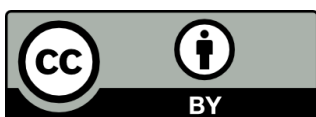




Guide on Curricula Concepts for ClimateFarming Consultation

2022-1-DE02-KA220-VET-000090163

Provided by: CI
Date: December 2022



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.



Contents

Introduction	3
Target Groups	4
Glossary of Terms	5
The European Quality Assurance Framework	6
The Quality Assurance Circle	6
EQF	7
EQAVET	8
ECVET	9
European Skills Panorama	10
Framework for developing the curriculum.	10
Learning Outcomes	10
Development of learning outcomes	11
The European sustainability competence framework (GreenComp)	13
Curricula development	14
Stakeholder involvement	15
Assessment standards and methods	17
Definition of assessment	17
Assessment methods	17
Template guide for developing Multiple Choice assessments	18
Useful links for developing assessments	18
How the methods and standards of curriculum development are applied to ClimateFarming Consultation Course	19
Appendix I: References	21



Introduction

Agriculture is at the center of a number of major environmental and climatic challenges. Climate change, with increased occurrences of weather extremes such as droughts and storms, potential shortage of mineral fertilizers, soil erosion, decline of pollinators and other factors are not only exacerbated by farming, but at the same time represent serious challenges for the current agricultural system itself.

The overall objective of work package 2 (ClimateFarming Consultation) is to develop a comprehensive consultation offer, supporting farmers in the application of climate adaptation and mitigation strategies. In this work package, we design a new vocational training offer in response to the identified skills gaps and needs of farmers. The material to be developed will integrate the latest advancements in the field of regenerative agriculture and climate resilient farming as well as innovative approaches to tackle climate and environmental challenges in agriculture.

The WP objective is hence perfectly aligned with the general objectives of the project to equip a new generation of farmers with needed skills and knowledge to implement climate adaptation and mitigation measures in farming. The delivery of innovative and future-oriented consultation and training material on climate mitigation and adaptation will provide practical solutions to transform agriculture landscapes and practices resulting in sustainable cultivation methods and consequently a balanced climate and ecosystem.

The current document is part of WP 2 Activity 1: Design of Consulting Framework. The Consulting framework will result in a Guide on Curricula Concepts and Methodology Guidelines including, inter alia, EQF/ECVET/EQAVET framework to be applied, effective learner tracking and feedback loops, learning outcome approach and evaluation methods.

Please note: this document is the basic framework for all educational materials developed in the ClimateFarming Project. All described standards are also valid for workpackage 3: ClimateFarming Train the Trainer.



Target Groups

This framework is the basis for the development of consultation and other educational material within the ClimateFarming Project. Beyond this project it is addressing to:

- Persons, who can use the described standards for their business:
 - Developers of consultation materials: they
 - All persons who are interested in developing educational content
- Persons, who use the ClimateFarming courses and are interested in the pedagogical background and how to classify them on a European level:
 - Consultants
 - Professors in HEI and teachers in VET schools
 - VET provider quality assurance managers
 - Professional associations
 - Chambers, unions

The target group of Consultation Material, for which this framework is the basis, is as follows:

- Consultants
- Professors in HEI and teachers in VET schools
- Professional associations
- Chambers, unions
- All persons interested in adaptation to and mitigation of climate change



Glossary of Terms

These are the most important terms used in this document.

CQAF: the Common Quality Assurance Framework constitutes a European reference framework to ensure and develop quality in vocational education and training (VET), building on the key principles of the most relevant existing quality assurance models.

Learning outcomes: Statements of what a learner knows, understands and is able to do on completion of a learning process defined in terms of knowledge, skills and competence

Assessment of learning outcomes: Methods and processes used to establish the extent to which a learner has attained particular knowledge, skills and competence against predefined criteria.

Self-assessment: a process by a learner of appraising his/her knowledge, skills and competence against predefined criteria.

Recognition of learning outcomes: The process of attesting officially achieved learning outcomes through the awarding of units or qualifications.

Qualification: Formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards.

