths based on established European VET tools and approaches: EQF, updated ECTS or/and ECTS, Micro-credential approach**

Based on the results of this report, the following Methodological Framework (R1) was developed. The Methodological Framework will help VET institutions and VET trainers to better understand farmers' needs and improve their capacity in advanced training methodologies and skill recognition, so they can better serve European farmers and the European sustainable agriculture labour market. Additionally, this report will serve as the foundation for the Farm4SD project's learning resources and guidelines

Summary of the Results

A sustainable food system will be essential to achieve the climate and environmental objectives of the five pillars of sustainable agriculture. Farmers play a key role in achieving a societal transformation towards sustainable development: They need to act as agents of sustainable change. The conducted research shows that European farmers are still at the beginning of this change.

The qualitative research in Germany and Slovenia shows that there is generally a high number of education possibilities (for Germany at university level and for Slovenia already starting from the secondary level) regarding sustainable agriculture. Nevertheless, all countries (Germany, Greece, Poland, Slovenia, and Belgium) show a sufficient lack of knowledge regarding the five pillars of sustainable agriculture. This can be explained by the fact that most of the farmers questioned in this study have been working on a farm for over ten years. There is a trend in education possibilities, already starting from an early age, which does not reach the adult education level. This leaves farmers working already for ten years on a farm with little knowledge about the upcoming trends and policy changes.

Much has been published and implemented in the last years and it needs to be seen, how effective these strategies prove to reach the set targets. Right now, the education possibilities in the agricultural sector are weak, deficient, and fragmented:

- They do not offer enough education and training possibilities to reach, especially rural, farms and farmers.
- They need to be adapted and expanded in order to reach farmers, especially small and medium farm holders, but also VET providers, teachers, and trainers as well as Advisors, Researchers and Farmer Organisations, HEIs, adult education institutions, local authorities, policymakers and NGOs.

The conducted research shows clearly that European farmers lack overall knowledge not only regarding the pillars of sustainable agriculture, but also in the skills they need to face the upcoming challenges and adapt successfully to changes. The data furthermore suggests that the majority of farmers are highly interested in a free training course, preferably in a blended format.

RECOMMENDATIONS FROM NATIONAL REPORTS

In conclusion, it is recommended to develop a blended training course for farmers, that will:

1. Equip farmers with knowledge about the five pillars of sustainable agriculture: Agenda 2030, The New CAP, European Green Deal, Farm to Fork, Biodiversity strategy.
2. Promote and explain in depth the future benefits of adopting and practising sustainable agriculture:
 - Increase awareness regarding the environmental impact of agriculture in order to help them understand the need for change.
 - Stay relevant to the market.
3. Equip them with knowledge about the EU funding opportunities in each country.
4. Upskill and reskill farmers in order to become agents of sustainable change and to stay relevant to the market.

And we have also found that the research showed that the following entrepreneurial and soft skills need to be addressed (shown from lowest known to highest):

Entrepreneurial skills

-
- Risk Management (34%),
 - Marketing tactics for effective product promotion (32%),
 - Market Research - understanding market trends and consumer needs (31%),
 - Adopting new technologies in business operations/projects (29%),
 - Project (Resource) management (27%),
 - Develop a sustainable business model (25%),
 - Set long-, medium-, and short-term sustainable business goals (25%),
 - Financial Management (24%)
 - Digitalization literacy (24%).
-

Soft skills

-
- Time Management (23%),
 - Communication (21%),
 - Networking (18%),
 - Creativity (17%),
 - Emotional intelligence (16%),
 - Pitching of new ideas (15%),
 - Agility (14%),
 - Critical thinking (14%),
 - Teamwork (13%)
 - Self-management (12%)
-

2. The key EU agricultural policy documents

2.1. The agenda 2030

The Sustainable Development Agenda is a plan for all people, planet Earth and prosperity for all. The goals are based on the desire to build on the development goals that haven't been achieved in society. The goals are interlinked and bring together the three dimensions of sustainable development: economic, social and environmental. The Agenda works in several areas: people, land, prosperity, peace and partnership.



*Figure 1: The Sustainable Development Goals are intended to be achieved by 2030.
Source: Agenda 2030*

- The objectives are interlinked and involve farmers directly or indirectly. We would focus on the objectives that involve the farmer as an actor who can use his knowledge to act more sustainably.

To learn about the benefits of sustainable farming, as natural resources are the basis for feed and food production. A sufficient and constant supply of agricultural products is the foundation of food security. Over the centuries, farmers have acquired knowledge on how best to adapt to changing environmental and economic realities. In particular, to encourage a positive outlook on sustainable farming so that they can add value to products through their contribution. To teach them that this type of farming adapts to climate change, floods and droughts, and that this type of farming improves soil and land fertility. It is very important to teach farmers to preserve the genetic diversity of seeds, crops, domesticated and domesticated animals, and to preserve ecosystems.

Farmer's knowledge is important, especially in terms of managing natural resources and using them efficiently, and will also be useful for opening up new activities on the farm (such as agrotourism) and creating new jobs. The document also focuses on reducing the use of chemical agents released into the air, water and soil.

The farmers will also benefit from the knowledge to better manage sustainably not only his/her farm but also all types of forests and other types of ecosystems, because only by being aware of biodiversity and ecosystem conservation can we help to make a difference.

2.2. The European Green deal

The European Green Deal is a package of policy initiatives to steer the EU towards a green transition and the ultimate goal of climate neutrality by 2050. It will help transform the EU into a fair and prosperous society with a modern and competitive economy. It requires an integrated and cross-sectoral approach, where all relevant policy areas contribute to the ultimate climate goal. The package includes initiatives covering the areas of climate, environment, energy, transport, industry, agriculture and sustainable finance, all of which are closely interlinked (European Commission).

Knowledge of this strategy is important for farmers to adapt to the reduction of greenhouse gas emissions. This means that farmers will be aware of the targets announced by the European Union. This means that they will be prepared to invest in renewable energy sources, increase energy self-sufficiency, and reduce CO2 emissions from land and forest use.



Figure 2: Green Deal focus areas. Source: Irish Farming Association

2.3. From farm to fork strategy

With this programme or objective of the European Commission, which is part of the European Green Deal, Europe is trying to ensure a nutritional transformation from the current model to a more sustainable one. The objectives of the strategy are:

- supporting sustainable food production
- ensuring sufficient, affordable and nutritious food within the limits of the planet
- promoting more sustainable food consumption and healthy diets.

The "Farm to Fork" strategy is an integral part of the European Green Deal, which sets the goal of a "fair, healthy and environmentally sound food system". The transition to this new food system is also supported by the CAP reform.

This knowledge that farmers acquire is the creation of a circular economy, which reduces food waste and enables shorter supply chains toforhe final consumer. It also encourages the farmer to use pesticides, antimicrobials, and fertilisers wisely and responsibly. The strategy also allows the farmer to emphasise that food is produced locally, as it advocates environmental standards for food imports from third countries and fights against food fraud.



Figure 3: From Farm to Fork Strategy – overall goals. Source: Farm to Fork Strategy

2.4. The New common agricultural policy 2023-2027 (CAP)

The CAP aims to give European farmers a sustainable future, provide more targeted support for small farms and give EU countries more flexibility to adapt measures to local conditions. Agriculture and the countryside are central to Europe's Green Deal and the new CAP will be a key tool in delivering the objectives of the 'Farm to Fork' and 'Biodiversity' strategies.

Each country will draw up a national starter plan combining funding for income support, rural development and market measures. EU countries will contribute to ten specific objectives in the preparation of their strategic plans, based on a toolbox of broad policy actions provided by the Commission, which can be adapted to national needs and capacities (EU Commission).

For farmers, the strategy represents a source of funding and advocates a more equitable distribution of money. It focuses in particular on the income needs of small and medium-sized farmers, and family farms. Knowledge of this strategy means better use of the financial resource. The possibility of investing in and modernising agricultural holding enables farmers to compete and develop. This strategy has also paid special attention to smaller farmers and family farms, allowing part of the funds to be earmarked for them. Awareness of the strategy also means linking up local farms and developing a local environment that leads to community. Knowing the strategy also means that farmers can integrate more easily into the local environment.

2.5. The biodiversity strategy for 2030

The EU's biodiversity strategy for 2030 is a comprehensive, ambitious and long-term plan to protect nature and reverse the degradation of ecosystems. The strategy aims to put Europe's biodiversity on a path to recovery by 2030 and contains specific actions and commitments.

Knowing the strategy means farmers are aware of the need to preserve the environment in which we live, and to protect against the impacts of climate change, forest fires, ecosystem preservation, food insecurity, etc.

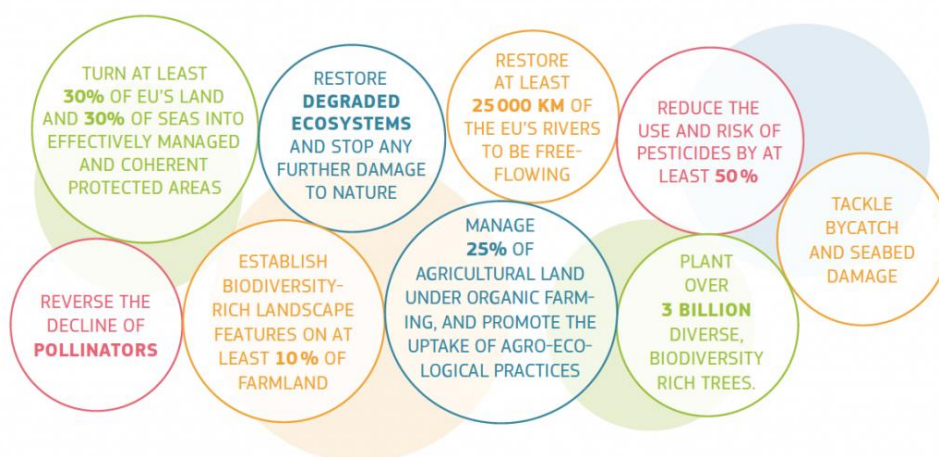


Figure 4: The ambitious EU commitments for 2030 to achieve healthy and resilient ecosystems. Source: The 2030 Biodiversity strategy

3. EDUCATION FOR SUSTAINABLE DEVELOPMENT AND TRANSFORMATIVE LEARNING

Research investigating farmers' beliefs and perceptions of climate change-related risks for their own businesses growing (e.g. Mase et al., 2017, Menapace et al., 2015).

Whilst studies reveal that farmers' actual adaptation behaviour is rather driven by financial motives and managerial considerations (Li et al., 2017), the overall awareness of personal and professional contribution to climate change effects on non-monetary long-term features of natural resources and related problems like biodiversity, soil degradation or groundwater lowering among people planning a professional career in the agricultural sector hasn't been explored in much detail to date (Fritz et al., 2019).

In order for farmers to cope with and shape the present and future Grand Challenges, education for sustainable development enhances their capacity, competencies, and resilience based on their natural and cultural heritage. Participation, the capacity to act, self-determination, life-long learning, and identification with natural environments as life's most important resource are the main principles that promote the change in agricultural education (e.g., GreenComp, EntreComp), while at the same time encouraging the transition of the EU rural territory in accordance with sustainable development principles (Fritz et al., 2019).

