

Addressing the current and Future skill needs for sustainability, digitalization and the bio-Economy in agriculture: European skills agenda and Strategy

D3.4 - Online training materials	
Document description	The report provides the outline of the training four modules for trainees (Common and soft skills, Sustainability, Bio-economy, Digitalisation).
Work package title	WP3 - New tools and training design
Task title	Task 3.4: Training content creation and new tools
Status*	RD
Partner responsible	UCLM
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1 Introduction

This Work Package, led by UNITO, aimed at creating relevant educational contents and curricula to answer the skill gap identified in WP1 and WP2:

- Perform an analysis of the methodologies used during the training.
- Provide the outline of the curricula that would be later implemented at the country level.
- Develop the apprenticeship scheme for the work-based period that involved agriculture, agri-food, and forestry.
- Develop the training content for online sessions.
- Develop the training content for trainers and in-class activities.

The material was carefully designed to provide EQF level 4 training in the domains of sustainability, bio-economy, and digital skills, to enhance innovation uptake in agriculture, forestry, and bio-economy. The training materials had a common part related to soft skills and a regional part to match the skills needed by different countries that carried out the training in Europe.

1.1 Task Description

This task, aimed at developing the training content for trainees based on the methodological approach defined in Task 3.1 and the curricula designed in Task 3.2. The material developed for the curricula, will be used in two ways: by farmers, foresters and farm advisors, interested in one or more skills and not in the ECVET certification, and by students, willing to later work in the sector. The latest will get ECVET certification through a completion of the whole defined curriculum.

2 Methodology

2.1 In-person meeting at UCLM premises

In 25-27 July 2022, an in-person meeting was held at UCLM, Spain to discuss about curricula design and training content creation (tasks 3.2&3.4). After a general discussion conducted the first day and evaluation of the current activities, participants were divided in two groups to develop the learning outcomes of the training materials related to sustainability and digitalisation mainly.



The results of the two-day meeting can be summarized as following:

- 1) UNITO will provide login and password to check the material in PLANET page <https://www.erasmus-planet.eu/course> to use it as example
- 2) Responsible partners will revise and update the learning outcomes
- 3) Responsible partners will fill in the excel files with responsible people for each lesson/learning outcome
- 4) Leader and co-leader will check the excel files to look at the missing content
- 5) Content outline will be uploaded in English – one page for each lesson, following planet format
- 6) Material could be pdf (documents, powerpoint with notes, link to YouTube or external material)
- 7) Online meeting for content preparation with leaders and co-leaders, to define step for content preparation, responsible people, deadlines (doodle to find a date)
- 8) Format for powerpoint is already available (in the management portal)
- 9) Disclaimer & credit page

Each lesson made a page – the aim was to provide material at this stage. However, it had to be organised as a lesson. We agreed the hours for each curriculum in the excel file were related to the **content duration**, without the student work. Total hours for each curriculum must be around/above 150, 30-40 for soft skills, entrepreneurship and basic ICT skills.

Common lessons and specific lessons for each curriculum could be around 120-140 hours total.

For each lesson was requested:

- 1) Top page, the syllabus that explain the student the activities to be carried out, that include link to external documents, videos, powerpoint presentation

- 2) Material in a folder in google drive related to that lesson (all material). The folder will be structured
- 3) Material could be self-made, translated from a source, provided by external contacts (in this case the responsible person should provide link, login and password to access the material)
- 4) The main folders will be 4: soft skills, bioeconomy, digitalisation, sustainability
- 5) For external material we need to be sure we can link to that material (with a disclaimer page)
- 6) Pool of questions for EQF level 4 and for EQF level 5
- 7) Upload the lesson in the LMS
- 8) In addition to each content provider FENACORE, GAIA, ACTIA, AERES, FIAB and GZS will revise the content of the course.

The training programme was divided into four modules, each part being dedicated to one domain (sustainability, bioeconomy and digitalisation) and one module for common skills, related to worker safety, gender issues, soft skills that is mandatory for achieving the ECVET and EQAVET certification.

Module – Leader – Co-leader

Soft skills and Entrepreneurship - INFOR, EFB, LVA, AC3A, UNITO, ICOS, CONFAGRI

Sustainability - UCLM, UNITO, ICOS, AC3A, AP

Bio-economy - UHOH, FJ-BLT, CEPI, ICOS, AP

Digitalisation - CERTH, PA, FJ-BLT, UNITO, UHOH

2.2 Methodologies - modules

For each main module, an Excel file was created to provide comprehensive information. It contained details regarding the number of lessons within the module, the expected learning outcomes for students, the responsible parties involved in developing each lesson, and the designated deadline for submission.

