With the support of the Erasmus+ Programme of the European Union

INTELLECTUAL OUTPUT 3. LEARNING UNITS AND SOFTWARE TUTORIALS

AGROSILVER VALUE

Integrating silver knowledge from agricultural sector into the VET systems

Learning units and software tutorials: Introduction

INTELLECTUAL RESULT/OUTPUT 3. LEARNING UNITS AND SOFTWARE TUTORIALS

In order to test and obtain feedback on the usability of the software, one online pilot course was prepared. The objective of the online course is to show teachers how to use the software for improving their teaching contents and methodologies.
Pilot courses have not been considered as an output by itself, but the documentation and learning units, prepared for the pilot testing, are developed documents which add extra value to the project results and are thus considered as outputs.

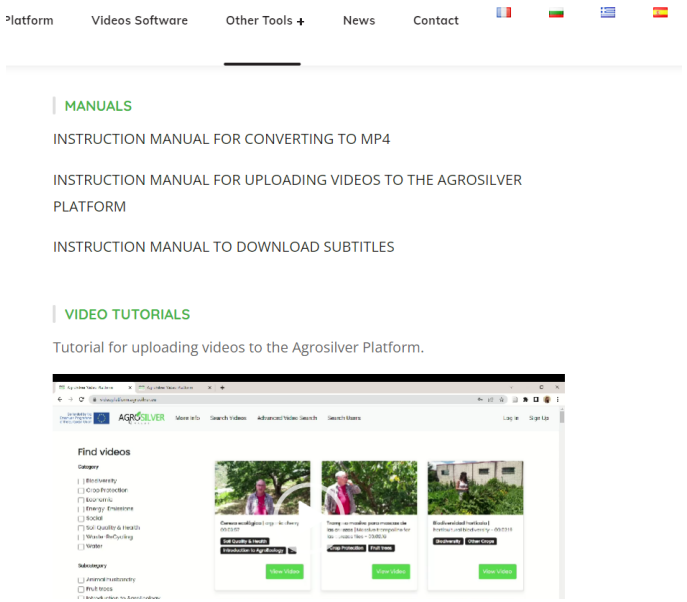
The pilot courses cover the full processes that a teacher has to follow when using the data platform and the software for creating learning contents. Some of the key documents developed are:

- General software manual and tutorials.
- 3 full developed learning units.

Learning units and software tutorials: Introduction

INTELLECTUAL RESULT/OUTPUT 3. LEARNING UNITS AND SOFTWARE TUTORIALS

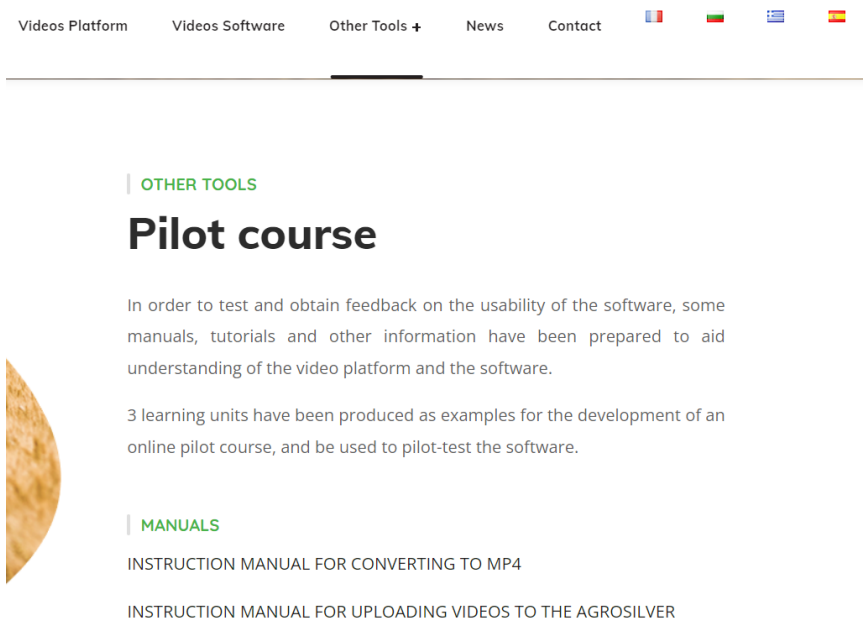
General software manual and tutorials.
As part of the theoretical teaching, a manual and several video-tutorials are available for teachers who want to learn how to produce new contents for their courses, or want to improve their existing teaching contents or methodologies. This material is of use out of the pilot courses, when any teacher wanted to prepare new learning units by himself.