The Farm4SD partners will work towards the transformation of farmers into promoters and advocates of sustainable agriculture. Transformative learning is the key to enhancing a positive shift towards sustainable behaviour, which will enable them to face and shape present and future Grand challenges.

Moreover, in her model, Moon (2001) identifies the learning process as a continuum of five stages, where students proceed from "surface-" to "deep learning" until they have reached the final stage of transformative learning.

- Noticing is defined as the first stage in perceiving. "I just noticed this bit of information. I wonder if it's useful?"
- Making Sense is defined as ordering/organizing the learning. Learning is considered in the contexts it appears in, and not in how it is to be learned or used in the future. An example might be: "I think we've got enough information now to solve this problem. Let's start it."
- Making Meaning is defined as learning that has assimilated into the cognitive structure (our understanding). An example might be: "I understand the relationship behind this sequence now".
- Working with Meaning is defined as the understanding that is being developed further from the previous stage. Reflection plays a necessary role at this stage, it has to deepen our understanding. An example might be: "I understand the processes that enabled us to plan well for that task". At this level, the original learning 'materials' (group members' thoughts, review comments, immediate experiences) are not needed and the learner is doing most of the work (reflecting).



Figure 5: Transformative learning phases according to Moon's cycle of deep learning.
Source: Moon, 2001

4. WHAT IS BLENDED LEARNING?

The term blended learning is used frequently, but there is ambiguity about what is meant by it. Blended learning is an umbrella term, including not only the blend of different types of education (in-classroom and distance learning, usually facilitated by technology), but also other blends, such as combinations of different instructional methods, pedagogical approaches and tools (Hrastinski, 2019).

According to the European Commission (2021), blended learning is a teaching and learning process integrating various factors: learning environments (home, online, school, in the field); competence development process (lifelong learning and professional – formal and non-formal); affective domain (motivation, satisfaction, discouragement, frustration); and people (learners - participants, teachers - lecturers, experts, other staff). For this reason, it is important to consider blended learning within the ongoing development of the whole learning process and all of its associated stakeholders (Teacher Academy, 2021).

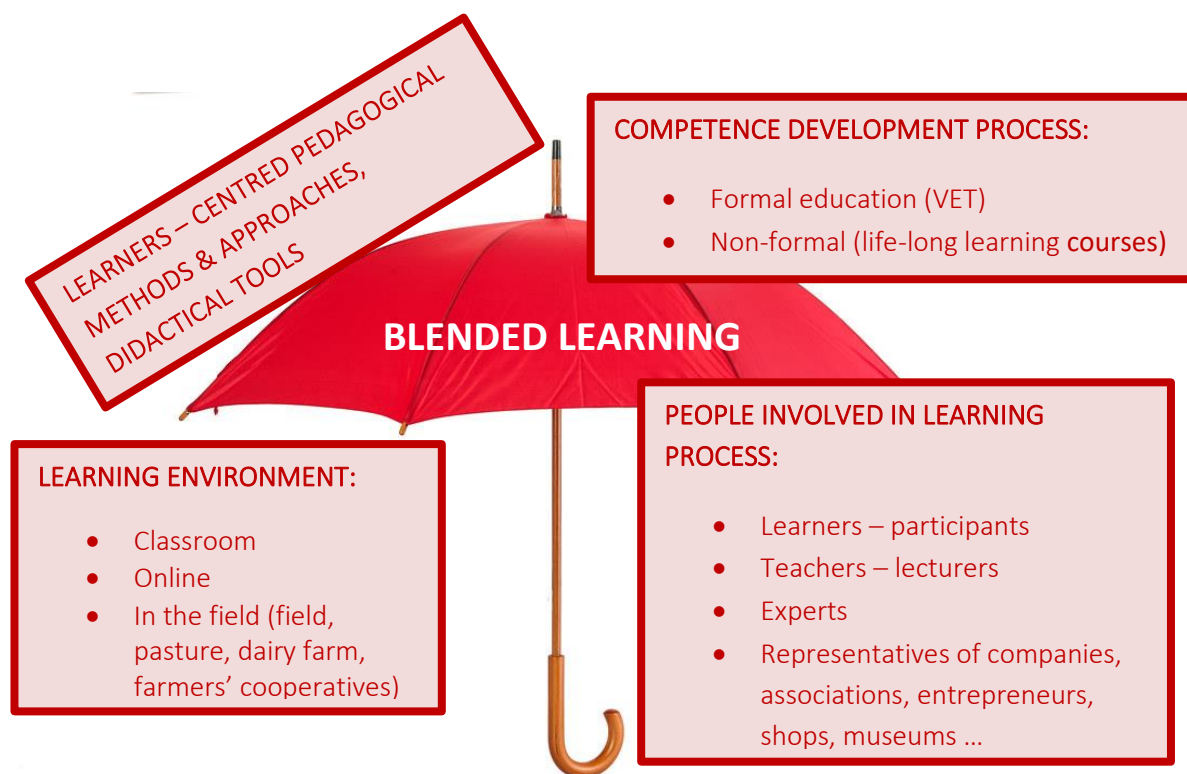


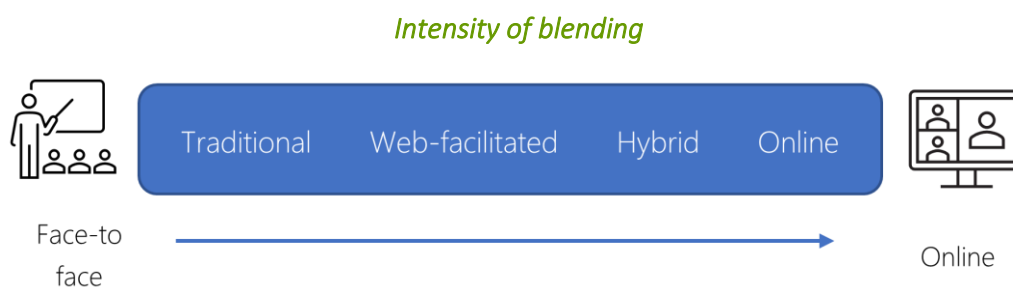
Figure 6: Blended learning is an umbrella term.

4.1. Bridging online and offline learning experiences

In the Farm4SD project, we will primarily focus on just one part of the broader definition of blended learning: that of a **“thoughtful fusion of face-to-face and online learning experiences”** (Garrison & Vaughan, 2008), where the online component happens at a distance. This means that the face-to-face and distance learning experiences should complement each other in a meaningful way, and make use of their particular strengths.

The definition given is quite broad, and that is because **there is no specific blueprint for implementing blended learning**. This is unlike other pedagogical approaches, such as project-based learning or collaborative learning, which are a lot narrower and more concrete in their definitions. The way blended learning is implemented will be dictated by the situation at the locations of learning (in class and at a distance), the pedagogical approaches used alongside it, technology-related factors (ease of use, accessibility, availability, etc.), as well as the competence of the different actors involved.

Taking into account the aspects that influence a blended learning implementation, we may consider blended learning to be located on a **continuum**, as illustrated by the following picture. Various proportions of face-to-face and online engagement can constitute a blended learning environment (Teacher Academy, 2021).



*Figure 7: Continuum of networked and technology-enabled learning interventions.
Source: Allen and Seaman (2014).*

5. THE DESIGN OF THE FARM4SD CURRICULUM IN LINE WITH THE EU STANDARDS FOR CONSTITUTIVE ELEMENTS OF MICRO-CREDENTIALS

5.1. Why the Farm4SD training will be developed in line with the EU requirements of the validating/certifying system of micro-credentials:

- **Short duration of Farm4SD training**

Micro-credentials are addressing this issue by certifying the learning outcomes following a small learning experience (e.g. a short course or training - up to 30 ECTS).

- **Farm4SD training will be designed and implemented by different partners from organisations of formal, non-formal and in-formal education**

The Farm4SD project partners that will design and implement the future Farm4SD training are farmers' advisors, farmers' associations, formal (VET) and informal organisations and other companies that provide different training for farmers.

It is desirable within the micro-credentials system that a specific curriculum and training is designed and implemented jointly by formal, non-formal and in-formal education organisations, to create holistic training that meets the diverse and rapidly changing needs of the farmers' communities.

- **The agricultural sector will face rapid and great changes in the future. Farmers' education and training should be flexible and agile and adapt to predicted changes.**

In the coming years, farmers will confront the consequences of climate change and their mitigation measures, which may impact their farming practices. In addition, the EU Commission will accelerate adaptation through its financial mechanisms. The micro-credentials were specially designed to support upskilling or reskilling not only farmers but all workers. This way, they respond quickly and efficiently to their current job's needs or transition to new jobs and expanding sectors, such as green and digital sectors (Futures et al., 2020).

5.2 EU standards for constitutive elements of micro-credentials

In the scheme below are presented EU standard on micro-credentials (adapted to Futures et al., 2020):



Figure 8: EU standards for developing the Farm4SD micro-credentials. Adapted to Futures et al., 2020

5.2.To have in mind:

a. Quality

Micro-credentials are subject to internal and external quality assurance by the system producing them (e.g. the education, training or labour market context in which the micro-credential is developed and delivered). Quality assurance processes must be fit-for-purpose, be clearly documented, accessible, and meet the needs of learners and stakeholders.

External quality assurance is based primarily on the assessment of providers (rather than individual courses) and the effectiveness of their internal quality assurance procedures (Futures et al., 2020).



*Figure 9: Elements contributing to the micro-credentials' quality.
Adapted to Futures et al., 2020*

b. Transparency

Micro-credentials are measurable, comparable and understandable with clear information on learning outcomes (knowledge, skills and attitudes), workload (ECTS), content (implementation plan), level (EQF), and the learning offer, as relevant.

- It is recommended to use the number of ECTS points (European Credit Transfer and Accumulation System) for description of workload (Futures et al., 2020).

ECTS points typically represents a 25-30 hours of learner's workload. Points are conceptualised as a relative measure, indicating the weight of unit of learning outcomes.

1 ECVET point = 25-30 hours of learner's workload which comprises (Ryan et al., 2018):

- Contact hours which should refer to theoretical (non-practical) hours. In case of on-line sessions, if it is conducted in school setting and supervised, then it is considered as part of the contact hours.
- Self-study hours which should refer to non-direct supervision or attendance in a class: preparation of the presentations, reading, tutorials, assignments, research, seminar paper, conferences, site visits etc. It's considered as self-study/independent work.
- Hands-on /Practical session's hours which should refer to supervised practical work.

- Information on learning opportunities leading to micro-credentials should be accessible and easily exchanged through relevant platforms, including Europass (Futures et al., 2020).

After the training, Farm4SD partner organisations will use the Europass European Digital Credentials for Learning tool, where each participant will be able to access an electronically sealed certificate for the training or acquisition of microcredits. Credentials can be e-mailed to learners or directly deposited to their Europass profiles.

Link: <https://europa.eu/europass/digital-credentials/viewer/#/home>



Each of the Farm4SD partners providing the training will complete similar categories in the Europass tool as required by the EU micro-credential standards.