Lesson	Learning Outcomes	Content creator	email	Delivery date
D010A_what_is_digitalisation	Understand comprehensively from different perspectives what is meant by digitalisation	Daniel Fenrich (UHOH)	daniel.fenrich@uni-hohenheim.de	2/28/2023
D011A_digital innovation	Ability to describe what is meant by digital innovation	Daniel Fenrich (UHOH)	daniel.fenrich@uni-hohenheim.de	2/28/2023
D012A_SmartFarm vs Precision Agriculture	Ability to describe what is the difference between smart farm and precision farm concept	FJ-BLT	david.ortega@josephi-num.at	16/1/2023
D020A_Technologies_by_sub_sectors	Understanding the availability of digital technologies in different production sectors	Efthymios Rodias (CERTH)	e.rodias@certh.gr	5/3/2023
D030A_digitalisation_and_the_impact_of_technology	Ability to summarize how digital technology has evolved in time and can name the future digitalisation trends ("Technological breakthroughs from the early days of farming to 2030 and beyond")	Efthymios Rodias (CERTH)	e.rodias@certh.gr	5/3/2023
D040A_Basic_remote_sensing	The tools involved in geographical mapping and positioning, such as GPS (global positioning systems), GIS (geographical information systems), and RS (remote sensing). LO-suggestion: Ability to describe the main differences in the use of GPS, GIS and RS in agriculture	FJ-BLT	david.ortega@josephi-num.at	2/9/2023
D041A_Telematics and Aerial Sensing	Ability to use modern technologies and equipment with high precision positioning systems, geo-mapping and/or automated steering systems for agricultural activities.	FJ-BLT	david.ortega@josephi-num.at	2/9/2023
D051A_Farm_management_concept_of_FMIS	Ability to describe the concept of FMIS	FJ-BLT	david.ortega@josephi-num.at	2/9/2023
	Ability to describe importance of management information systems and databases in planning, managing and operating agricultural enterprise and agricultural production.			2/23/2023
D052A_Farm_management_different_kinds_of_FMIS	Ability to describe case examples of different kinds of FMIS in different size farms and production lines in agriculture	ProAgria	krista.mikkonen@proagri.fi	31/3/2023

From September 2022, a bi-weekly meeting schedule was established to ensure timely progress and adherence to requirements during lesson content creation.

2.3 Folder structure on gDrive

2.3.1 Bioeconomy

- B010_Understanding_the_bioeconomy
- B015_Principles_of_the_Bioeconomy
- B030_EU_and_national_bioeconomy_policies_and_strategies
- B040_sustainability_Benefits_for_stakeholders_and_consumers
- B050_Biotechnology_-_History_and_Applications
- B060_Biomass_production

- B080_Forestry_based_bioeconomy
- B082_CO2_Capture
- B084_Ecosystem_Management
- B086_Bioproducts from forestry
- B088_Sustainable_forest_Woodland management
- B090_Agritech_and_agricultural_products
- B100_Biorefineries_and_value_from_food_waste
- B110_Anaerobic_Digestion_process
- B140_Safety_legislation_and_Regulations
- B150_Safety_Statements
- B160_Risks_and_Controls
- B190_Working_with_Machinery

2.3.2 Digitalisation

- D010A_what_is_digitalisation
- D011A_digital innovation
- D012A_SmartFarm vs Precision Agriculture
- D020A_Technologies_by_sub_sectors
- D030A_digitalisation_and_the_impact_of_technology
- D040A_Basic_remote_sensing
- D041A_Telematics and Aerial Sensing
- D051A_Farm_management_concept_of_FMIS
- D052A_Farm_management_different_kinds_of_FMIS
- D053A_Farm_management_hardware_and_software_configuration
- D054A_Farm_management_understand outputs
- D055A_Farm_management_precision_animal_health_system
- D060A_industry_4.0
- D071A_Forestry_supply_chain_principles_and_knowledge
- D072A_Agrifood_production_supply_chain_management
- D080A_Introduction_to_digitalisation_tools_and_machinery
- D081A_Introduction_to_digitalisation_tools_and_machinery_II
- D082A_Software and applications Useful for Farm System
- D091A_control_the_environment_storage_operator_abilities
- D092A_control_the_environment_storage_DIY_vs_outsourcing
- D100A_greenhouse_control
- D110A_use_of_robots_and_drones
- D120_Operate_digital_hardware
- D130_Digital_Sustainability
- D140_Precision_farming_weather_forecast_knowledge_and_tools
- D150_transferring_data_from_application_-_data_exchange
- D160_Basic_Statistics
- D170_Ability_to_implement_traceability_systems

- D180_Practical_training_with_job-specific_machinery
- D185_Logistics_Warehousing_Transportation
- D190_Food_processing_technical_skills
- D200_Food_processing_automation
- D210_Food_packaging