Learning units and software tutorials: Introduction

INTELLECTUAL RESULT/OUTPUT 3. LEARNING UNITS AND SOFTWARE TUTORIALS

3 full developed learning units.
The consortium decided the topics, in the agroecology field, that suited to be used in the pilot courses. About this topics, the partners developed full learning units based on the video data platform and the video mine.



Learning units and software tutorials: Introduction

The learning units are the sample of the final results that a teacher have to obtain when using the video mine and software. The 3 learning units have a mix of theoretical contents and video contents, based on the reports provided by Silverknows Software. The partners developed this 3 units using their own knowledge and gathering videos from the software, so they were fully prepared to teach the 20 teacher/country of the pilot course when it was time to do so.

The learning units are a ready-to-use product of the project, but their objective was to be used on the pilots to show the teachers how they can reach an optimum result using the software.

Learning units and software tutorials: Introduction

Co-funded by the Erasmus+ Programme of the European Union

AGROSILVER VALUE

Learning units: introduction

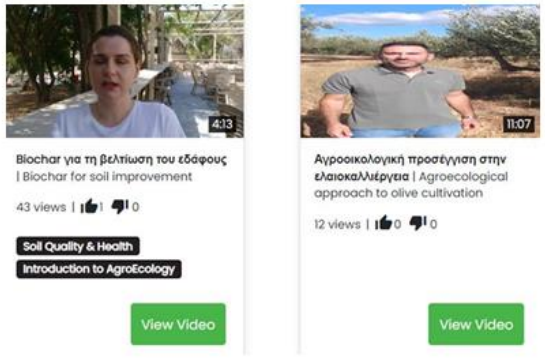
The Agrosilver value video Platform is a compilation of videos related to agroecology, based on the real experiences and testimonies of farmers, silver farmers and teachers, gathered in a structured online database, where the videos are stored and indexed with labels for a better identification.

Videos cover from on-site practical shows of farming techniques, to interviews with explanations of techniques, to free tips and advice from farmers related to specific crops or lands, to teachers' explanations about best teaching practices or contents, etc.

The platform has an intuitive structure where the videos are stored for a later visualization. Each video has side linked information about it which includes:

- Video description.
- Label indexing and keywords (manual and automatic) to ease video searching and identification.
- Recording location, speaker, partner country, language, etc.

In agroecology, where the traditional and sustainable techniques are teaching content, the knowledge of silver farmers is a key value for the training of the following generations



MAICHania has included into the video platform content worth of 478 minutes in the form of 32 videos.

Learning units and software tutorials: Introduction

Co-funded by the Erasmus+ Programme of the European Union

Learning unit 1: Introduction to Agroecology: Key Agricultural Elements

This unit is intended to serve as an introduction to the concept and application of agroecology to agricultural stakeholders. The first subunit provides a comprehensive overview of agroecology, and its various component elements, and the advantages of implementing agroecological techniques in modern farming.

The subsequent subunits focus concentrate on three key agricultural aspects of agroecology: soil health and fertility, crop protection and biodiversity. The unit discusses how by enhancing soil health and fertility, using natural and nature-inspired methodologies to protect crops from attack by pests and pathogens, and by maximizing the biodiversity of the entire agricultural system, many of the problems arising from the application of modern industrial farming practices (including soil degradation, environmental pollution, high requirements for inputs in terms of fossil fuels, synthetic fertilizers and pesticides, and emerging serious plant protection issues) may be mitigated. The unit includes practical examples of the implementation of agroecolocial practices on farms and in experimental cultivations.