Credential templates

Use the tabs below to build multilingual reusable templates for credentials, activities, assessments, etc. When your template is ready, click on the **Issue** icon to enter student data, and grades if applicable. If you need clarification on what any field requires, scroll over the black ⓘ icon next to the label. This tool is still in preview – some of the dropdown lists may not yet be selectable.

Credentials | Achievements | Learning Outcomes | Activities | Assessments | Organisations | Entitlements | Custom HTML Templates

This tab is where you assemble and issue your credentials. Before you proceed to creating your first template, please make sure to provide details of the issuing organisation under the **Organisations** tab. If you wish to describe a learners achievements, activities, or other relevant aspects, please enter these under the respective tabs. You will need to provide references to these entries when you build your credential.

[New Credential Template](#)

Create Activity ✕

Activities

Activity Title*

Description ⓘ

Start-Date ⓘ

End-Date ⓘ

Workload in hours ⓘ

Directed by ⓘ

Location ⓘ

Sub-Activities ⓘ

Figure 10: Required categories to be fulfilled for the recognition of micro-credentials in the Europass tool. Source: European Digital Credentials for Learning

6. DEFINING LEARNING OUTCOMES: GLOSSARY OF BASIC TERMS

6.1. Knowledge

Knowledge refers to facts, information, rules definitions etc. It refers to conceptual, descriptive knowledge, describes things, events, or processes; their attribute and characteristics; and their relation to each other.

Knowledge is conscious; you are consciously aware that you understand the information and it can often be verbalized and it's related to memorization.



In simple terms, knowledge means collection and retention of information in individual's mind. Knowledge necessary influences person's behaviour for performing a task but this is not yet sufficient.



By reading a person can understand the meaning of driving a car. The person can describe how to drive a car. But, mere description will not enable the listener to drive a car unless something more than knowledge is there.

That is precisely the reason we see in real life that people, or say, entrepreneurs possessing merely the entrepreneurial knowledge have miserably failed while actually performing the task.

What this suggests is that person also needs to have skills to use or translate the knowledge into action or practice

6.2. Skills - psychomotor domain

The psychomotor domain mainly emphasises physical skills involving coordination **of the brain and muscular activity**.

The psychomotor domain is commonly used in areas like laboratory science subjects, health sciences, art, music, engineering, drama and physical education.



A skill is the ability to apply knowledge and use know-how to complete tasks and solve problems.

Skill is the ability to demonstrate a system and sequence of behaviour which results in something tangible, observable, something that one can see. For a skill, it is necessary to know what an individual can do to correctly perform an action.



A person can properly identify the sequence of action to be performed to drive the car. Nonetheless, while knowledge of driving a car could be acquired by reading, talking or so on. Skill to actually drive a car can be acquired by practice i.e., driving car on a number of times.

This means, both knowledge and skill are required to perform a task and achieve an effect like driving a car = this refers to competence and competent person.

6.3. Competency (sg.), Competencies (pl.)

Competency includes the personality characteristics of the individual (knowledge, skills, motives, self-image, role etc.) that **influence the individual's behaviour**. Attitudes contain the **feelings, values, appreciations, motivations, or priorities** of your discipline or profession you want to stimulate in your students.

6.4. Competence (sg.), Competences (pl.)

Competence is “a dynamic combination” of knowledge, skills, attributes, abilities and attitudes which is **manifested in a specific work context or specific environment and with the intention of achieving an effect**. Competence is the ability of an individual to do a job properly – what is required to do and what this achieves in a specific work context.

- **The difference between competency and competence**



As shown in a picture, we should understand competency (knowledge, skills motives, self-image, role etc.) as a set of personal characteristics and behaviour of an individual. The competencies of an individual are “in-put” for individual’s competence which is manifested in a specific work context and with the intention of achieving an effect.

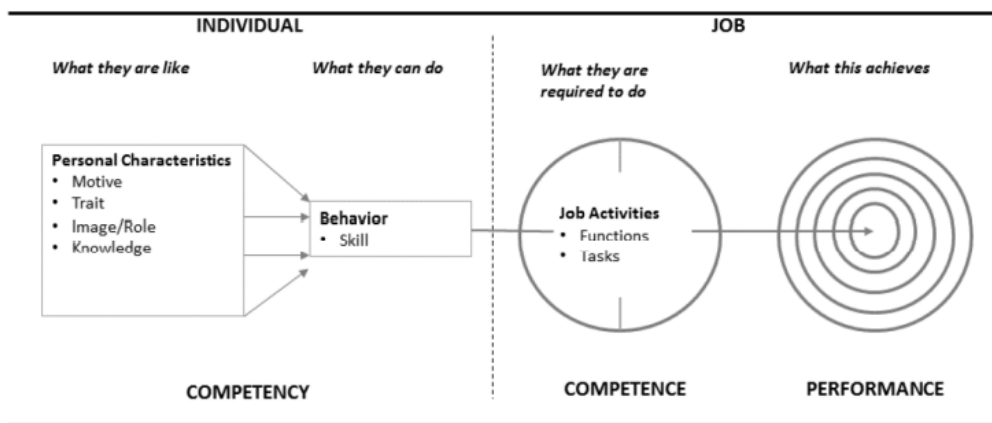


Figure 11: The difference between competency and competence
Source: Sati and Drechsler, 2015



Unconscious competence: The person drives with a high degree of self-confidence (competency – input), which manifests itself as automatic driving (competence) without thinking about individual actions.

6.5. Learning outcomes



Learning outcomes, are used to express what it is expected that students should know, understand and be able to do at the end of the learning period (Kennedy, 2006).

The objectives of a Vocational Education and Training (VET) programme / or elements of a qualification are expressed as learning outcomes in terms of knowledge, skills and competences to be acquired and mastered at a given reference level (Winterton et al., 2018).

In the European Qualifications Framework (EQF), learning outcomes are defined as statements of what a learner knows, understands and can do on completion of a learning process, which are defined as knowledge, skills and competences (CEDEFOP, 2010).

7. LEARNING OUTCOMES (KNOWLEDGE, SKILLS AND COMPETENCIES/COMPETENCES)

7.1. How to write learning outcomes?

The focus of this chapter is how to write specific and assessable learning outcomes at the course level: for lecturers, they are a tool for thoughtful and deliberate course planning (Fink 2013); for students, they provide clarity and focus about what students are expected to learn and how they will be required to demonstrate it (in Miller–Young, 2018).

Making expectations explicit can help lecturers, trainers and learners better understand the learning destination and thus plan and monitor strategies for getting there (Denecke et al., 2017 in Miller–Young, 2018).

We will use the Knowledge, Skills and Abilities (KSAs) framework and Bloom's Taxonomy to write and sequence learning outcomes (Miller–Young, 2018).

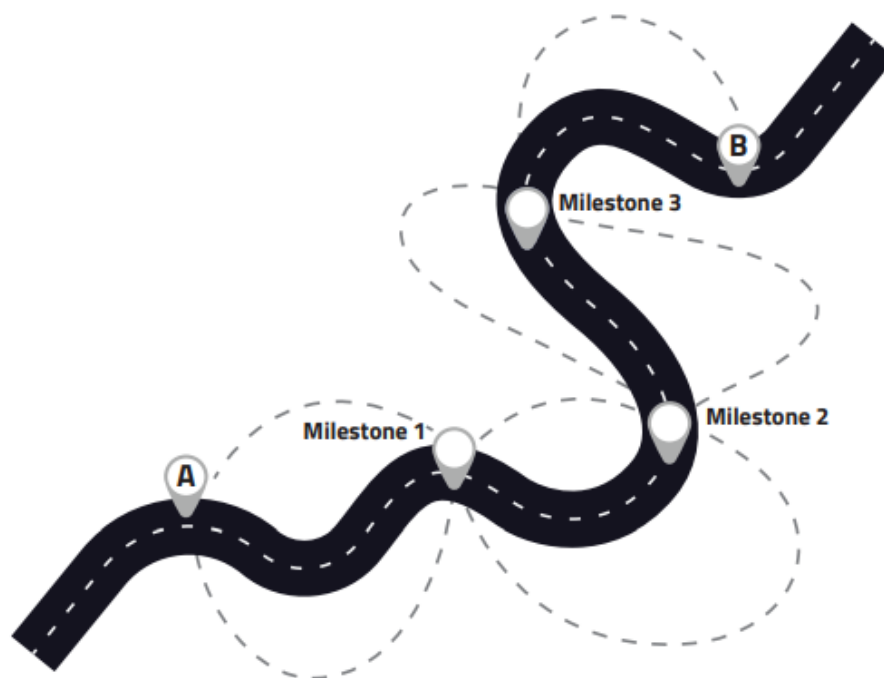


Figure 12: Learning outcomes form a road map to the final learning destination, with milestones along the way. Source: Miller–Young, 2018

7.2. Basic rules when writing learning outcomes (Kennedy, 2006)

- Ensure that the learning outcomes of the module relate to the overall outcomes of the programme.
- Begin each learning outcome with an active verb (in the tables below), followed by the object of the verb followed by a phrase that gives the context.
- Use only one verb per learning outcome.
- Avoid complicated sentences. If necessary, use more than one sentence to ensure clarity.
- The learning outcomes must be observable and measurable.
- Ensure that the learning outcomes are capable of being assessed. As you work on writing the learning outcomes, bear in mind how these outcomes will be assessed, i.e. how will you know if the student has achieved these learning outcomes?
- When writing learning outcomes, bear in mind the timescale within which the outcomes are to be achieved. There is always the danger that one can be over-ambitious when writing learning outcomes. Ask yourself if it is realistic to achieve the learning outcomes within the time and resources available.
- Before finalising the learning outcomes, ask your colleagues and possibly former students if the learning outcomes make sense to them.



When writing learning outcomes, it is helpful to focus on what you expect learners to be able to do or demonstrate at the end of the module or programme.



Use **ACTIVE VERBS** to write learning outcomes.

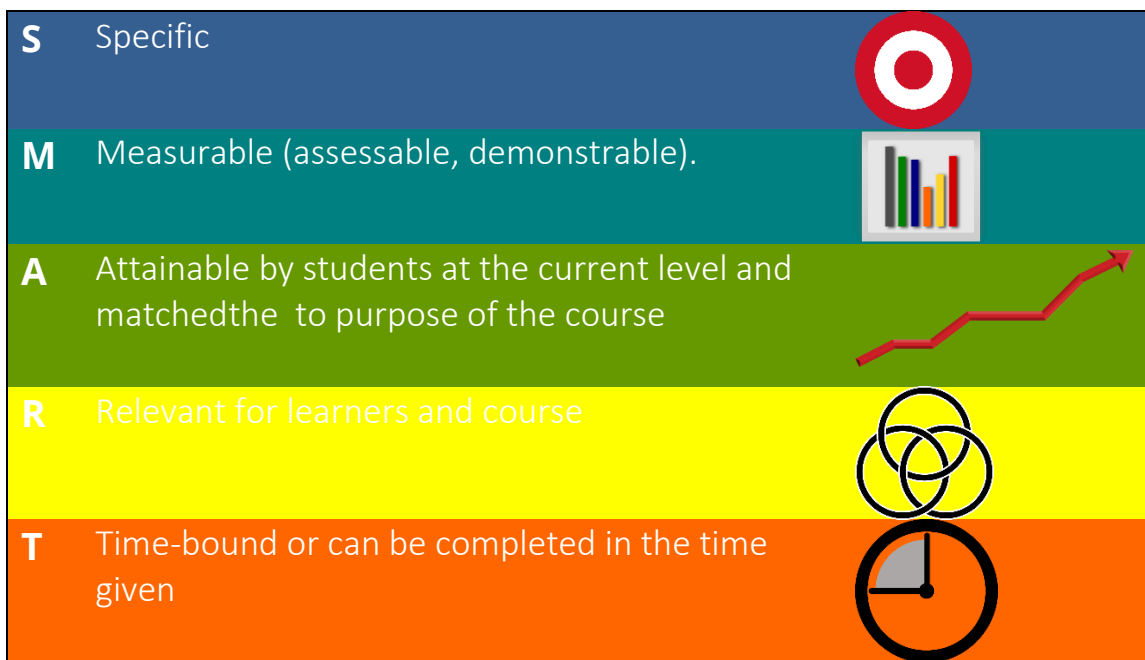


Learning outcomes should be defined as simple and unambiguous terms so that they are clearly understood by learners, lecturers, colleagues, employers and external examiners.