2.3.3 Soft Skills & Entrepreneurship

- K011_Soft_Skills_and_Digital_Compencies
- K021_Modern_Technologies
- K022_Cyber_Security_Risks
- K031_Peer_Groups_in_Online_Learning
- K032_Online_Communities_and_Collaborative_Learning
- K033_Tools_and_Technologies_for_Collaborative_Learning
- K041_Innovation_Strategy
- K051_Introduction_to_Entrepreneurship
- K052_The_Business_Model_Canvas
- K054_Economic_basic
- K061_Organization_and_Planning_SMART_objectives
- K062_Organization_and_Planning_critical-path_network_system
- K063_Organization_and_Planning_prioritizing_work_effectively
- K072_Leadership_People_Management
- K073_Relationship_Building_Communication_Skills
- K074_Team_building
- K075_Delegation
- K081_Principles, policies and institutional regulations
- K082_The duties of employers and employees
- K083_Health and Safety Authority
- K084_Risk analysis and behavior in a state of emergency
- K085_Fire risk and prevention
- K086_The risk of mechanical and electrical equipment
- K087_Protective equipment (PPE) in the workplace
- K091_Consumer_Engagement
- K092_Target_Audience_and_Consumer_Journey
- K093_Route_to_Market_Strategy_Plan
- K094_Digital_Marketing_Models
- K095_Organic_Paid_and_Email_Marketing
- K096_Keyword_Research_and_Competitive_Analysis
- K097_Introduction_to_Google_Analytics
- K098_Digital_Food_Marketing_Case_studies
- K101_Lifelong_learning_and_continuous_learning_CPD
- K102_Problem_solving_and_decision_making
- K103_Introduction_to_Lean_Management

2.3.4 Sustainability

- S010_Sustainability
- S020_Climate_change
- S030_Adaptation_and_Mitigation
- S040_Management_of_resources
- S050_System_Thinking
- S070_Life_Cycle_Assessment_(Aspects)
- S080_Water_General_Introduction
- S090_Water_sources_availability_specification_for_uses
- S101_Availability_water
- S102_Sustainable_Irrigation
- S103_Sprinkler_Irrigation
- S104_Drip_Irrigation
- S105_Surface_Irrigation
- S106_Groundwater_management
- S107_Rainwater_Harvesting
- S111_Treatment technologies for water conditioning
- S112_Uses and treatment technologies for water reclamation
- S120_waste_water_as_environmental_emission
- S131_Soil_Fertility_Management
- S132 Handling of plant protection spraying equipment
- S133 Be able to carry out good agricultural practices in the management of energy
- S134 Water management at farm level
- S135 Prevention_of_damages_to_water_bodies_IAS_SIARPR
- S136 Sprinkler and drip irrigation system evaluation
- S137 Crop Planning
- S140_Water_for_Agrifood
- S150_What_is_Biodiversity
- S160_Biodiversity_as_a_resource
- S170_Biodiversity_impacted_by_practices
- S180_Soil_general_introduction
- S190_Soil_as_a_resource
- S200_Soil_impacted_by_Agri_and_Food_activities
- S210_Soil_impacted_by_industrial_activities
- S220_Air_atmosphere_and_emissions_from_activities
- S230_GHG_emission_reduction
- S232_emission_from_food_industry
- S238_Emission_from_transport_and_logistics
- S240_Climate_change
- S250_Energy_sources
- S252_What_is_renewable_energy
- S254_link_between_energy_and_climate_change

- S256_direct_and_indirect_costs_of_energy
- S258_Energy_management
- S260_agri_and_food_industry_energy_consumption
- S270_Agri_and_food_industry_producing_renewable_energy
- S280_by_products_biomass_digestors_photovoltaic
- S290_crop_rotation
- S300_new_crop_techniques
- S310_Agro-Environmental_Practices
- S320_Low_emissions_Spreading_Spraying_Equipment_&_Practices
- S330_Integrated_Pest_&_Disease_Management
- S340_Crop_Diversification
- S350_Conservation_farming
- S380_Grassland_Management
- S390_Smart_Farming_Introductory_Aspects
- S400_Sustainable_Animal_nutrition
- S410_Sustainable_feed_sources
- S420_Livestock_Reducing_Emissions
- S430_Animal_Welfare
- S440_Responsible_Use_of_Anbitotics
- S450_BATs_Materials_reception_and_preparation
- S455_BATS_for_Size_reduction,mixing_and_forming
- S461-BATS_for_Separation_techniques
- S462_BATS_for_Product_processing_technology
- S471_BATs_for_Heat_processing
- S472_BATS_for_Concentration_by_heat
- S473_BATS_for_Processing_by_removal_of_heat
- S481_BATs_for_Post_processing_operations
- S482_BATS_for_Utility_processes
- S490_Characterisation_of_waste
- S501_Waste_prevention_and_minimization_I:_general_concepts
- S502_Waste_prevention_and_minimization_II:_stock_management
- S503_Waste_prevention_and_minimization_III:_changes_in_manufacturing_processes
- S504_Waste_prevention_and_minimization_IV:_recovery_or_resources
- S511_Waste_prevention_&_management_in_the_agrifood_industry_I:_meat_&_poultry,fish_&_shellfish_and_fruit_&_vegetables
- S512_Waste_prevention_&_management_in_the_agrifood_industry_II:_vegetable_oils_&_fats_and_dairy_products
- S513_Waste_prevention_&_management_in_the_agrifood_industry_III:_grain_mill_products,dry_pasta,starch,animal_feed,bread,confectionery,sugar,coffee
- S514_Waste_prevention_&_management_in_the_agrifood_industry_IV:_yeast,malting,brewery,destilling,wine,soft_drinks_and_citric_acid
- S580_Budget_&_balance
- S590_Expenses