Standard – statement approved and formalised by a competent body, which defines the rules and criteria to follow in a given context or the results to be achieved. Standards may take a quantitative form, being mostly the results of benchmarking, or they may be qualitative, indicating only specific targets. When quantitative, the standards include threshold levels that have to be met. More often than not, the thresholds are defined at the level of minimally acceptable quality.

Knowledge: The outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study.

Skills: The ability to apply knowledge and use know-how to complete tasks and solve problems.

Competence: The proven ability to use knowledge, skills and personal, social and/or methodological abilities in work or study situations and in professional and personal development

Assessment of expected learning outcomes– the process of investigating (1) what learners are learning and (2) how well they are learning it in relation to the stated expected learning outcomes for the course.

Evaluation – making a judgment about the quality of learner's learning/work and assigning a grade based on that judgment. Evaluation activities (such as exams, papers, etc.) are often seen as formal ways to assess the expected learning outcomes for a course.



The European Quality Assurance Framework

The Quality Assurance Circle

“One of the main merits of the ambitious Lisbon agenda of 2000 is it put education and vocational education and training (VET) at the centre of Europe’s economic growth and employment policies.

The Education and training 2010 work programme was adopted in 2002 to bring forward implementation of agreed objectives which, in VET, came under the Copenhagen process. Quality assurance in VET became one of the three main activities to focus on in full parity of esteem with credit transfer in VET and development of a single framework for the transparency of qualifications and competences.” [Fundamentals of a common quality assurance framework \(CQAF\) for VET in Europe | CEDEFOP \(europa.eu\)](#) (downloaded on 6th of November 2022)

The **Common Quality Assurance Framework (CQAF)** constitutes a European reference framework to ensure and develop quality in vocational education and training (VET), building on the key principles of the most relevant existing quality assurance models. It may be considered as a cross reading instrument that can help policy makers and practitioners to get a better insight of how the existing quality assurance models work, to identify areas of provision that need improvement, and to take decisions on how to improve them based on common quantitative and qualitative references. It also allows for capturing and classifying best practice within and across Member States (European Commission 2015).

The CQAF comprises:

- a model to simplify planning, implementation, evaluation and review of systems at appropriate levels in Member States;
- a methodology for assessing and reviewing systems: with emphasis on self-assessment, combined with external evaluation;
- a monitoring system: to be identified as appropriate at national or regional levels, and possibly combined with voluntary peer review at European level;
- a measurement tool: a set of reference indicators aimed at helping Member States to monitor and evaluate their own systems at national or regional levels.

The model includes:

- planning,
- implementation,
- evaluation and assessment,
- review.

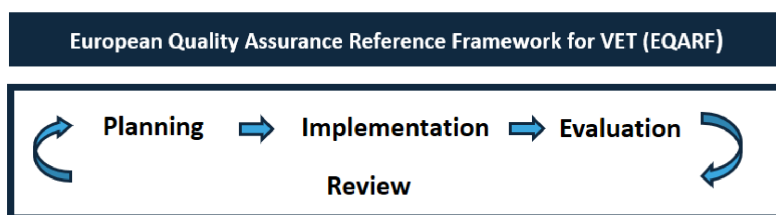


Figure 1: The Quality Cycle

For each of these elements core quality criteria have been identified. Considering the various choices made by Member States to deal with quality assurance and development in VET, the core criteria are presented as possible answers to specific questions which are transversal to any VET system or provider when reviewing policies.

Planning (purpose and plan)

This relates to the setting up of clear and measurable goals regarding policies, procedures, tasks, and human resources. A crucial question at European level is how far European objectives for improving VET systems are reflected in the goals and objectives set up in the planning phase of a quality system.

Implementation

It is essential to establish key, coherent principles that underpin implementation of the planned actions to ensure effectiveness in achieving the set goals and objectives.

Evaluation and assessment

This covers continuous evaluation of programme provision by objectives (including learner data) and assessment of outcomes achieved at system and individual levels. In general, the assessment and evaluation phase consists of two parts, data collection and processing, and discussions on results achieved.

Review (feedback and procedures for change)

Quality assurance and development is a continuous and systematic process. It must undergo constant review combining self-assessment with evaluation by an external body, processing feedback and organising procedures for change.