1.1 Introduction to Agroecology

This subunit is designed to provide a general introduction to agroecology, providing an illustrated description of the concepts and tenets of agroecology, and their relevance and application to modern agriculture and sustainable rural development. Agroecology prescribes a holistic and integrated approach to agriculture through the application not only of ecological cultivation practices, but also social concepts and principles that allow the design and management of sustainable agriculture and food systems. By seeking to optimize the interactions between plants, animals, humans and the environment while also addressing the need for socially equitability, agroecology can be considered to be concurrently a science, a set of practices, and a social movement. Over recent decades it has evolved as a concept and expanded in scope from a focus on fields and farms to encompass the entirety of agriculture and food systems, and today represents a transdisciplinary field that includes the ecological, socio-cultural, technological, economic and political dimensions of food systems, from production to consumption.

Subunit 1.1 Introduction to Agroecology		
Name of the video	**Video link/Reference**	**Description of the video**

Learning units and software tutorials: Introduction

Co-funded by the Erasmus+ Programme of the European Union

AGROSILVER VALUE

1.2 Key Agricultural Elements of Agroecology

1.2.1 Biodiversity

Agricultural biodiversity is central to the health of farming systems. The UN-FAO describes agricultural biodiversity as "the variety and variability of animals, plants and micro-organisms at the genetic, species and ecosystem levels that sustain the ecosystem structures, functions and processes in and around production systems, and that provide food and non-food agricultural products". Biodiversity loss, in part due to the intensification of farming is recognized as a major threat to food security, and diverse systems have been shown to be more robust against threats caused by climate change and emerging agricultural pests and pathogens. This unit examines agricultural biodiversity at all levels but particularly examines how ecosystem biodiversity (including the plants, animals and microorganisms that form the agricultural system) are critical to essential functions such as pollination, pest management and maintaining soil fertility. Methodologies to evaluate, support and enhance agricultural biodiversity are discussed.

Subunit 1.2.1. Biodiversity		
Biodiversity and Agriculture: the agroecological approach 	https://videoplatform.agrosilver.eu/videoss/191 https://videoplatform.agrosilver.eu/videoss/192 https://videoplatform.agrosilver.eu/videoss/193	A seminar on the role and importance of of biodiversity in agriculture and how agroecological practices can support and enhance biodiversity.

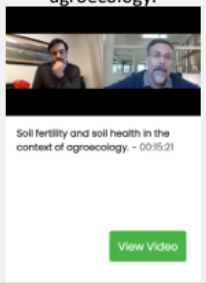
Learning units and software tutorials: Introduction

Co-funded by the Erasmus+ Programme of the European Union

AGROSILVER VALUE

1.2.2 Soil Health

Intensive farming practices, in particular industrial-scale monoculture cultivation, have the tendency to deplete soil organic matter, increase soil impaction, and to increase both the salinity and chemical pollution of the substrate, with a concurrent reduction in soil microbial activity and in populations of beneficial organisms. Currently 33% of the World's soil is considered to be moderately or highly degraded. This subunit describes the relationship between soil health and food security and examines agroecological methodologies that can be used to maintain and enhance soil health and fertility. Practices including the composting of waste residues, the use of no-till or minimal disturbance farming, and mixed cultivation, non-chemical methods to address soil pathogen infestations, and also how effecive monitoring of soil chemistry can allow for more efficient and effective use of inputs.

1.2.2 soil health		
Soil fertility and soil health in the context of agroecology. 	https://videoplatform.agrosilver.eu/videos/78	Nutrient management – how soil fertility is ensured.
Fundamentals of agroecology	https://videoplatform.agrosilver.eu/videos/25	Introduction to agroecology - What is agroecology? What are the main characteristics and advantages of this production system?