Learning outcomes should be **few enough and significant enough to be memorable and meaningful** – most courses might aim for 5 to 10 outcomes per module.

- Well-written learning outcomes are SMART (Greenleaf, 2008 in Miller-Young, 2018):



7.3. What action verbs should I avoid using?



UNDERSTAND	BE AWARE OF	APPRECIATE	BE CONSCIOUS OF
COMPREHEND	LEARN	GRASP	PERCEIVE
KNOW	VALUE	SEE	GET
ACCEPT	APPREHEND	HAVE A KNOWLEDGE OF	BE FAMILIAR WITH

Figure 13: The sinister sixteen: Verbs that are passive, internal and/or otherwise unobservable. Source: Potter & Kustra, 2012 (Miller-Young, 2018)

7.4. The following verbs may be of assistance when writing learning outcomes (Kennedy, 2006)

As already discussed, Bloom’s Taxonomy (Bloom, 1956) is one of the most useful aids for writing good learning outcomes. The taxonomy provides a ready-made list of verbs and hence is a useful “toolkit” that provides the vocabulary for writing learning outcomes.

- **KNOWLEDGE (Informative Objectives) - What a person knows?**

The learning outcomes of knowledge can be defined: as

- “At the end of this training module, the learner will be able to... or
- “On successful completion of this module learner will be able to...

Bloom proposed that our thinking can be divided into six increasingly complex levels from the simple recall of facts at the lowest level to evaluation at the highest level. This “thinking” area is commonly called the cognitive (“knowing”) domain since it involves thought processes.

Bloom’s taxonomy is frequently used for writing learning outcomes as it provides a ready-made structure and list of verbs.

<u>Knowledge</u>	<u>The corresponding list of VERBS</u>
Bloom’s taxonomy	
<u>KNOWLEDGE</u>	<p>Verbs:</p> <p>Arrange, collect, define, describe, duplicate, enumerate, examine, find, identify, label, list, memorise, name, order, outline, present, quote, recall, recognise, recollect, record, recount, relate, repeat, reproduce, show, state, tabulate, tell.</p> <p>Example:</p> <ul style="list-style-type: none"> • Define what behaviours constitute unprofessional practice in the solicitor-client relationship. • Describe the processes used in engineering when preparing a design brief for a client.
<u>COMPREHENSION</u>	<p>Verbs:</p> <p>Associate, change, clarify, classify, construct, contrast, convert, decode, defend, describe, differentiate, discriminate, discuss, distinguish, estimate, explain, express, extend, generalise, identify, illustrate, indicate, infer, interpret, locate, paraphrase,</p>

	<p>predict, recognise, report, restate, rewrite, review, select, solve, translate.</p> <p>Example:</p> <ul style="list-style-type: none"> • Classify reactions as exothermic and endothermic. • Recognise the forces discouraging the growth of the educational system in Ireland in the 19th century.
<p><u>APPLICATION</u></p>	<p>Verbs:</p> <p>Apply, assess, calculate, change, choose, complete, compute, construct, demonstrate, develop, discover, dramatize, employ, examine, experiment, find, illustrate, interpret, manipulate, modify, operate, organise, practice, predict, prepare, produce, relate, schedule, select, show, sketch, solve, transfer, use.</p> <p>Example:</p> <ul style="list-style-type: none"> • Construct a timeline of significant events in the history of Australia in the 19th century. • Modify guidelines in a case study of a small manufacturing firm to enable tighter quality control of production.
<p><u>ANALYSIS</u></p>	<p>Verbs:</p> <p>Analyse, appraise, arrange, break down, calculate, categorise, classify, compare, connect, contrast, criticise, debate, deduce, determine, differentiate, discriminate, distinguish, divide, examine, experiment, identify, illustrate, infer, inspect, investigate, order, outline, point out, question, relate, separate, sub-divide, test.</p> <p>Example:</p> <ul style="list-style-type: none"> • Debate the economic and environmental effects of energy conversion processes. • Compare the classroom practice of a newly qualified teacher with that of a teacher with 20 yearof s teaching experience
<p><u>SYNTHESIS</u></p>	<p>Verbs:</p> <p>Argue, arrange, assemble, categorise, collect, combine, compile, compose, construct, create, design, develop, devise, establish, explain, formulate, generalise, generate, integrate, invent, make, manage, modify, organise, originate, plan, prepare, propose, rearrange, reconstruct, relate, reorganise, revise, rewrite, set up, summarise</p>

	<p>Example:</p> <ul style="list-style-type: none"> • Relate the sign of enthalpy changes to exothermic and endothermic reactions. • Recognise and formulate problems that are amenable to energy management solutions.
<u>EVALUATION</u>	<p>Verbs:</p> <p>Appraise, ascertain, argue, assess, attach, choose, compare, conclude, contrast, convince, criticise, decide, defend, discriminate, explain, evaluate, grade, interpret, judge, justify, measure, predict, rate, recommend, relate, resolve, revise, score, summarise, support, validate, value.</p> <p>Example:</p> <ul style="list-style-type: none"> • Predict the effect of a change of temperature on the position of equilibrium. • Evaluate the key areas contributing to the craft knowledge of experienced teachers.

- **SKILL (Formative Objectives) - What a person can do?**

The learning outcome of a skill can be defined as:

“At the end of this training module, the learner will be able to... or

“On successful completion of this module learner will be able to...

<u>Skills</u>	<u>The corresponding list of VERBS</u>
<u>PSYCHOMOTOR DOMAIN</u>	<p>Verbs:</p> <p>Adapt, adjust, administer, alter, arrange, assemble, balance, bend, build, calibrate, choreograph, combine, construct, copy, design, deliver, detect, demonstrate, differentiate (by touch), dismantle, display, dissect, drive, estimate, examine, execute, fix, grasp, grind, handle, heat, identify, manipulate, measure, mend, mime, mimic, mix, operate, organise, perform (skilfully), present, record, refine, sketch, react, use.</p> <p>Example:</p> <ul style="list-style-type: none"> • Design a well-illustrated poster presentation to summarise the research project. • Operate the range of instrumentation specified in the module safely and efficiently in the chemistry laboratory. • Present the methodology and findings of the research project in an oral report.

Dave (1970 in Kennedy 2006) proposed a hierarchy consisting of five levels:

1. Imitation: Observing the behaviour of another person and copying this behaviour. This is the first stage in learning a complex skill.
2. Manipulation: Ability to perform certain actions by following instructions and practising skills.
3. Precision: At this level, the student has the ability to carry out a task with few errors and become more precise without the presence of the original source. The skill has been attained and proficiency is indicated by smooth and accurate performance.
4. Articulation: Ability to coordinate a series of actions by combining two or more skills. Patterns can be modified to fit special requirements or solve a problem.
5. Naturalisation: Displays a high level of performance naturally (“without thinking”). Skills are combined, sequenced and performed consistently with ease.

Simpson (1972 in Kennedy 2006) developed a more detailed hierarchy consisting of seven levels:

1. Perception: The ability to use observed cues to guide physical activity.
2. Set (mindset): The readiness to take a particular course of action. This can involve mental, physical and emotional disposition.
3. Guided response: The trial-and-error attempts at acquiring a physical skill. With practice, this leads to better performance.
4. Mechanism: The intermediate stage in learning a physical skill. Learned responses become more habitual and movements can be performed with some confidence and level of proficiency.
5. Complex Overt Responses: Physical activities involving complex movement patterns are possible. Responses are automatic and proficiency is indicated by accurate and highly coordinated performance with a minimum of wasted effort.
6. Adaptation: At this level, skills are well developed and the individual can modify movements to deal with problem situations or to fit special requirements.
7. Origination: The skills are so highly developed that creativity for special situations is possible.

- **COMPETENCE (ABILITIES) – What is a person required to do?**

Competence is manifested in **a specific work context or specific environment and to achieve an effect.**

Competences may not be assessed at all but indicate to employers and other agencies the type of standard of practical performance that graduates of the programme will display at the end of the programme.

Competences need to be precisely defined in the context in which the individual can perform what is required to do.

The learning outcome of competence can therefore be defined as:

- “At the end of the module the learner will acquire the responsibility and autonomy and will be able to...

Example 1:

Module Title: Environmental Microbial Genomics: the role and ecology of microbes in the environment

At the end of the module the learner will acquire responsibility and autonomy and will be able to:

- Outline the major classes of microbiota present in natural ecosystems.
- Explain how the physical, chemical and biological environment influences microbial activity.
- Describe, using examples, different types of ecological interactions involving microbes.
- Explain the general importance of microbial communities for ecosystem function.
- Describe, compare and contrast the methods that can be applied to study microbes and microbial communities in the environment.
- Explain, using examples, how diverse methods can be applied to understand microbial function in natural ecosystems.

Example 2:

Module Title: Methods in Microbiology


At the end of the module the learner will acquire the responsibility and autonomy and will be able to:

- Identify the steps required to complete each experiment individually and in a group.
- Define the individual steps required to complete the experiment.
- Arrange the steps in sequence so that the experiment can be completed.
- Organise the reagents, cultures, media etc. that are required for the experiment.
- Maintain a clear scientific record of each experiment and the data generated from the experiment in a laboratory notebook.
- Evaluate the data received individually and in a group discussion.
- Identify, individually and in a group discussion, the conclusions that can be drawn from the data.
- Present the completed experiment in a written report.
- Present the completed experiment in an oral report, identifying the outcomes of each of the steps above and paying particular attention to the conclusions.

- **COMPETENCY - What attitudes, feelings, values, appreciations, motivations, or priorities of your discipline or profession will be imprinted on your students?**

The learning outcome of competency can be defined: as

- “At the end of this training module, the learner will be able to... or
- “On successful completion of this module learner will be able to...