EQF

The EU developed the **European Qualifications Framework (EQF)** as a translation tool to make national qualifications easier to understand and more comparable. The EQF is an 8-level, learning-outcomes-based framework for all types of qualifications that serves as a translation tool between different national qualifications frameworks.

The EQF covers all types and all levels of qualifications, and the use of learning outcomes makes it clear what a person knows, understands and is able to do. The level increases according to the level of proficiency, level 1 is the lowest and 8 the highest level. Most importantly the EQF is closely linked to national qualifications frameworks, this way it can provide a comprehensive map of all types and levels of qualifications in Europe, which are increasingly accessible through qualification databases.

Level 5 - learning outcomes		
Knowledge	Skills	Responsibility and autonomy
Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	Exercise management and supervision in contexts of work or study activities where there is unpredictable change; review and develop performance of self and others

Figure 2: EQF Level 5

Source: <https://europa.eu/europass/en/description-eight-eqf-levels>

EQAVET

European Quality Assurance Reference Framework for Vocational Education and Training (EQAVET) is a set of European requirements – expectations – with the primary aim of promoting and supporting the continuous quality improvement in VET.

- quality assurance and quality improvement cycle
- monitoring
- measurement tool

The EQAVET+ indicative descriptors aim to support Member States, as they deem appropriate, when implementing the EQAVET Framework. They can also be applied to school-based provision; apprenticeships, lifelong learning programmes, in-company training, and non-formal and informal learning.

Measures of data

EQAVET Indicators	VET area
Indicators 1, 9	CONTEXT/INPUT
Indicator 2	INPUT/PROCESS
Indicator 3	INPUT/PROCESS/OUTPUT
Indicator 4	PROCESS/OUTPUT/OUTCOME
Indicator 5, 6	OUTCOME
Indicator 7, 8	CONTEXT
Indicator 10	PROCESS

Figure 3: EQAVET indicators and VET area



Source: <https://www.eqavet.eu/EU-Quality-Assurance/For-VET-Providers/monitoring-your-system/evaluation/EQAVET-Indicators>

The below indicators can be applicable in the project:

EQAVET Indicators:

- Indicator 1. Relevance of quality assurance systems
- Indicator 2. Investment in training of consultants
- Indicator 3. Participation rate in ClimateFarming course for consultants
- Indicator 4. Completion rate in ClimateFarming course for consultants
- Indicator 5. Placement rate of ClimateFarming course for consultants after project's end
- Indicator 6. Utilisation of acquired skills at the workplace
- Indicator 10. Schemes used to promote better access to ClimateFarming course for consultants

More details on each indicator can be accessed here: <https://www.eqavet.eu/EU-Quality-Assurance/For-VET-Providers/monitoring-your-system/evaluation/EQAVET-Indicators>

ECVET

This chapter is relevant for mobility among EU countries. **The European credit system for vocational education and training (ECVET)** helps in transfer, recognition and accumulation of assessed learning outcomes of learners throughout the Europe.

The aim of the European Credit system for Vocational Education and Training (ECVET) is to:

- make it easier for people to get validation and recognition of work-related skills and knowledge acquired in different systems and countries – so that they can count towards vocational qualifications;
- make it more attractive to move between different countries and learning environments;
- increase the compatibility between the different vocational education and training (VET) systems in place across Europe, and the qualifications they offer;
- increase the employability of VET graduates and the confidence of employers that each VET qualification requires specific skills and knowledge.

ECVET allows learners to accumulate, transfer and use their learning in units as these units are achieved. This enables building a qualification at learners' own pace from learning outcomes acquired in formal, non-formal and informal contexts, in their own country and abroad. The system is based on units of learning outcomes as part of qualifications that can be assessed and validated.

Qualifications and units can be described using ECVET points. The ECVET Recommendation suggested that 60 points be considered equivalent to the knowledge, skills and competences acquired in a year of formal full-time VET (or its equivalent).