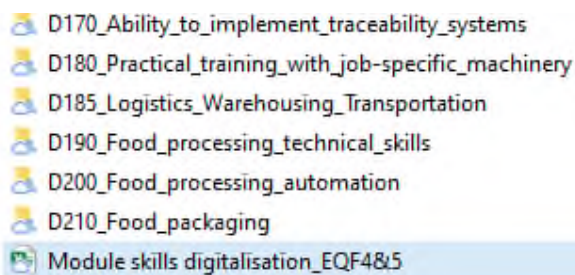
- S600_Costs_of_production_-gross_and_net_margin
- S610_Key_indicators_for_the_sustainability_of_your_business
- S620_Short_supply_chain_management
- S630_Economical_resilience_Circular_Economy
- S640_Lean_introduction
- S650_Short_Supply_chain
- S660_Cooperative_approaches
- S670_Sustainable_communication
- S680_Social_sustainability_for_the_worker
- S690_Social_sustainability_for_the_society
- S700_Policy
- S710_Regulatory_frameworks
- S720_Certification_organic_PDO
- S730_Traceability_and_food_safety_in_industry
- S740_Traceability_and_food_safety_in_agriculture_&_forestry

3 Quality Control







To ensure clarity of requirements for all partners and provide a comprehensive explanation of the structure of the Google Drive repository, UNITO created a guideline document. This document aimed to explain various aspects.

Firstly, the guidelines emphasized that the content preparation should align with the pedagogical use of the material by the training partners. Instead of dividing the content according to the seven curricula, it was organized based on content type. Four main folders were created to house all the content: Bioeconomy, Digitalization, Soft Skills and Entrepreneurship, and Sustainability.

Within each main folder, there were multiple subfolders, each corresponding to a specific lesson outlined in the Excel file found at the bottom of the module. For example, the subfolders were named as B010_understanding_the_bioeconomy and so on.



For each lesson, six folders were created: 01_welcome_and_activities, 02_lectures_and_videos_online, 03_in_class_material, 04_assignment, 05_assessment, and 06_optional_material.

-  01_welcome_and_activities
-  02_lectures_and_videos_online
-  03_in_class_material
-  04_assignment
-  05_assessment
-  06_optional_material

The guidelines provided detailed instructions regarding the type of files to be included in each folder and the specific requirements that the content of those files should meet. For instance, requirements such as English language, examples of well-structured files, and the application of a common FIELDS format were outlined to ensure consistency and adherence to the project's standards.