	<u>The corresponding list of VERBS</u>
<p>AFFECTIVE DOMAIN</p> <ul style="list-style-type: none"> • Attitudes • Feelings • Values • Appreciations • Motivations • Priorities <p style="text-align: center;"></p> <p style="text-align: center;">Will be affected/changed</p> <p style="text-align: center;">The changes will be evident in a person’s professional or personal life.</p>	<p>Verbs:</p> <p>Act, adhere, appreciate, ask, accept, answer, assist, attempt, challenge, combine, complete, conform, cooperate, defend, demonstrate (a belief in), differentiates, discuss, display, dispute, embrace, follow, hold, initiate, integrate, justify, listen, order, organise, participate, practice, join, share, judge, praise, question, relate, report, resolve, share, support, synthesise, value.</p> <p>Example:</p> <ul style="list-style-type: none"> • Display a willingness to communicate well with patients • Resolve conflicting issues between personal beliefs and ethical considerations

7.6. Transformative learning and sustainability competencies (GreenComp, 2022)

A competence-based education that helps learners develop sustainability skills based on knowledge and attitudes can help promote responsible action and stimulate willingness to take or demand action at local, national and global level. Becoming competent in sustainability issues will enable learners overcome the cognitive dissonance that comes from knowing about an issue but lacking the agency to act.



Sustainable competences stimulate TRANSFORMATIVE LEARNING, which is the key to enhancing a positive shift towards sustainable behaviour. It will enable them to face and shape present and future Grand challenges. They emphasize the affective domain of competences (attitudes, motives, feelings and values).



Figure 14: Visual representation of GreenComp.
Source: GreenComp, 2022

- Sustainability competences, their descriptors and nurtured attitudes

AREA	COMPETENCE	DESCRIPTOR	ATTITUDE
1. Embodying sustainability values	1.1 Valuing sustainability	To reflect on personal values; identify and explain how values vary among people and over time, while critically evaluating how they align with sustainability values	<ul style="list-style-type: none"> • is prone to acting in line with values and principles for sustainability.
	1.2 Supporting fairness	To support equity and justice for current and future generations and learn from previous generations for sustainability.	<ul style="list-style-type: none"> • is committed to respecting the interests of future generations.
	1.3 Promoting nature	To acknowledge that humans are part of nature, and to respect the needs and rights of other species and of nature itself in order to restore and regenerate healthy and resilient ecosystems.	<ul style="list-style-type: none"> • cares about a harmonious relationship existing between nature and humans.
2. Embracing complexity in sustainability	2.1 Systems thinking	To approach a sustainability problem from all sides; to consider time, space and context in order to understand how elements interact within and between systems	<ul style="list-style-type: none"> • is concerned about the short- and long-term impacts of personal actions on others and the planet.
	2.2 Critical thinking	To assess information and arguments, identify assumptions, challenge the status quo, and reflect on how personal, social and cultural backgrounds influence thinking and conclusions.	<ul style="list-style-type: none"> • trusts science even when lacking some of the knowledge required to fully understand scientific claims
	2.3 Problem framing	To formulate current or potential challenges as a sustainability problem in terms of difficulty, people involved, time and geographical scope, in order to identify suitable approaches to anticipating and preventing problems, and to mitigating and adapting to already existing problems.	<ul style="list-style-type: none"> • listens actively and shows empathy when collaborating with others to frame current and potential sustainability challenges.

3. Envisioning sustainable futures	3.1 Futures literacy	To envision alternative sustainable futures by imagining and developing alternative scenarios and identifying the steps needed to achieve a preferred sustainable future.	<ul style="list-style-type: none"> is aware that the projected consequences on self and community may influence preferences for certain scenarios above others.
	3.2 Adaptability	To manage transitions and challenges in complex sustainability situations and make decisions related to the future in the face of uncertainty, ambiguity and risk.	<ul style="list-style-type: none"> is willing to discontinue unsustainable practices and try alternative solutions
	3.3 Exploratory thinking	To adopt a relational way of thinking by exploring and linking different disciplines, using creativity and experimentation with novel ideas or methods.	<ul style="list-style-type: none"> is committed to considering sustainability challenges and opportunities from different angles.
4. Acting for sustainability	4.1 Political agency	To navigate the political system, identify political responsibility and accountability for unsustainable behaviour, and demand effective policies for sustainability.	<ul style="list-style-type: none"> demands political accountability for unsustainable behaviour
	4.2 Collective action	Act for change in collaboration with others.	<ul style="list-style-type: none"> is willing to engage with others to challenge the status quo.
	4.3 Individual initiative	To identify my own potential for sustainability and to actively contribute to improving prospects for the community and the planet.	<ul style="list-style-type: none"> is confident about anticipating and influencing sustainable changes

7.7. The European Entrepreneurship Competence Framework (EntreComp, 2018)

Farmers need additional knowledge, skills and attitudes to develop an entrepreneurial mindset, which allows them to move from “a farm” to “a firm”. This is even more apparent in the case of organic farmers, where yields per hectare are lower and production costs higher. It is not just economic know-how, but also skills such as flexibility, resourcefulness, creativity and open-mindedness that are even more important.

The European Entrepreneurship Competence Framework – EntreComp is developed as a reference framework to explain what is meant by an entrepreneurial mindset.

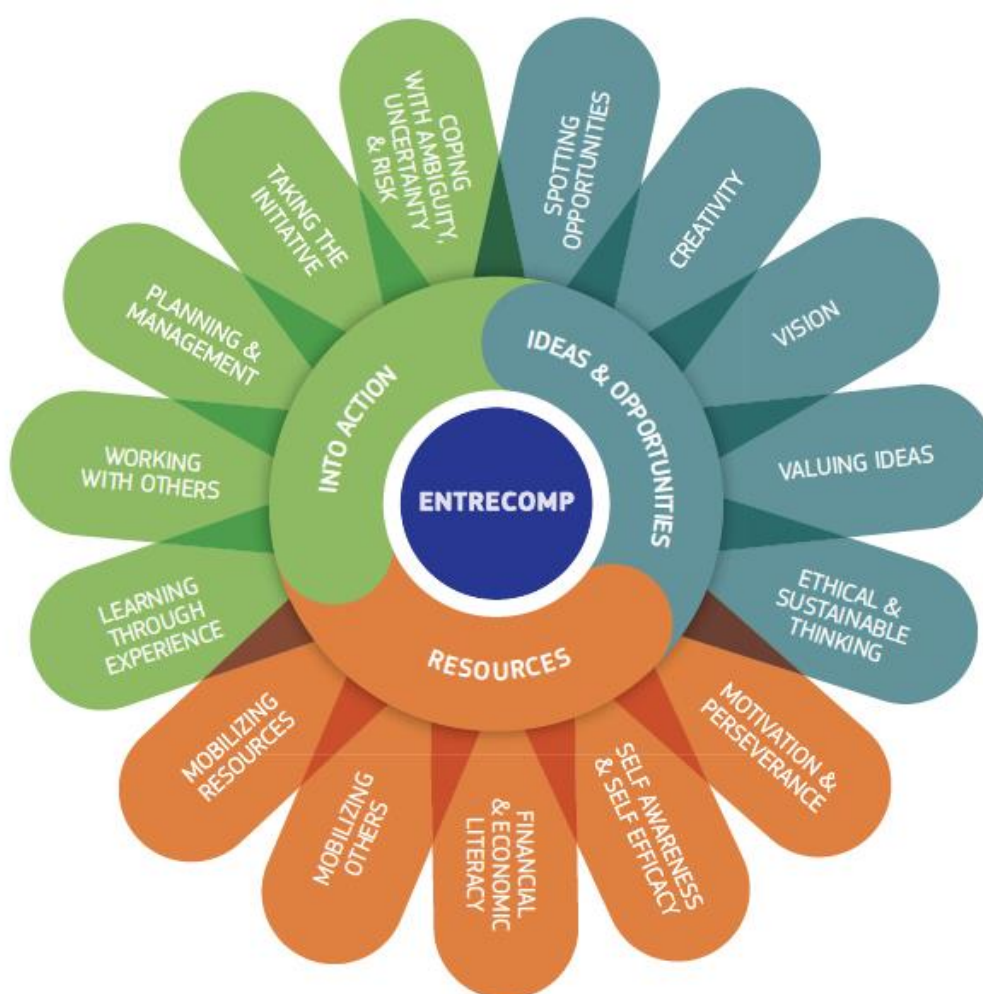


Figure 15: 15 competences, identified by EntreComp, which help to develop an entrepreneurial mindset. Source: EntreComp, 2018

8. THE FARM4SD MODULAR TRAINING COURSE

8.1. Modules of the Farm4SD modular training course

The Farm4SD Modular Training Course is a needs-oriented blended-learning curriculum and training modular package for farmers, especially for small and medium farm holders, to equip them with knowledge and skills. The Modular Training Course consists of four Modules:

- Modul 1: The pillars of the sustainable agriculture
- Modul 2: Entrepreneurial Skills for the sustainable farmers
- Modul 3: Financial Literacy and Funding Opportunities for the Green Transformation of the Agricultural Sector
- Modul 4: Essential Soft Skills for the sustainable Farmers



Figure 16: The Farm4SD curriculum will contain 4 modules.