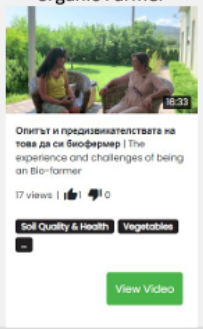
Learning units and software tutorials: Introduction

Co-funded by the Erasmus+ Programme of the European Union

AGROSILVER VALUE

Eco Agro entrepreneurship

1.1. Managerial skills needed to initiate and operate a profitable eco agro business

1. Eco Agro entrepreneurship		
Subunit 1.1. Managerial skills needed to initiate and operate a profitable eco agro business		
Name of the videos	**Video link/Reference**	**Description of the video**
The experience and challenges of being an organic Farmer 	https://videoplatform.agrosilver.eu/videoss/45	The video describes the long journey you need to take to create a sustainable organic farming business.
Eco-farm enterpreneur's perspective	https://videoplatform.agrosilver.eu/videoss/19	The video describes the current challenges facing eco-business in Bulgaria and the process of further improving entrepreneurial and business skills.

Learning units and software tutorials: Introduction

ecologykm

Courses / AgroSilver Value / Training course in English

TRAINING COURSE IN ENGLISH

AgroSilver Value / Training course in ... | Search courses

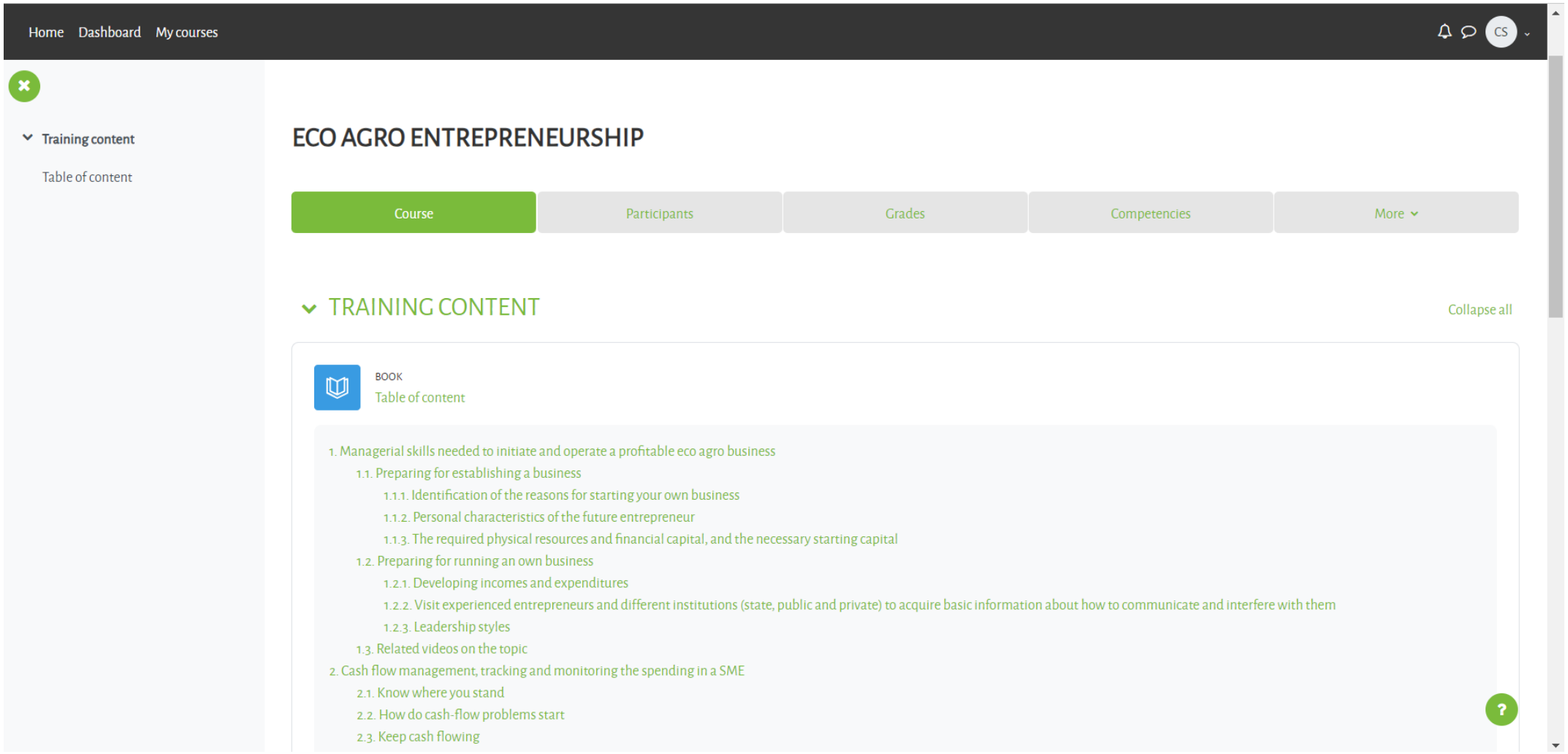
Eco Agro entrepreneurship

To be a good entrepreneur means to be very well organised, managed, responsible and to be aware how to hire the right people to support.

Soil health/fertilisation towards organic farming

Soil formation is a long and complex process driven by many factors such as climate, types of starting materials, topography and living organisms.

Learning units and software tutorials: Introduction



Learning units and software tutorials: Introduction

During the 5 pilot courses, 20 teachers each, partners trained the teachers in the production of the learning units already existing, by using the software and following the manual and tutorial indications. Teachers received the reports of the software and worked on the learning unit production based on the reports.
See below a picture of the Ministry for Gozo pilot course.