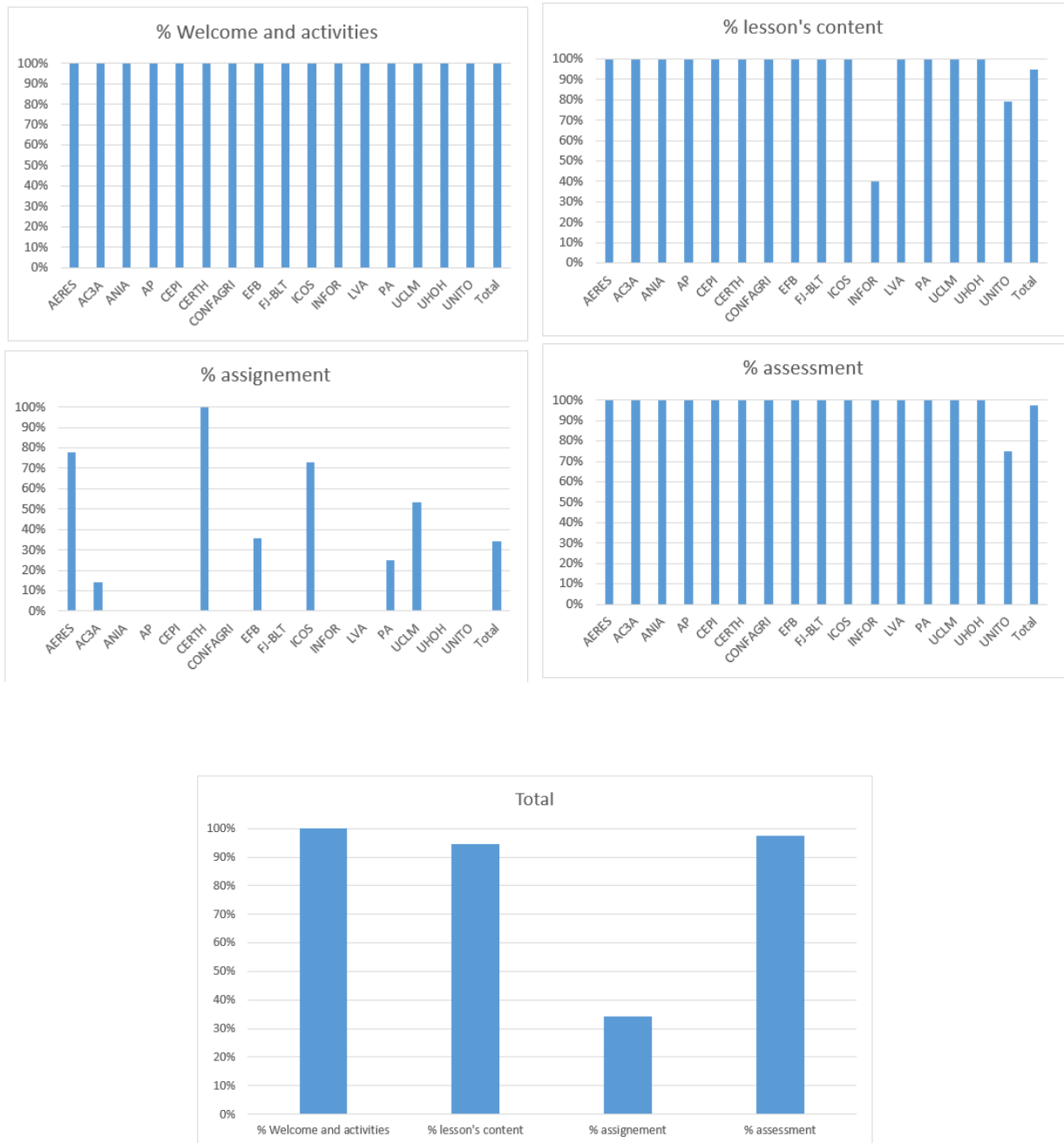
The guideline document also addressed partner's questions that might prove useful and included a scheme illustrating how to appropriately name files within the Google Drive repository.

[FIELDS content preparation guidelines](#)

The guidelines document was initially introduced to partners during an in-person meeting organized by UNITO in Turin on February 28th, 2023. This allowed partners to review the document, seek clarifications by asking questions, and begin the process of organizing their work.

In order to monitor the partners' adherence to deadlines and ensure compliance with the requirements stated in the guidelines, UNITO developed an Access database (Qualitative Control) and an Excel file (Quantitative Control). These tools were implemented to facilitate qualitative and quantitative assessment and ensure proper monitoring of partner activities.

The Excel file consisted of initial overview graphs illustrating the percentage of work completed by each partner involved in material development, along with an overall progress graph for the task.



Additionally, there were individual sheets for each partner, indicating the lessons they were responsible for developing, and indicating whether or not files were present within the corresponding main folders comprising those lessons.

Module	Unit	Lesson	Content creator	email	welcome_and_activities	lectures_and_videos_online_and_in_class_material	assignment (optional)	assessment
Bioeconomy	Forestry based bioeconomy	B082_CO2_Capture	CEPI	Lisa Kretschmann-lisa@re-focus.eu	1	1	0	1
Bioeconomy		B084_Ecosystem_Management	CEPI	Lisa Kretschmann-lisa@re-focus.eu	1	1	0	
Bioeconomy		B086_Bioproducs_from_forestry	CEPI	Lisa Kretschmann-lisa@re-focus.eu	1	1	0	
digitalisation	D070A_Forestry_and_Agrifood_production_chain	D071A_Forestry_supply_chain_principles_and_knowledge	CEPI	Lisa Kretschmann-lisa@re-focus.eu	1	1	0	1
sustainability	Soil: general introduction, types and specification for uses	S180_Soil_general_introduction	CEPI	Lisa Kretschmann-lisa@re-focus.eu	1	1	0	1
sustainability	Soil as a resource	S190_Soil_as_a_resource	CEPI	Lisa Kretschmann-lisa@re-focus.eu	1	1	0	1
sustainability	Soil impacted by Agri and Food activities	S200_Soil_impacted_by_Agri_and_Food_activities	CEPI	Lisa Kretschmann-lisa@re-focus.eu	1	1	0	1
sustainability	Soil impacted by Industrial activities	S210_Soil_impacted_by_industrial_activities	CEPI	Lisa Kretschmann-lisa@re-focus.eu	1	1	0	1
sustainability	Air : general introduction, atmosphere and emission from activities	S220_Air_atmosphere_and_emissions_from_activities	CEPI	Lisa Kretschmann-lisa@re-focus.eu	1	1	0	1
sustainability	Climate Change	S240_Climate_change	CEPI	Lisa Kretschmann-lisa@re-focus.eu	1	1	0	1