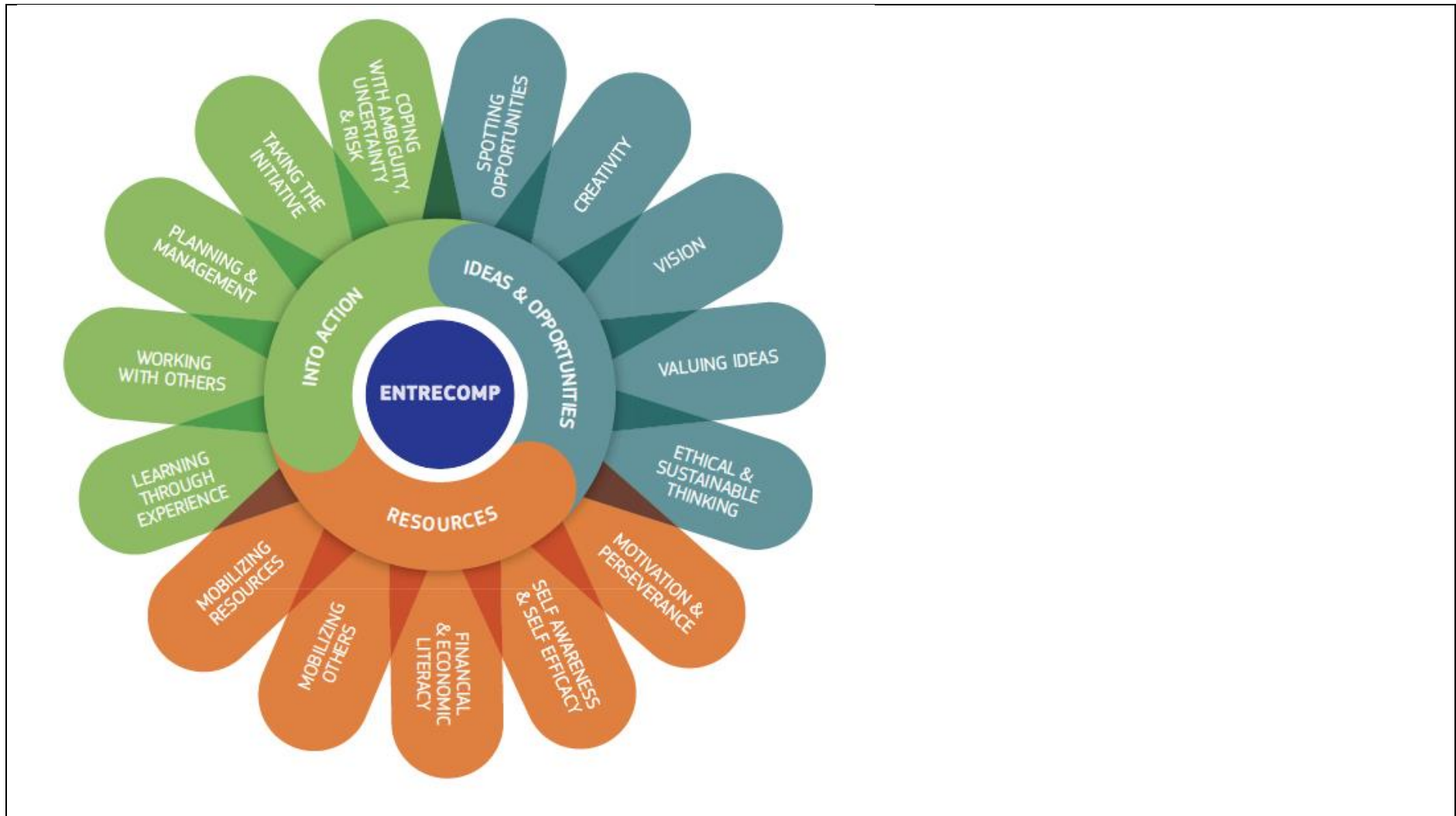
Module 1: Pillars of Sustainable Agriculture			
1. GENERAL INFORMATION			
1.1 Name of the module	Pillars of Sustainable Agriculture	1.2 Hours (1 hour is 45 minutes)	10 hours: 6,5 hours – face to face meeting and 3,5 hours – of individual learning
1.3 Training course	Farm4SD Modular Training Course	1.4 Workload corresponds to n. of ECTS points + n. of micro credentialss, EQF level	1,5 ECTS points or 1 micro credential, 4th level of EQF
2. OBJECTIVES AND LEARNING OUTCOMES			
2.1 Objectives	2.1.1 At the end of the module, the learner will have the knowledge and skills to be able to understand the basics of sustainable agriculture and adjusted farming management practices. The learner will be able to reflect on a sustainable economy as well as on the sustainable agricultural sector with all its aspects from social, ecological and ecoperspectivesective and the challenges and chances within this framework for the single farm business embedded in existing and new value chains in the field of food, feed, fibre, energy and services. The learner will be enabled to think critically and improve existing value chains as well as processes, better adapt to the market, keeping open minded for tradition and innovation in the sector.		
2.2 Learning outcomes expected at the level of the module			
2.2.1 Knowledge At the end of the module the participant will be able to:	2.2.1.1. Explain Sustainability as a concept 2.2.1.2. Recognize Sustainable Agriculture 2.2.1.3. See the link between sustainability within the whole economy, Agriculture and your single farm 2.2.1.4 Check Examples of Sustainable Farming		

<p>2.2.2 Skills</p> <p>At the end of the module the participant will be able to:</p>	<p>2.2.2.1. Identify and introduce Sustainable Farming concepts</p> <p>2.2.2.2. Think about Strategies to improve Sustainable Farming</p> <p>2.2.2.3. Judge the effects of changes in the production process or product selling</p> <p>2.2.2.4. Understand concepts linked to the sustainable economy like Reuse, Cascade Use Low Input</p> <p>2.2.2.5. Consider partnership, cooperation or cooperatives in the market</p>
<p>2.2.3 Competences and competencies (which also includes attitudes)</p> <p>At the end of the module the participant will have acquired the responsibility and autonomy and will be able to:</p> <p>At the end of the module, the participant will ...</p>	<p>2.2.3.1. Acknowledge the importance of Sustainability in day-to-day business.</p> <p>2.2.3.2. Embedding sustainable strategies and concepts in the planning of an agricultural business.</p> <p>2.2.3.3. Demonstrate a willingness to implement sustainable farming into practice</p> <p>2.2.3.4. Demonstrate confidence to constantly work on the steady improvement of the sustainable state of the art on the farm</p>
<p>2.3. Please present the content of your module with 10 bullet points (could you please describe the content in more detail than just list competences).</p>	
<ul style="list-style-type: none"> - Let's start with general definitions of what Sustainability is and what is Multifunctionality, Green Economy, and Circular Economy - analysis according to each individual, what their perception of sustainability and further terms is/ was - break down of sustainability from sustainable economy over sustainable agriculture to sustainable single farm - give a glance at specific concepts within sustainability: circular economy, Reuse, Cascade Use - give a glance at specific concepts in farming: Low Input, regional economy, Reuse, Cascade Use - take a look at cooperation, partnership, cooperatives - showing possibilities of sustainable farming within product processing - showing possibilities of sustainable farming within product selling - Applying this knowledge to long-term sustainability strategies for the single farm 	



Module 2: Entrepreneurial Skills for the sustainable farmer			
1. GENERAL INFORMATION			
1.1 Name of the module	Empowering entrepreneurship skills for farmers	1.2 Hours (1 hour is 45 minutes)	10 hours: 6,5 hours – face to face meeting and 3,5 hours – of individual learning
1.3 Training course	Upgrade training to enhance the entrepreneurship skills	1.4 Workload corresponds to n. of ECTS points + n. of micro credentials, EQF level	1,5 ECTS points or 1 micro credential, 4th level of EQF
2. OBJECTIVES AND LEARNING OUTCOMES			
2.1 Objectives	2.1.1 At the end of the module the learner will have gained the knowledge and skills to be able to develop a sustainable long-term business strategy, which encompasses financial liability, customer orientation and resilience for unforeseen circumstances.		
2.2 Learning outcomes expected at the level of the module			
2.2.1 Knowledge	2.2.1.1. Know how to adjust business plan strategies based on customer feedback		
At the end of the module the participant will be able to:	2.2.1.2. Understand the principles of new work and adjust human resource management accordingly		
	2.2.1.3. Understand the core principles of sustainability in farming		
2.2.2 Skills	2.2.2.1. Apply product-market fit principles		
At the end of the module the participant will be able to:	2.2.2.2. Develop business canvas and set long-, medium- and short-term goals		

	<p>2.2.2.3. Be able to conduct market research and make interpretations of market research results</p> <p>2.2.2.4 be able to find new marketing channels for products</p>
<p>2.2.3 Competences and competencies (which also includes attitudes)</p> <p>At the end of the module the participant will have acquired the responsibility and autonomy and will be able to:</p> <p>At the end of the module, the participant will ...</p>	<p>2.2.3.1. Conduct calculated risk strategies in uncertain circumstances</p> <p>2.2.3.2. Be able to adjust business plan strategies flexible and quickly</p> <p>2.2.3.3. Integrate day-to-day business digital efficiency</p> <p>2.2.3.4. Constantly looking for new technologies to improve business performance</p> <p>2.2.3.5 Identify business opportunities in agriculture</p>
<p>2.3. Please present the content of your module with 10 bullet points (could you please describe the content in more detail than just list ccompetencies.</p>	
<ul style="list-style-type: none"> - Starting with general market trends in sustainability - Conducting a product-market fit based on customer needs and feedback - Identifying mechanisms to constantly improve technology processes - Adjusting own marketing strategy to address the pre-defined customers - Analyse current day-to-day business routines and improve digitalization aspects - Use business model canvas to put all course learning units into a long-term strategy, based on which short- and medium-term key performance indicators are defined 	



Module 3: Financial Literacy and Funding Opportunities for the Green Transformation of the Agricultural Sector

1. GENERAL INFORMATION

1.1 Name of the module	Financial Literacy and Funding Opportunities for the Green Transformation of the Agricultural Sector	1.2 Hours (1 hour is 45 minutes)	10 hours: 6,5 hours – face to face meeting and 3,5 hours – of individual learning
1.3 Training course	Farm4SD Modular Training Course	1.4 Workload corresponds to n. of ECTS points + n. of micro credentialss, EQF level	1,5 ECTS points or 1 micro credential, 4th level of EQF

2. OBJECTIVES AND LEARNING OUTCOMES

2.1 Objectives	2.1.1 At the end of the module the learner will have gained the knowledge and skills to be able to act as a financially literate entrepreneur, ensuring that his/her agricultural business can last over the long term, by applying the basic principles of managing to finance and identifying public and private sources of funding, including the alternative ones.
2.2 Learning outcomes expected at the level of the module	
2.2.1 Knowledge At the end of the module the participant will be able to:	2.2.1.1. Explain what Financial Management is and its importance 2.2.1.2. Define what a business budget is 2.2.1.3. Associate basic financial tools/principles such as cash flow, profit and loss statement, break-even, and return on investment to his/her agricultural business 2.2.1.4. Describe the public and private sources of funding for an agricultural business
2.2.2 Skills At the end of the module the participant will be able to:	2.2.2.1. Create a budget for his/her agricultural business 2.2.2.2. Apply financial planning and forecasting concepts for his/her agricultural business 2.2.2.3. Identifying public and private sources of funding. 2.2.2.4. Choose the most appropriate sources of funding to start up or expand his/her agricultural business.

<p>2.2.3 Competences and competencies (which also includes attitudes)</p> <p>At the end of the module the participant will have acquired the responsibility and autonomy and will be able to:</p> <p>At the end of the module, the participant will ...</p>	<p>2.2.3.1. Acknowledge the importance of financial planning and forecasting in his/her everyday business operations</p> <p>2.2.3.2. Display a willingness to create a financial sustainable agricultural business.</p> <p>2.2.3.3. Differentiate between the various funding sources appropriate for his/her agricultural business</p> <p>2.2.3.4. Display confidence in finding the right funding opportunities for developing his/her agricultural business in a sustainable way</p>
<p>2.3. Please present the content of your module with 10 bullet points (could you please describe the content in more details than just list competences).</p>	
<ul style="list-style-type: none"> ➤ Financial Literacy of EU farmers (based on EntreComp) <ul style="list-style-type: none"> • Creating a budget for my business • Financial Management: Applying financial planning and forecasting concepts for my business ➤ Identifying public and private sources of funding (based on EntreComp) <ul style="list-style-type: none"> • EU funding available at national or regional levels <ul style="list-style-type: none"> ○ European Agricultural Fund for Rural Development (EAFRD) ○ European Regional Development Fund (ERDF) ○ European Social Fund (ESF) ○ Cohesion Fund (CF) ○ European Maritime & Fisheries Fund (EMFF) • EU funding available at the EU level <ul style="list-style-type: none"> ○ EASME - Executive Agency for SMEs ○ Horizon 2020 ○ EUROSTARS ○ COSME - EASME - Executive Agency for SMEs 	

- Erasmus for Young Entrepreneurs (EYE) - Erasmus+
- European Investment Fund
- LIFE+ Programme