Link to ECVET: <https://www.cedefop.europa.eu/en/events-and-projects/projects/european-credit-system-vocational-education-and-training-ecvet>



European Skills Panorama

According to Cedefop, the Skills Panorama <https://skillspanorama.cedefop.europa.eu/en> is an online central access point for data, information and intelligence on skill needs in countries, occupations, and sectors across EU Member States. It is an initiative of the European Commission aiming at improving EU's capacity to assess and anticipate skill needs, helping education and training systems be more responsive to labour market needs, and better match skill supply and demand across the EU.

While offering an EU perspective on trends in skill supply and demand and possible skill mismatches, it also provides access to national data and sources.

Link to the Skills Panorama on Agriculture, forestry & fishing here:
<https://skillspanorama.cedefop.europa.eu/en/dashboard/browse-sector?sector=01.01&country=>

Framework for developing the curriculum.

Learning Outcomes

Learning Outcomes are detailed explanations of what your students should be able to do by the end of a learning process. Moreover, they also help you and your students in measuring success.

- Identify the knowledge level required to achieve your goal
- Choose an Action Verb
- Verify Your Learning Outcome

The learning outcomes are defined in terms of:

- Knowledge: in the context of EQF, knowledge is described as theoretical and/or factual.
- Skills: In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).
- Responsibility and autonomy: In the context of the EQF responsibility and autonomy is described as the ability of the learner to apply knowledge and skills autonomously and with responsibility.
-

Learning outcomes have three major characteristics:

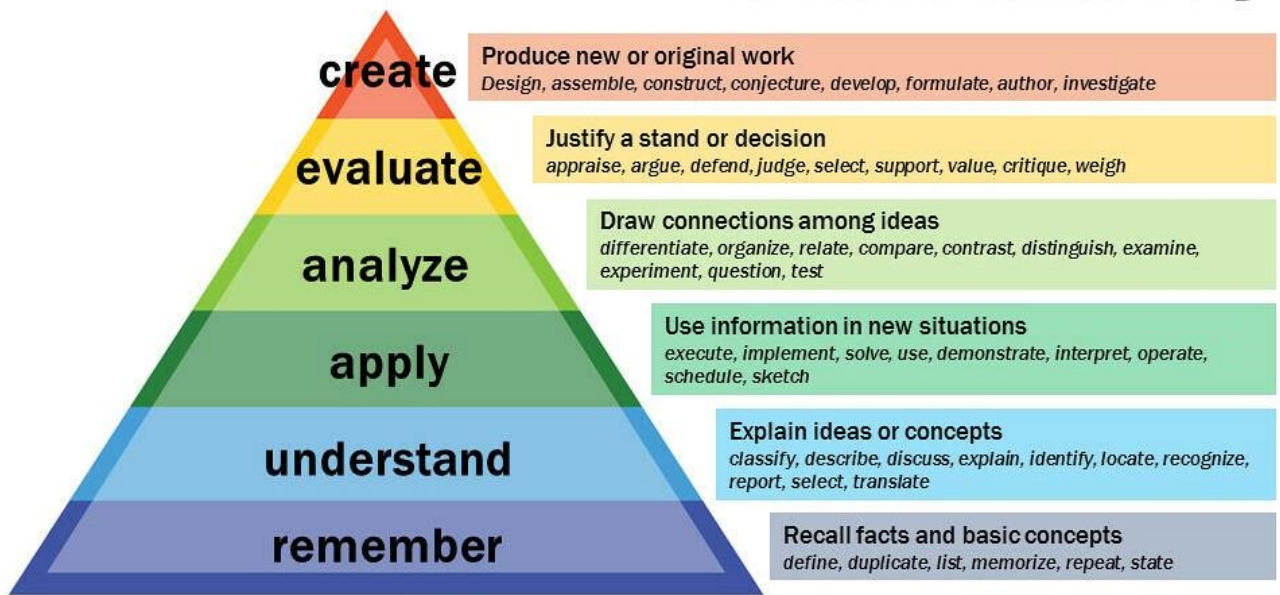
- They specify an action by the learner that is observable;
- They specify an action by the learners that is measurable;
- They specify an action that is done by the learner.