tot lessons	tot units
10	8
% of welcome_and activities delivered	100%
% of lectures_and_videos_online and in_class_material delivered	100%
% of assignment delivered (optional)	0%
% of assessment delivered	100%

0 = empty folder
1 = at least 1 file has been uploaded



Instead, the Access Database utilized for quality control of the content consisted of several sheets. One sheet displayed the list of subfolders comprising a lesson where at least one file had been uploaded.

module	unit	folder	idPartProg	ID_mail	ConteggioD
digitalisation	D120_Operate_digital_hardware	06_optional_material	FJ-BLT	David Ortega-david.ortega@josephinum.at	1
digitalisation	D130_Digital_Sustainability	01_welcome_and_activities	FJ-BLT	David Ortega-david.ortega@josephinum.at	2
digitalisation	D130_Digital_Sustainability	02_lectures_and_videos_online	FJ-BLT	David Ortega-david.ortega@josephinum.at	2
digitalisation	D130_Digital_Sustainability	06_optional_material	FJ-BLT	David Ortega-david.ortega@josephinum.at	6
digitalisation	D140_Precision_farming_weather_forecast_knowledge_and_tools	01_welcome_and_activities	CERTH	Efthymios Rodias-e.rodias@certh.gr	1
digitalisation	D140_Precision_farming_weather_forecast_knowledge_and_tools	02_lectures_and_videos_online	CERTH	Efthymios Rodias-e.rodias@certh.gr	2
digitalisation	D140_Precision_farming_weather_forecast_knowledge_and_tools	03_in_class_material	CERTH	Efthymios Rodias-e.rodias@certh.gr	1
digitalisation	D140_Precision_farming_weather_forecast_knowledge_and_tools	04_assignment	CERTH	Efthymios Rodias-e.rodias@certh.gr	1
digitalisation	D140_Precision_farming_weather_forecast_knowledge_and_tools	05_assessment	CERTH	Efthymios Rodias-e.rodias@certh.gr	2
digitalisation	D150_transferring_data_from_application_-_data_exchange	01_welcome_and_activities	CERTH	Efthymios Rodias-e.rodias@certh.gr	1
digitalisation	D150_transferring_data_from_application_-_data_exchange	02_lectures_and_videos_online	CERTH	Efthymios Rodias-e.rodias@certh.gr	2
digitalisation	D150_transferring_data_from_application_-_data_exchange	03_in_class_material	CERTH	Efthymios Rodias-e.rodias@certh.gr	1
digitalisation	D150_transferring_data_from_application_-_data_exchange	04_assignment	CERTH	Efthymios Rodias-e.rodias@certh.gr	1
digitalisation	D150_transferring_data_from_application_-_data_exchange	05_assessment	CERTH	Efthymios Rodias-e.rodias@certh.gr	2
digitalisation	D160_Basic_Statistics	01_welcome_and_activities	CERTH	Efthymios Rodias-e.rodias@certh.gr	3
digitalisation	D160_Basic_Statistics	02_lectures_and_videos_online	CERTH	Efthymios Rodias-e.rodias@certh.gr	4
digitalisation	D160_Basic_Statistics	03_in_class_material	CERTH	Efthymios Rodias-e.rodias@certh.gr	1
digitalisation	D160_Basic_Statistics	04_assignment	CERTH	Efthymios Rodias-e.rodias@certh.gr	1
digitalisation	D160_Basic_Statistics	05_assessment	CERTH	Efthymios Rodias-e.rodias@certh.gr	2
digitalisation	D170_Ability_to_implement_traceability_systems	01_welcome_and_activities	LVA	katharina.stollewerk-katharina.stollewerk@lva.at	3
digitalisation	D170_Ability_to_implement_traceability_systems	02_lectures_and_videos_online	LVA	katharina.stollewerk-katharina.stollewerk@lva.at	4
digitalisation	D170_Ability_to_implement_traceability_systems	05_assessment	LVA	katharina.stollewerk-katharina.stollewerk@lva.at	3
digitalisation	D180_Practical_training_with_job-specific_machinery	01_welcome_and_activities	PA	Krista Mikkonen-krista.mikkonen@proagria.fi	2
digitalisation	D185_Logistics_Warehousing_Transportation	01_welcome_and_activities	UNITO	Remigio Berruto-remigio.berruto@unito.it	1
digitalisation	D190_Food_processing_technical_skills	01_welcome_and_activities	LVA	katharina.stollewerk-katharina.stollewerk@lva.at	2
digitalisation	D190_Food_processing_technical_skills	03_in_class_material	LVA	katharina.stollewerk-katharina.stollewerk@lva.at	26
digitalisation	D190_Food_processing_technical_skills	05_assessment	LVA	katharina.stollewerk-katharina.stollewerk@lva.at	6
digitalisation	D200_Food_processing_automation	01_welcome_and_activities	UNITO	Remigio Berruto-remigio.berruto@unito.it	1
digitalisation	D210_Food_packaging	01_welcome_and_activities	UNITO	Remigio Berruto-remigio.berruto@unito.it	1
Soft_Skills_Entrepreneurshij	K011_Soft_Skills_and_Digital_Competerencies	01_welcome_and_activities	EFB	Christos Koidis-ck741@efb.gr	2
Soft_Skills_Entrepreneurshij	K011_Soft_Skills_and_Digital_Competerencies	02_lectures_and_videos_online	EFB	Christos Koidis-ck741@efb.gr	1
Soft_Skills_Entrepreneurshij	K011_Soft_Skills_and_Digital_Competerencies	05_assessment	EFB	Christos Koidis-ck741@efb.gr	1
Soft_Skills_Entrepreneurshij	K021_Modern_Technologies	01_welcome_and_activities	EFB	Christos Koidis-ck741@efb.gr	2