➤ **Alternative Forms of Funding**

- Crowdfunding
- Micro-loans (private initiatives)
-

Modul 4: Essential Soft Skills for the Sustainable Farmer

1. GENERAL INFORMATION

1.1 Name of the module	Essential Soft Skills for the Sustainable Farmer	1.2 Hours (1 hour is 45 minutes)	10 hours: 6,5 hours – face to face meetings and 3,5 hours –of individual learning
1.3 Training course	Farm4SD Modular Training Course	1.4 Workload corresponds to n. of ECTS points + n. of micro credentialss, EQF level	1,5 ECTS points or 1 micro credential, 4th level of EQF

2. OBJECTIVES AND LEARNING OUTCOMES

2.1 Objectives	2.1.1 At the end of the module, the learner will have the knowledge and skills to be able to apply soft skills such as communication, critical thinking, teamwork, creativity, agility, and networking as an entrepreneur to his/her farm, thus ensuring the long-term viability of his/her agricultural business. With this knowledge, the learner will be able to understand oneself, design and plan farm projects more confidently, better communication with the customer, think critically and improve processes, better adapt to the market, and be even more struggling in his/her area of expertise.
2.2 Learning outcomes expected at the level of the module	

<p>2.2.1 Knowledge</p> <p>At the end of the module the participant will be able to:</p>	<p>2.2.1.1. Explain what are soft skills</p> <p>2.2.1.2. Recount what soft sk are and describe it. them.2.1.3. Tell examples of soft skills</p>
<p>2.2.2 Skills</p> <p>At the end of the module the participant will be able to:</p>	<p>2.2.2.1. Identify and introduce oneself as an agricultural business</p> <p>2.2.2.2. detect where he/she needs to do improvements on soft skills for his/her agricultural business</p> <p>2.2.2.3. Use model of soft skills in the practicasescase in</p> <p>2.2.2.4. Build more confidential person in the agricultural business</p>
<p>2.2.3 Competences and competencies (which also includes attitudes)</p> <p>At the end of the module the participant will have acquired the responsibility and autonomy and will be able to:</p> <p>At the end of the module, the participant will ...</p>	<p>2.2.3.1. Acknowledge the importance of soft skills in day-to-day business.</p> <p>2.2.3.2. Distinguish and apply soft skills in the different stages of planning an agricultural business.</p> <p>2.2.3.3. Demonstrate a willingness to use soft skills</p> <p>2.2.3.4. . Demonstrate confidence in using soft skills to identify appropriate options for the sustainable development of their agricultural enterprise.</p>
<p>2.3. Please present the content of your module with 10 bullet points (could you please describe the content in more detail than just list competences).</p>	
<ul style="list-style-type: none"> - Let's start with general definitions and definitions of what soft skills are, - analysis according to each individual, how aware they are of their skills and where the gaps are, - how to bring soft skills into the on-farm activities, - using soft skills to increase self-confidence, to better present oneself in the business world, - how to adapt your marketing strategy to appeal to predefined customers through the upgrading of soft skills, - Applying soft skills knowledge to long-term strategies. 	

8.2. The structure of the Farm4SD Modular Training Course

1. Activities planning in line with learning outcomes

- Tutor's handbook with lessons plan (Template 1.1), which will include special section for online adaptations to proposed face-to-face activities
- Activity handout (Template 1.2) for independent learning

2. Preparation of materials

- Powerpoint templates (Templates 1.3)
- In case of presenting your topics by using only images, then you have to provide in the notes section the content to be presented.

3. Fill out micro-credentials elements for easier validation of the training.

- Form on the page 17 (Figure 8: EU standards for developing the Farm4SD micro-credentials. Adapted to Futures et al., 2020)



Face – to – Face Training

Per module:

- 6,5 hours (45 mins x 6,5)
- Learning material to be developed:
 - One tutors handbook, including the lesson plan and activities that are going to be implemented during the training delivery – Template 1.1 & Template 1.2
 - Powerpoint presentation that is going to be used by the trainer, including notes for the learners – Template 1.3
 - Learners workbook, that will be generated by the Powerpoint presentation – Template 1.4

Self – directed (Asynchronous) Learning

Per module:

- 3,5 hours (45 mins x 3,5)
- Learning material to be developed:
 - Additional learning resources (web resources) – Template 2.1
 - Learning activity – Template 2.2
 - Case study – Template 2.3

Synchronous Online Training

Per module:

- 6,5 hours
- Learning material to be developed:
 - One tutors handbook, including the lesson plan and activities that are going to be implemented during the training delivery
 - Powerpoint presentation that is going to be used by the trainer, including notes for the learners
 - Learners workbook, that will be generated by the Powerpoint presentation

Learner's workbook will accelerate active learning.

- Template 1.3
- For easier implementation of workbook in learning process with solutions, partners will also prepare a Guidelines.

Example:

For your information you can visit the e-learning platform of Wires-Crossed project, register to the course and check the way the learning resources of the IO2-Community Media Skills Development Resources were uploaded:
<https://wirescrossed.eu/elearning/login/index.php>

These learning resources were also uploaded on the project's website as files that include all the material developed for all the modules: <https://wirescrossed.eu/outputs/>

8.3. Self-directed Learning accompanying face-to-face and synchronous or asynchronous online learning

The material that will be developed for the self-directed learning per module for face-to-face, synchronous or asynchronous online learning can be constituted by:

- Self-directed Learning Resources: resources derived from the web, such as articles, videos, podcasts, white papers etc. in national languages or English (Template 2.1) and will be presented as a handbook. Each handbook will contain five (5) resources,
- 1 activity for self-directed learning (Template 2.2),
- 1 case study for self-directed learning (Template 2.3).

The templates for developing the self-directed learning material are available in Annex II of this document.

For your information, you can visit the e-learning platform of the Wires-Crossed project, register to the course and check the way the learning resources of the IO2-Community Media Skills Development Resources were uploaded: <https://wirescrossed.eu/elearning/login/index.php>

8.4. Formative assessment

In the Farm4SD training, great attention is paid to learning assessment and providing feedback information. We will encourage formative assessment, where the workshop animator and participants jointly set learning objectives and check that they are being achieved according to set benchmarks.

Feedback fulfils 3 basic functions:

- It explains how far learners have come and what level of knowledge they have reached,
- it encourages learners to look for learning gaps,
- it offers them the opportunity and a way to further address the issues.

The workshop animator, the learners of each learning group (in the case of team work - peer evaluation) and individually (self-evaluation) are involved in the exchange of feedback.

The feedback should be (Wiggins, 2012):

- goal-referenced;
- tangible and transparent;
- actionable;
- user-friendly (specific and personalized);
- timely;
- ongoing.

Questions to help participants (and workshop animator) identify the next steps in the learning process:

PRIOR KNOWLEDGE:

- What knowledge and skills do I need to continue learning successfully? Which knowledge have I already acquired? How will I acquire the knowledge and skills I still lack?

LEARNING OBJECTIVES AND SUCCESS CRITERIA:

- Which knowledge and skills are essential for me to continue learning in order to acquire them? How will I know that I know?

IMPLEMENTING THE ACTIVITY:

- What will we do? What will the individuals in the group do? What will we be solving/researching/elaborating/executing? Will we need help? Who will we ask for help?

COOPERATIVE LEARNING:

- How will we learn together? Is there something we can learn from another group in the class? How will I give feedback on my classmates?

Phases of formative assesment:

Evaluations - feedbacks could be recorded in a learning journal and shared in constructive dialogue between the participants and the workshop animator.

BEFORE THE MODULE STARTS ...
<ul style="list-style-type: none"> • participants and workshops animators fill in evaluation questionnaire, • questions should be related to prior knowledge and expectations.
ONCE THE MODULE STARTS
<ul style="list-style-type: none"> • Based on the analysis, the workshop animator can adapt the learning objectives and the content of the training, which are presented to the participants at the course's beginning. • Together they agree to pursue these learning objectives. Participation in the design of the learning objectives is a motivational element that encourages participants to assess the proposed learning process.
WHEN THE MODULE ENDS
<ul style="list-style-type: none"> • At the end, workshop animator and participants again fill in an evaluation questionnaire to review their progress towards the learning objectives. • The questions should contain open-type questions as well as closed-type questions. • After the analysis, the learners should be given the opportunity to revisit the point of their identified knowledge gap.

* The unit of evaluation does not have to be the whole module, it can also be a single major activity or meeting.

What does a workshop animator gain from introducing formative assesment?

- The opportunity to tailor teaching to the needs of each participant in the group;
- Insight into different learning styles of participant;
- More engaged participants who are able to manage their own learning process;
- Shifting responsibility for learning and knowledge to participant;
- Opportunity to increase motivation and the quality of participant's knowledge;
- Feedback on where participants are on their way to the goal, insight into their ways of thinking and understanding, to which the workshop animator adapts his/her teaching;

What does the participant/learner gain with formative assessment?

- A learner who knows the benchmarks can gain control over his/her learning performance, which allows him/her to experience the purpose of learning as a challenge rather than as a source of harmful stress;
- The learner gains insight into how he/she learns and how he/she directs his/her own learning process (how am I doing, what am I good at, what do I need to do to move forward, what am I still missing on the road to success);
- Feedback offers learners the possibility and the way to overcome shortcomings;
- It provides an opportunity for collaboration and quality dialogue with the workshop animator and other participants in group;
- It makes the learner aware of his/her progress, which increases his/her self-confidence.
- His/her learning pathway is clearly structured and supported;
- Develops flexibility and adaptability in planning and implementing the pathway to the goal;

PAST-ORIENTED EVALUATION	FUTURE-ORIENTED EVALUATION
<p>This showed me that I can...</p> <p>Sample analysis means ...</p> <p>My mistake was ...</p> <p>I could...</p> <p>I was surprised by...</p> <p>I enjoyed this because</p> <p>I proved ...</p> <p>The easiest part of the task was</p> <p>While learning, I was wondering</p> <p>During the process, I realised</p>	<p>To become better, I must ...</p> <p>I need to practise this, because ...</p> <p>If I were to do it again, I would change ...</p> <p>In the future, it would help me to ...</p> <p>I am wondering ...</p> <p>For better understanding, I will ...</p> <p>To understand this, I must ...</p> <p>I would like to know why this happened..., because I would</p>



9. Sources:

Bianchi, G., Pisiotis, U. and Cabrera Giraldez, M., GreenComp The European sustainability competence framework (online), Punie, Y. and Bacigalupo, M. editor(s), EUR 30955 EN, Publications Office of the European Union, Luxembourg, 2022, ISBN 978-92-76-46485-3, doi:10.2760/13286, JRC128040 (cited by: 11.12.2022). Available on: <https://publications.jrc.ec.europa.eu/repository/handle/JRC128040>

Fritz, L and Riede, M. YOUrALPS; Political strategies on Education for sustainable development and Mountain – oriented education. Path to implementation into the formal education system of five Alpine adjacent states. Institute of Geography. Innsbruck. 2018 (online). (cited by: 15.10.2022). Available on: <https://www.alpine-space.org/projects/youralps/en/project-results/comparative-report>

Futures, S.H., Andersen T. and Nedergaard Larsen, K. Executive summary of a European approach to micro-credentials. The output of the micro-credentials higher education consultation group (online). (cited by: 11.12.2022) 2020 Available on: <https://op.europa.eu/en/publication-detail/-/publication/7a939850-6c18-11eb-aeb5-01aa75ed71a1>