Development of learning outcomes

Bloom’s Taxonomy is a classification of the different objectives and skills that educators set for their students (learning objectives). The taxonomy was proposed in 1956 by Benjamin Bloom, an educational psychologist at the University of Chicago. The terminology has been recently updated to include the following six levels of learning.

Bloom’s Taxonomy



These 6 levels can be used to structure the learning objectives, lessons, and assessments of your course:

Remembering: Retrieving, recognizing, and recalling relevant knowledge from long-term memory.

Understanding: Constructing meaning from oral, written, and graphic messages through interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.

Applying: Carrying out or using a procedure for executing, or implementing.

Analyzing: Breaking material into constituent parts, determining how the parts relate to one another and to an overall structure or purpose through differentiating, organizing, and attributing.

Evaluating: Making judgments based on criteria and standards through checking and critiquing.

Creating: Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing.

According to CEDEFOP (2016) there are some guidelines used for the definition and writing of learning outcomes:

- When writing learning outcomes, the learner is always – irrespective of the purpose and level of detail – put at the center;
- Defining and writing learning outcomes should be treated as an iterative process, starting from overall objectives and moving stepwise towards specific statements for units and assessment;



- When defining and writing learning outcomes for a training course it is recommended to keep the number of statements as low as possible. The purpose should be to identify the overall scope and profile, not to list all technical details;
- There cannot exist one action verb for each learning outcome;
- The learning outcomes should be grouped into units or modules. Units include multiple learning outcomes that are required for carrying out core tasks of the qualification to be described.
- A unit of learning outcomes should be clearly linked to overall learning outcomes at the level of qualification (or program level).

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
define	classify	apply	analyze	arrange	assess
identify	compile	calculate	calculate	assemble	compare
label	conclude	demonstrate	categorize	compose	critique
list	discuss	develop	classify	construct	decide
match	describe	interpret	criticize	design	determine
name	explain	locate	compare	develop	establish
recall	express	perform	contrast	diagnose	evaluate
recognize	give examples	practice	determine	manage	judge
record	identify	predict	differentiate	organize	justify
relate	interpret	present	distinguish	plan	measure
repeat	recognize	report	examine	propose	rate
select	summarize	use	outline	relate	recommend
state	translate	operate	test	summarize	select

Figure 4: Bloom's Taxonomy verbs

Other lists of verbs to be used when writing learning outcomes can be accessed here:

- <https://tips.uark.edu/blooms-taxonomy-verb-chart/>
- <https://www.teachthought.com/learning/what-is-blooms-taxonomy-a-definition-for-teachers/>

Example of applying Bloom's Taxonomy:

Learning objective: Regenerative Agriculture as a solution

Knowledge level: understand

Learning outcome: After finishing this lesson, the learner is able to describe / discuss minimum 3 methods of regenerative agriculture.

Knowledge level: analyze

Learning outcome: After finishing this lesson, the learner is able to compare minimum 3 effects of methods of regenerative agriculture with conventional agriculture



The European sustainability competence framework (GreenComp)

Another helpful tool in the ClimateFarming context is the the European sustainability competence framework:

https://joint-research-centre.ec.europa.eu/greencomp-european-sustainability-competence-framework_en

“The development of a European sustainability competence framework is one of the policy actions set out in the European Green Deal as a catalyst to promote learning on environmental sustainability in the European Union. GreenComp identifies a set of sustainability competences to feed into education programmes to help learners develop knowledge, skills and attitudes that promote ways to think, plan and act with empathy, responsibility, and care for our planet and for public health...”

GreenComp consists of 12 competences organised into the four areas
(downloaded on 18.06.2023)

AREA	COMPETENCE	DESCRIPTOR
1. <i>Embodying sustainability values</i>	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.
	1.2 Supporting fairness	To support equity and justice for current and future generations and learn from previous generations for sustainability.
	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.
2. <i>Embracing complexity in sustainability</i>	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.
	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.
	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.



AREA	COMPETENCE	DESCRIPTOR
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.
	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.
	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.
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.
	4.2 Collective action	To act for change in collaboration with others.
	4.3 Individual initiative	To identify own potential for sustainability and to actively contribute to improving prospects for the community and the planet.