Learning units and software tutorials: Introduction

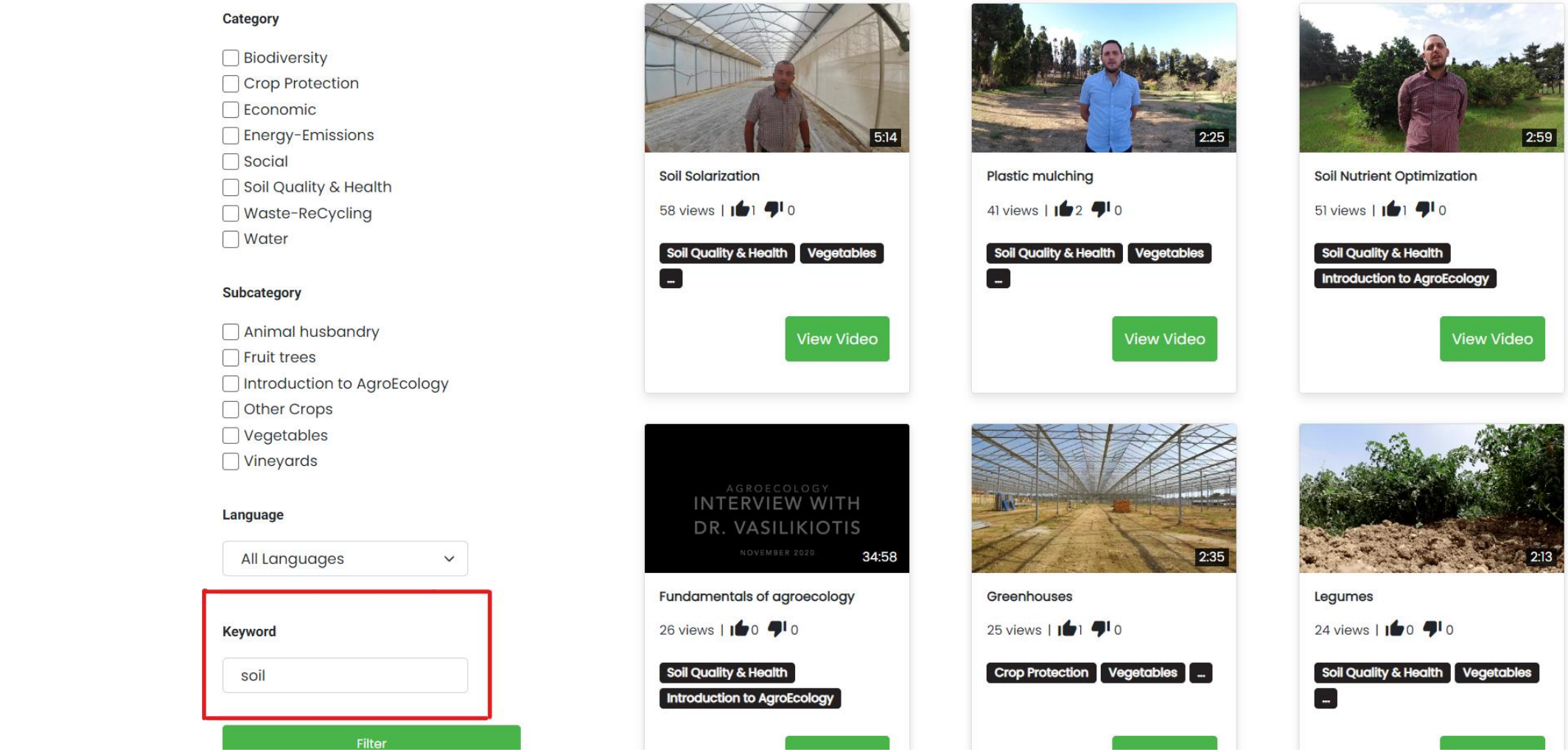
Reports

In accordance to the teachers selection of key words, texts, and labels, the software provides the teachers with a report of videos included in the video mine to be included in the learning units. These reports include the list of videos and the information (encoded text) of the video.

Teachers can read the different texts of the videos, identifying the parts which are more interesting for him, and being able to select the different proposed videos.

Next slide shows the report produced when we request videos about “soil” to the platform.

Learning units and software tutorials: Introduction



Learning units and software tutorials: Introduction

Learning units

With the reports, teachers designed their learning units mainly individually (not so much in working groups), and the results were compared with the already prepared learning units of the consortium. A process of improvement and feedback was done to the teachers, so they could achieve the best results from the software.

See below a sample of a teacher's exercise on the learning units.

d'évaluation, de soutien et d'amélioration de la biodiversité agricole sont abordées.

MERCI DE COMPLETER LE TABLEAU CI-DESSOUS EN Y INTEGRANT LES VIDEOS QUE VOUS ESTIMEZ ILLUSTRER CE SUJET

Nom de la vidéo	Lien vidéo/référence	Description de la vidéo
Biodiversité et agriculture : l'approche agroécologique	https://videoplatform.agrosilver.eu/videoss/191	l'importance de la biodiversité
Les infrastructures agroécologiques	https://videoplatform.agrosilver.eu/videoss/149	Comment favoriser la biodiversité
Méthode d'échantillonnage de la biodiversité	https://videoplatform.agrosilver.eu/videoss/153	Différentes méthodes d'échantillonnage de la biodiversité à proximité des serres
Présentation générale de la biodiversité	https://videoplatform.agrosilver.eu/videoss/166	Présentation générale

Learning units and software tutorials: Innovation of the output

Innovation of the output

The learning units are the final exponent of the software capacity, considered as a high quality output which will concentrate the partners knowledge and the full application of the software capacity.

The 3 units are displayed in the website as a sample of what can be achieved using the software. A repository site with links to the different files, presentations and videos will be included in the web.

Learning units and software tutorials: Transferability and impact

Transferability and impact

As the learning units are a ready-to-use outputs, they together with the pilot courses, actually increased the visibility of the project and attracted visits and clicks to the site.

The Dissemination TG is highlighting the potential of transferability of the 3 learning units, with specific activities to multiply the impact on the participant groups and other target groups.

Based on the potential of replicability, and the planned exploitation activities, it was expected to reach the following key figures and impacts, which were actually reached:

- 102 teachers in pilot courses
- > 500 visualization of video contents, including tutorials for software use and learning units.
- 40 teachers improving their teaching contents and methods.

Learning units and software tutorials: Transferability and impact

The Sustainability and use of these materials after the EU funding was the reason of including a Task in the TG Management, dedicated to the analysis of the Business Model And Economic Sustainability.