Grah, J., Holcar Brunauer, A., Rutar Ilc, Z., Roglič Ožek S., Gramc, J., Skvarč, M., Čuk, A., Žarkovič Adlešič, B., Cotič Pajntar J., Zore, N. Inclusive school – Guidelines for teachers and other school staff. The National Education Institute Slovenia, Ljubljana: 7 books (5th chapter)

Hrastinski, S. What Do We Mean by Blended Learning? TechTrends (online). 2019, Volume 63 (cited by 11.12.2022). Available on: https://www.researchgate.net/publication/330935647_What_Do_We_Mean_by_Blended_Learning

Holcar Brunauer, A., Bizjak, C., Cotič Pajntar, J., Borstner, M., Eržen, V., Kerin, M., Komljanc, N., Kregar, S., Margan, U., Novak, L., Rutar Ilc, Z., Zajc, S. in Zore, N. 2017. Formative assesment for learning support – Guidelines for teachers and other school staff. The National Education Institute Slovenia, Ljubljana: 7 books (5. poglavje)

Kennedy, D. 2006. Writing and using learning outcomes: a practical guide (online). Cork, University College Cork; 2006 (cited by: 11.12.2022). Available on: <https://cora.ucc.ie/bitstream/handle/10468/1613/A%20Learning%20Outcomes%20Book%20D%20Kennedy.pdf?sequence=1&isAllowed=y>

Learning outcomes approaches in VET curricula A comparative analysis of nine European countries (online). 2010; CEDEFOP, Luxembourg: Publications Office of the European Union (cited by: 11.12.2022). Available on: https://www.cedefop.europa.eu/files/5506_en.pdf

Menapace, L., Colson, G. and Raffaelli, R. Climate change beliefs and perceptions of agricultural risks: An application of the exchangeability method (online). Global Environmental Change. 2015, Volume 35, pages 70 – 81 (cited by: 11.12.2022). Available on: <https://www.sciencedirect.com/science/article/abs/pii/S0959378015300121?via%3Dihub>





Miller-Young, J. A Guide to Learning Outcomes at the University of Alberta (online). The University of Alberta, Centre for teaching and learning. 2018 (cited by: 11.12.2022). Available on: <https://www.ualberta.ca/centre-for-teaching-and-learning/media-library/learning-outcomes/learning-outcomes-guide-uofa.pdf>

Moon, J. E. Reflection in higher education learning (online). 2001, Working Paper 4. York, UK: The Higher Education Academy. (cited by: 15.10.2022). Available on: <https://nursing-midwifery.tcd.ie/assets/director-staff-edu-dev/pdf/PD-%20Working-Paper-4-Moon.pdf>

Ryan, C., Bergin, M., Titze, S., Ruf, W., Kunz, S. and Wells, J.S.G. ECVET and ECTS credit equivalency in higher education – A bridge too far (online)? European Journal of Education. 2018, Volume 53, pages 1 – 11 (cited by: 11.12.2022). Available on: https://www.researchgate.net/publication/328285464_ECVET_and_ECTS_credit_equivalency_in_higher_education_-_A_bridge_too_far

Sati, T. and Drechsler, A. A Competence-Focused Assessment Framework for Project Management Certifications. Twenty-first Americas Conference on Information Systems (online). 2015; Puerto Rico (cited by: 11.12.2022). Available on: <https://aisel.aisnet.org/amcis2015/ITProjMan/GeneralPresentations/3>

Teacher Academy. Publications, developed for the online course Bridging Distance and In-School Learning – Blended Learning in Practice, 2021. Available on: https://www.schooleducationgateway.eu/en/pub/teacher_academy/catalogue/detail.cfm?id=177634

Wiggins, G.. Seven Keys to Effective Feedback. Educational Leadership. 2012 Volume 70, pp: 10-16. Available on: [Wiggins, G. \(2012\). Seven Keys to Effective Feedback. Educational Leadership, 70, 10-16. - References - Scientific Research Publishing \(scirp.org\)](#)

Winterton, J., Delamare - Le Deist, F., Stringfellow, E. Typology of knowledge, skills and competences: clarification of the concept and prototype (online). 2006. Cedefop Reference series 64, Luxembourg: Office for Official Publications of the European Communities. (cited by: 11.12.2022). Available on: https://www.cedefop.europa.eu/files/3048_en.pdf

Young, C. and Perović, N. Rapid and Creative Course Design: As Easy as ABC (online)? Procedia - Social and Behavioral Sciences. 2016. Volume 228, pages 390 – 395 (cited by 12.12.2022). Available on: https://www.researchgate.net/publication/305892523_Rapid_and_Creative_Course_Design_As_Easy_as_ABC

Young, C. and Perović, N. ABC Learning Design, ABC to VLE Erasmus+ project (online). UCL Digital Education. 2020 (cited by: 12.12.2022). Available on: https://education-outofthebox.eu/pluginfile.php/912/mod_resource/content/2/ABC_LD%20workshop%20-%20toolkit%202020.pdf



10. ANNEXES

10.1. Annex I – Templates for Face-to-Face and Synchronous Online Learning

Template 1.1 Tutor's Handbook with Lesson Plan

Module Title <i>(Based on the Curriculum Framework)</i>		
Target Group <i>(Based on the Curriculum Framework)</i>		
Purpose of this module <i>(Why this module is developed? Please refer to the problem that exists and this module will provide a solution, the target group and the desired change to be accomplished.)</i>		

<p>Learning Outcomes of the Module</p> <p><i>(Based on the Curriculum Framework)</i></p>		
<p>Module duration</p> <p><i>(Based on the Curriculum Framework)</i></p>		
<p>Topics</p> <p><i>(Based on the Curriculum Framework)</i></p>		
<p>Preparation</p> <p><i>(What do you need before the implementation of the module? The location where it will take place [indoor/outdoor]? Do participants need preliminary knowledge? If so, what kind of material do you need to provide them?)</i></p>		
<p>The Lesson Plan for F2F Learning</p>		

Guidelines

- **Please note that in the lesson plan a special section is included concerning the online adaptation to proposed F2F activities.**
- For Energizers: Icebreaker games that can facilitate team-building and that can be an introduction to the topic of the workshop or that makemake group ready for what follows in the form of an activity or a presentation.
- For Activities: provide step-by-step instructions. Describe in a bulleted list (or not, depending on the activity) all the steps to be followed for the realisation of the activity. The number also the activity.
- For Presentations: provide the topics that are going to be introduced e.g. terms, best practices etc.
- Training methods that are going to be used for F2F learning and synchronous online learning, such as Presentations, Plenary Session, Discussion, Questions & Answers, Team Activities- Assignments, Brainstorming or other Ideation Methods, Feedback, Self-assessment Tests, Video Watching, Design Thinking Method etc.
- Materials and Equipment: All the materials you need to use for F2F learning such as Pens, Paper, Ball, Ribbon, Projector, Powerpoint Presentation, Flipchart and Markers, Sign-in sheet, Boombox to play music, Beamer, Laptop and Screen, etc.

Evaluation: Develop a non-formal-activity, as a final session, that can facilitate the workshop's evaluation and the reflection of participants regarding all the activities implemented in order to close the workshop in the best way

Nr.	Topics and Sub-topics/Learning Activities (Workshop Opening, Energizers, Presentations, Activities, Evaluation)	Duration (minutes)	Training Methods (Presentation, Plenary Session, Discussion, Questions & Answers, Team Activities- Assignments, Brainstorming or other Ideation Methods, Feedback, Self-assessment Tests, Video Watching, Design Thinking Method etc.)	Materials/ Equipment Required for F2F and Online delivery (Pens, Paper, Ball, Ribbon, Projector, Powerpoint Presentation, Activity Sheet with its number, Flipchart and Markers, Sign-in sheet, Boombox to play music, Beamer, Laptop and Screen, etc.)	Online Adaptation to Proposed Face-to-Face Activity (In this section, if you are delivering PowerPoint slides, you can include guidance that these slides can be shared online through Team, Zoom or some other online meeting software, should training be delivered online. If you are engaging young people in a group activity, you can propose how this activity can be delivered online through Zoom, by breaking the larger groups up
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					<p><i>into 'breakout sessions' (I am not sure if this option is also available on other online software programmes.</i></p> <p><i>If you are including work on a flipchart, consider including activities on Mentimeter or an online MindMap generator, for example.)</i></p>
1					
2					
Duration of the Module					

<p>Training Material for F2F and Synchronous Online Learning</p> <p><i>(Indicate what kind of training materials are going to be given to the participants. E.g. handouts, workbook, etc.)</i></p>		
<p>References</p> <p><i>(Provide references for the sources used to develop this module by deploying the APA style)</i></p>		

Template 1.2 Activity Handout

Module Title			
Activity Title		Activity Number	<i>The number you gave to the activity in the lesson plan</i>

**Description of
the activity**

Provide the steps/guidelines that the learners should follow in order to implement the activity.

Template 1.3 PowerPoint Presentation

For each module, a Power point presentation (Using Branded Template) should be developed. In case of presenting your topics by using only images, then you have to provide in the notes section the content to be presented.

Template 1.4 Learner’s Workbook

To produce the Learner’s Workbook, you follow the guidelines:

1. Open the Powerpoint Presentation you have already developed
2. Click on the “File” à “Export” à “Create Handouts” in Microsoft Word à Create Handouts à Notes below slides.

10.2. Annex II – Templates for Self-directed Learning

Template 2.1 Self-directed Learning Resources

Module Title	
Topic	<i>The topic of the module covered by this resource could be an article, a video, a podcast, a white paper, etc.</i>
Title of Resource:	<i>The title was given by the person that developed the resource</i>
Why use this resource?	<i>State what the resource is, explain in brief the content of the resource and how it is linked with the module and the topic</i>

What will you get from using this resource?	<i>Explain why this resource is important for the learner. Provide the value of using this resource for the learner.</i>
Link to resource:	<i>Provide the link to the website/platform where the learner can access the online resource</i>

Template 2.2 Self-directed Learning Activity Sheet

Module Title			
Activity Title		Duration of Activity (in minutes)	
Learning Outcomes	<i>Based on the Curriculum Framework</i>		
Aim of activity	<i>Describe here the value of completing this activity for learners - this section should motivate the learner to use this activity as part of their self-directed learning.</i>		

Materials Required for Activity	<i>Materials and equipment are required by the learner to complete this activity. Here you should include also any additional resource they should use in order to complete the activity (tables etc.).</i>
Step-by-step instructions	<i>Provide the steps that the learners should follow to complete this activity</i>
References	<i>Use APA style</i>

Template 2.3 Self-directed Learning Case Study Template

Module Title	
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Case Study Title	
The Story	<i>Tell the story of the case study example. This story should be linked to the theory provided within the framework of F2F/Synchronous training.</i>
Follow-up Questions	<i>Set of questions for reflection</i> <ul style="list-style-type: none"> • <i>Question 1...</i> • <i>Question 2...</i> • <i>Question 3...</i>
References	<i>Use APA style</i>