Curricula development

A curriculum is a “systematic presentation of intended teaching objectives, content and methods over a period of time as a consistent system with multiple domains for the purpose of optimal preparation, realization and evaluation of teaching”.

<https://wirtschaftslexikon.gabler.de/definition/curriculum-28425/version-252056>

(downloaded on 6th of November 2022)

Learning objectives and contents of a curriculum are:

- justified with regard to the acquisition of qualifications for coping with present and future life situations
- based on learning-outcomes
- developed in a democratic consensus-building processes by experts, teachers and stakeholders
- matching the interests and needs of learners (learner-based approach) and stakeholders
- continuously improved in compliance with the quality assurance circle as described

in CQAF.

In ClimateFarming project curriculum is understood in this broad claim. In contrary to an often use as synonym for syllabus, course of instruction, guideline, or even individual lesson preparations.

Elements of a curriculum are:

- learning objectives: list of contents which the trainer is going to teach.
- Hints how to formulate the learning outcomes, (definition see above)
- kind of learning material: videos, VOOCs, handouts, etc.

process characteristics of learning

Stakeholder involvement

In any quality assurance system one of the key features is the improvement that is developed and implemented following the monitoring of the programme including the ascertaining of views of all stakeholders on the delivery and outcomes of the programme. Key to delivering an improvement and enhancement of programmes is **accurate data and evidence** on which to base any changes to be made. Thus, it is essential that the monitoring phase on the delivery is conducted in a timely and thorough fashion.

Self-reflection together with evaluation of the strengths and weaknesses of all aspects of the program, conducted in an evidence-based manner, will ensure the alignment of the needs of all stakeholders (learners, labour market, teachers, institutions, etc.) and result in delivery of an enhanced program.

Crucial aspects here include:

- ✓ To what extent are the quality improvement system and criteria transparent to all stakeholders?
- ✓ To what extent are quality improvement actions discussed with and communicated to internal and external stakeholders?
- ✓ Which stakeholders (incl. participants) are being questioned in the evaluation?

The ultimate aim of any quality assurance exercise must be the improvement and enhancement of a program/activity and it is important that all stakeholders – students, staff and external stakeholders – are facilitated in their engagement with the process. Funding agencies, including government and industry, where applicable, also play an important role in the quality assurance and have an interest in the outcomes and developments.

Learning Context

Which didactic means are used to provide the students with adequate professional and social skills in their field of expertise and (to what extent) are they appropriate?

- Intended course structures and teaching methods



Co-funded by
the European Union



- Justification of the selection and appropriateness of the forms of examination
- Integration of distance learning elements and new media
- Integration of foreign languages
- The required qualifications of teaching staff is guaranteed

Resources

- Are the human resources required for the implementation of the training program and the fulfilment of its profile available?
- Are the current resources/concerning equipment and budget sufficient and appropriate for the objectives of the training program?



Assessment standards and methods

Learning outcomes are perceived as adding value for several purposes, as will be outlined in the following chapters. However, they are not to be taken for granted: any benefits eventually depend on the way learning outcomes are understood, defined, written and applied. The learning outcomes approach supports learners' assessment by clarifying the criteria for success/failure and performance. While most frequently linked to summative assessments, learning outcomes can help with formative assessment throughout the learning process.

Definition of assessment

Assessment of learning outcomes is a process of appraising knowledge, know-how, skills and/or competences of an individual against predefined criteria (learning expectations, measurement of learning outcomes). Assessment is typically followed by certification.

Comment: in the literature, 'assessment' generally refers to appraisal of individuals whereas 'evaluation' is more frequently used to describe appraisal of education and training methods or providers. Source: Cedefop, 2004.

So that learning outcomes can be assessed, they should have these characteristics:

- They specify an action by the learner that is **observable**.
- They specify an action by the learners that is **measurable**.
- They specify an action that is done by the learner.