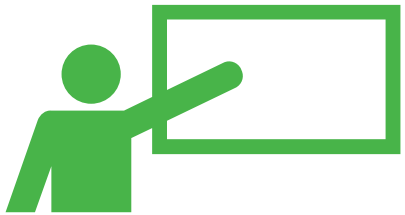
The main tools for promoting the replicability of this output is the Exploitation Plan. The plan takes into account the completion date of the output, the target group it is addressed and specifies:

- Objectives of sustainability actions collectively and by individual partners
- Identification of main exploitable assets and the priority assets
- Measures for successful exploitation

Learning units and software tutorials: Division of work, tasks and methodology

VET provider was the main source of information for developing the learning units, in order to assure that the content is attractive and achieve the expected impacts among the teachers.
Expert partners with intensive knowledge in agroecology were in charge of the development materials, while partners with intensive expertise in knowledge transfer will be responsible for ensuring that the materials have sufficient quality in terms of easy learning and innovative methodology according to European standards.

Ecologykm was the leader of the production of learning units, while FundeuTAD, as software leader, was in charge of coordinating the tutorials.



Learning units and software tutorials: Division of work, tasks and methodology

- Ecologykm successfully coordinated the expert partners with intensive knowledge in agroecology in the development of the 3 units which were used in the pilot courses. A recognition methodology was also developed.
- Ecologykm, CALeG, MAiCH, JUNTAEX, GOZO, as agriculture VET providers, were responsible of working on the video data mine in order to produce 3 units selected for the pilot course (TG5).
- Public administrations had a specific role in revising the tools.
- FundeuTAD leaded the production of tutorial and videotutorial supported by the rest of partners and external contractors.
- Gozo coordinated the pilot courses developed in 5 countries, in collaboration with the VET providers, and was in charge of managing and gathering the pilot reports.
- All the institutions with pilot involved at least 20 teachers in the national pilot course.
- Regional Government had a special role in the validation and exploitation of the tools, trying to reach larger numbers than 20 teachers.

Learning units and software tutorials: Division of work, tasks and methodology

The Learning units, together with the tutorials, are intellectual outputs consuming less resources than the previous outputs, with 65 days of technicians work and 83 of teachers.

The involved tasks for the delivery of this intellectual outputs were:
TG2. MARKET ANALYSIS (Preparation) leader FundeuTAD.
TG3 DATA PLATFORM leaded by MAICh
Task 3.1. Detailed content
Task 3.2. Video production
Task 3.3. Data structuring and indexing

TG4 SILVERKNOWS SOFTWARE leader FundeuTAD
Task 4.1. Development of SilverKnows Software
Task 4.2. Teachers usability and reports
Task 4.3. Video processing and refining

Learning units and software tutorials: Division of work, tasks and methodology

TG5 RECOGNITION TOOL, LEARNING UNITS AND PILOT COURSES leader Ecologykm.

Task 5.2. Learning units for pilot courses

The consortium refined around 500 minutes of videos in order to create enough content to generate the 3 units which were used in the pilot courses.

The consortium selected 3 topics with capacity to attract teachers interest, and developed full learning units including the theoretical and technical contents, and the videos provided by the software.

The contents of the learning units, presentations, theoretical contents, videos, are included in the website to be downloaded by any teacher. The objective is to attract the teachers interest toward the use of the software for improving their current courses or creating new courses.

Learning units and software tutorials: Division of work, tasks and methodology

Task 5.3. Pilot courses

In order to test the software usability, one pilot course was developed in each of the 5 countries, involving a minimum of 20 teachers per pilot course.
The course guided the 20 teachers through the use of the software, focusing on the 3 units, in order to get improvement on the current teachers contents and methods. Findings from every course fed the pilot report and were used in validation workshop.

This Task Group's milestones are:

- 3 learning units and software manuals
- 5 pilot courses and course reports

With the support of the Erasmus+ Programme of the European Union

INTELLECTUAL OUTPUT 3. LEARNING UNITS AND SOFTWARE TUTORIALS

AGROSILVER VALUE

Integrating silver knowledge from agricultural sector into the VET systems

Place, date