Additionally, for each designated member responsible for developing a file, there was a mask within Access that facilitated visualizing all the files associated with that partner's responsibility. This feature allowed the inclusion of notes to assess whether the files met the main requirements agreed upon during previous meetings.

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digitalisa D190_Food_processing_tech03_in_class_material			FIELDS-D190-fundamentals of food proce	pptx	3/2/2023	katharina stolle	katharina.sto	yes	ok	yes	yes	3/7/2023	<input type="checkbox"/>
digitalisa D190_Food_processing_tech03_in_class_material			FIELDS-D190-fundamentals of food proce	pptx	3/2/2023	katharina stolle	katharina.sto	yes	ok	yes	yes	3/7/2023	<input type="checkbox"/>
digitalisa D190_Food_processing_tech03_in_class_material			FIELDS-D190-HACCP-01 HACCP preparati	pptx	1/20/2023	katharina stolle	katharina.sto	yes	ok	yes	yes	3/7/2023	<input type="checkbox"/>
digitalisa D190_Food_processing_tech03_in_class_material			FIELDS-D190-HACCP-02 hazard analysis_1	pptx	1/20/2023	katharina stolle	katharina.sto	yes	ok	yes	yes	3/7/2023	<input type="checkbox"/>
digitalisa D190_Food_processing_tech03_in_class_material			FIELDS-D190-HACCP-03 control measures	pptx	1/20/2023	katharina stolle	katharina.sto	yes	ok	yes	yes	3/7/2023	<input type="checkbox"/>
digitalisa D190_Food_processing_tech03_in_class_material			FIELDS-D190-HACCP-04 verification valid	pptx	2/16/2023	katharina stolle	katharina.sto	yes	ok	yes	yes	3/7/2023	<input type="checkbox"/>
digitalisa D190_Food_processing_tech03_in_class_material			Food Processing Module - Op Digi.docx	docx	3/2/2023	katharina stolle	katharina.sto	yes	ok	yes	yes	3/7/2023	<input type="checkbox"/>
Soft_Skil K061_Organization_and_Pla 03_in_class_material			FIELDS_K061_SMART_objectives.pptx	pptx	2/16/2023	katharina stolle	katharina.sto	yes	ok	yes	yes	3/7/2023	<input type="checkbox"/>
Soft_Skil K101_Lifelong_learning_and 02_lectures_and_videos_K101-LLL-FIELDS-CPD			pptx	pptx	1/20/2023	katharina stolle	katharina.sto	yes	ok	yes	yes	3/7/2023	<input type="checkbox"/>
Soft_Skil K101_lifelong_learning_and 03_in_class_material			K101_lesson_content_01.pptx	pptx	4/6/2023	katharina stolle	katharina.sto	yes	ok	yes	yes	3/7/2023	<input type="checkbox"/>

4 Learning Management System

Despite the guidelines outlined in the Erasmus+ Programme Guide, experience has demonstrated that the outputs of Erasmus+ Projects are frequently made available only to registered users. The European Commission has approved of this provided that at least some basic information on the results is made available to the public without charge or registration. In other words, while the whole training could be made available only after registering, some components, such as the training structure, content description, and video teasers, should be shared online for free.