Assessment methods

In ClimateFarming project the curriculum developers can choose between the following methods of assessment:

- Multiple-choice questions with
 - Closed-ended questions which are ideal for an automated assessment. The most common types of this kind of questions are: Multiple Choice Questions (MCQ), fill-in-the-blank, matching, yes/no (or true/false), drag and drop into text, drag and drop onto image etc.
 - some answers and the learner has to mark the right answer
 - some answers and the learner has to mark more than one right answer
- Open-ended questions which are hard to assess automatically, but can be used to initiate some individual activity (e.g. read this article and comment...) or some group activity (e.g. after reading this article, join the forum discussion about the "X" topic and present your opinion).
- Coursework assignment
- Assessment questionnaire
- Online quiz
- Written report
- Presentation
- Oral examination
- Self- and peer assessment
- Group assessment

In ClimateFarming project for the consultation course, will be mainly multiple-choice



questions will be used, because they are easy to be assessed automatically.

Learners' self-assessment

Self-assessment supports learner's learning and is one of the most important skills that learners require for future professional development and life-long learning, as it develops their capacity to be assessors of learning.

The purpose of self-assessment is that the learner can evaluate his understanding of the content. The right answer is shown immediately in the online course. When the learner has chosen the wrong answer, she/he gets a hint, where to find where to find the corresponding place in the course.

Template guide for developing Multiple Choice assessments

- Question should be concise, clear text, without useless references. Avoid negative phrasing.
- Possible answers: At least 4, numbered The answers should not overlap.
- The wrong answers must correspond to common misconceptions
The correct answer should not be too obvious

Indicate how many times the trainee can attempt to answer the question before feedback (other than correct / not correct) will be presented.

Useful links for developing assessments

An analysis of quiz in MOOC

https://www.researchgate.net/publication/315472804_An_analysis_of_quiz_in_MOOC

Assessing Individual Learner Performance in MOOCs

<https://pdfs.semanticscholar.org/ce6c/4407790677c48f795cb16bf164abe2762d48.pdf>

10 Rules for Writing Multiple Choice Questions

http://thelearningcoach.com/elearning_design/rules-for-multiple-choice-questions/

Writing Good Multiple Choice Test Questions

<https://cft.vanderbilt.edu/guides-sub-pages/writing-good-multiple-choice-test-questions/>

Close Ended Questions

<https://www.questionpro.com/close-ended-questions.html>

How the methods and standards of curriculum development are applied to ClimateFarming Consultation Course

Process of the development of the curriculum and training material

With the Climate Farming Consultation Course the project's partners are trained in the developed climate adaptation and mitigation methods and the required background knowledge. As all partners are agricultural consultants who also train consultants in their turn or plan to do so, and farmers, the target groups are modelled on a small scale. During this internal train the trainer training, initial feedback can be collected, and the material adapted. And the partners will decide, which parts of the training material are important for which of the main target groups:

- Consultants (WP2: Consultants course)
- Trainer of consultants (WP3: Train-the-Trainer course)
- Farmers (WP4: Farmers Workshop)

Subsequently, pilot trainings will be conducted with external agricultural consultants who will later train other consultants. These pilot trainings will in turn lead to improvements in the material. Through this approach we can guarantee a high level of **stakeholders' involvement** in the process of curriculum development.

And we are following the **European Quality Assurance Framework**:



Figure 1: The Quality Cycle

According to the **European Qualifications Framework (EQF)** the Consultation curriculum is on level 5, which is the according level in VET education. VET means in the context of the ClimateFarming Consultation course that the learners are not necessarily apprentices, but mainly adults in their life-long-learning process and some of them have even an educational qualification on level 6 or beyond.

Level 5 - learning outcomes		
Knowledge	Skills	Responsibility and autonomy
Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	Exercise management and supervision in contexts of work or study activities where there is unpredictable change; review and develop performance of self and others

Figure 2: EQF Level 5

Source: <https://europa.eu/europass/en/description-eight-eqf-levels>

These **EQAVET Indicators** can be applicable in the Consultation curriculum:



- Indicator 1. Relevance of quality assurance systems
- Indicator 2. Investment in training of consultants
- Indicator 3. Participation rate in ClimateFarming course for trainers
- Indicator 4. Completion rate in ClimateFarming course for trainers
- Indicator 5. Placement rate of ClimateFarming course for trainers after project's end
- Indicator 6. Utilisation of acquired skills at the workplace
- Indicator 10. Schemes used to promote better access to ClimateFarming course for trainers.