An identification of the trainees is necessary in order to grade them and track their knowledge growth (by allocating test data from the pre-test and final test). Without it, the training program's objectives could not be measured or achieved. Without it, it would be ineffective. There has to be a mechanism for UNITO to administer the trainer registration process. There must be a method for the trainers to administer the registration of the learners (trainees) and for UNITO to provide assistance (if required). Additionally, this will ensure that personal data management procedures must be improved in order to fully comply with the General Data Protection Regulations (GDPR).

Additionally, experience has shown that certain Erasmus+ project outcomes are commercialized after the project has ended. This is primarily due to the fact that completely free outputs, even if they are still accessible after the project is over, are frequently disregarded after the project consortium disbands. These outputs, among other things, are not frequently updated, have broken links, and do not offer registered users any kind of customer support. However, when outputs are paid for, there is more incentive to maintain the outputs.

We, therefore, recommend applying the [CC BY-NC 4.0](https://creativecommons.org/licenses/by-nc/4.0/) Creative Commons license (Attribution-Non-commercial 4.0 International) during the project lifetime and within four years after its closure.

4.1 E-learning platform sections and user navigation

The platform needs an intuitive layout and menu system for practical usability. To guarantee this, the platform must provide easily understandable icons (that visually represent the information they represent and the user's expectations).

Due to these factors, the e-learning platform must have the following content icons:

- A preview of the video or a video icon
- symbol for documents
- Notes-containing papers (for all PowerPoint presentations included in the training course).
- symbol for external links

The training platform also needs the option of two separate sections with two different contents and user options in order to handle the diverse content and user options for teachers and trainees.

4.2 Moodle platform

The goal of the Moodle learning platform is to give teachers, administrators, and students access to a single, reliable, secure, and integrated system for building customized learning environments. Moodle, which powers tens of thousands of learning environments worldwide, is used by both large and small institutions and organizations. It is the most commonly used learning platform in the world, with more than 90 million users spanning academic and corporate applications. The learner-centric tools and collaborative learning environments provided by Moodle are extremely effective at enhancing both teaching and learning. Moodle is simple to understand and use thanks to its straightforward interface, drag-and-drop capabilities, and well-documented resources in addition to continual usability enhancements.

Under the terms of the GNU General Public License, Moodle is made available without charge. Anyone can use Moodle for both business and non-commercial projects without paying any licensing costs, and they can take advantage of its cost-effectiveness, flexibility, and other benefits. Due to the open-source nature of the Moodle project, it is always being revised and updated to meet the changing needs of its users. Due to Moodle's multilingual features, online learning is not linguistically constrained. The most adaptable toolkit for supporting both blended learning and entirely online courses is this one. Configure Moodle by enabling or removing essential elements, then utilize its full range of built-in capabilities to effortlessly integrate everything required for a course, including external collaboration platforms like forums, wikis, chats, and blogs.

Security controls are continuously updated and incorporated in Moodle development processes and software to defend against unauthorized access, data loss, and misuse. Moodle is committed to preserving data security and user privacy. For maximum control, Moodle can be quickly deployed on a private, secure cloud or server. Moodle is accessible from anywhere in the globe because it is web-based. Content on the

Moodle platform is easily accessible and consistent across a variety of web browsers and devices thanks to a by default mobile-compatible interface and cross-browser compatibility.

The Google Drive repository offered a place for partners' generated work to be stored, but it also came with some hazards. Despite the fact that UNITO had backups in place, partners might still accidentally delete files. Even while lost files may be recovered, frequent occurrences of this kind would take a lot of time. The partners opted to move the content to a Moodle platform as a solution to this problem. Partners, teachers, students, and employees would have a safer atmosphere where they could download the lessons without worrying about losing any information thanks to this platform.

An outside consultant was hired to build the Moodle platform in order to do this.

5 Conclusion

In this report an overview of the training contents has been provided.

The training program was structured into four modules, with each section dedicated to a specific field: Sustainability, Bioeconomy, Digitalization and a common module related to the Soft Skills & Entrepreneurship, considering the occupational profiles developed in task 2.1. In order to bear the EQAVET certification, each occupational profile outlined will correspond approximately to 680 h, of which 120 online, 180 in-class, and 360 as a work-based period, with 20 more hours for the assessment.

The Learning Management System chosen was Moodle platform since is simple to understand and use thanks to its straightforward interface, drag-and-drop capabilities, and well-documented resources in addition to continual usability enhancements. The modules and their respective lessons will be uploaded to this platform, and they will be accessible to anyone who creates an account on the platform. This approach will allow us to monitor the number of visitors to the site. Furthermore, it has been determined that the Moodle platform will be integrated into the broader Pact for Skills platform, establishing its place within a sector skills alliance.