More details on each indicator can be accessed here: <https://www.eqavet.eu/EU-Quality-Assurance/For-VET-Providers/monitoring-your-system/evaluation/EQAVET-Indicators>.

The **ECVET System** (European credit system for vocational education and training), which enables the mobility among EU countries is applied in the ClimateFarming Consultation curriculum as far as the approximate duration of the learning time per learning unit is indicated. We are not applying for official Credit Points through an accreditation agency.

The **learning outcomes** according to Bloom's taxonomy of each learning unit are described in the catalog of the ClimateFarming Consultation course.

As the learning outcomes are measurable, the learning success can be assessed. **Assessments** have three major purposes:

- They motivate learners by gamification methods like quizzes
- They encourage learners to review and deepen what they have learned
- They are the basis for certificates

Learners in the ClimateFarming Consultation course can gain a certificate with a "successfully finalized" remark, if they go through the assessments at the end of each learning unit and achieve a result of at least 60%. The learner has 3 attempts to answer a question correctly. After completing the assessment of a learning unit, their score is archived, and they have access to the correct answers. At the same time, he is referred to the place in the curriculum where he can repeat the subject matter. Without doing the assessments they receive a mere participation certificate.

In ClimateFarming Consultation course, mainly multiple-choice questions will be used, because they are easy to be assessed automatically. And even if the assessments in the pilot trainings would be corrected by an expert, after the project's end it is important, that the course can be absolved without a moderator's input.

The Multiple-Choice assessments are developed regarding the following:

- Question should be concise, clear text, without useless references. Avoid negative phrasing.
- Possible answers: At least 4, numbered. The answers should not overlap.
- The wrong answers must correspond to common misconceptions
- The correct answer should not be too obvious



Appendix I: References

- Biemans, H. et al. (2009). Towards competence-based VET: dealing with the pitfalls. *Journal of vocational education and training*, Vol. 61; No 3, pp. 267-286.
- Cedefop (2016). Application of learning outcomes approaches across Europe: a comparative study.
- Cedefop (2017). Defining, writing and applying learning outcomes: a European handbook. Luxembourg: Publications Office. <http://dx.doi.org/10.2801/566770>
- Cedefop (2015). Ensuring the quality of certification in vocational education and training. Luxembourg: Publications Office. Cedefop research paper; No 51. <http://dx.doi.org/10.2801/25991>
- Cedefop. (2011). Glossary: quality in education and training. Luxembourg: Publications Office. http://www.cedefop.europa.eu/files/4106_en.pdf
- Cedefop. (2008). Terminology of European education and training policy: a selection of 100 key terms. Luxembourg: Publications Office. http://www.cedefop.europa.eu/en/Files/4064_EN.PDF
- Cedefop. (2007). Fundamentals of a common quality assurance framework (CQAF) for VET in Europe. Luxembourg: Publications Office. Cedefop panorama series; No 148. https://www.cedefop.europa.eu/files/5168_3a.pdf
- ESG (2015). Standards and Guidelines for Quality Assurance in the European Higher Education Area. Available at: https://enqa.eu/wp-content/uploads/2015/11/ESG_2015.pdf
- European Commission Directorate-General for Education and Culture (DGEAC). (2005). Fundamentals of a 'common quality assurance framework' (CQAF) for VET in Europe. Brussels, Belgium. http://www.bmukk.gv.at/medienpool/18122/fundamentals_of_a_cqaf_for_v.pdf
- EQAVET. (2013). Supporting the implementation of the European quality assurance reference framework: results of EQAVET Secretariat survey 2013-14. Dublin: EQAVET Secretariat. <https://www.eqavet.eu/eqavet2017/media/Documents/Report-implementation-of-EQAVET-Results-EQAVET-Secretariat-Survey-2016.pdf>
- OECD. (2013). Student assessment: Putting the learner at the centre in Synergies for Better Learning: An International Perspective on Evaluation and Assessment, OECD Publishing, Paris. DOI: <https://doi.org/10.1787/9789264190658-7-en>