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Smart Entrepreneurial Education and training in Digital farming:

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Expert/Advisor in Digital Farming Qualification Design

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Abstract: This document present the design process and the qualification analytical structure of the Profile of Expert/Advisor in Digital Farming.

The SEED Project Consortium consists of:

Partner	*Name*	*Country*
1	Umbraflor Azienda Vivaistica Regionale	IT
2	Istituto di Istruzione Superiore Ciuffelli-Einaudi	IT
3	EGInA Srl	IT
4	EUROGEO	BE
5	Slovenská poľnohospodárska univerzita v Nitre	SK
6	Universiteit Gent	BE
7	Asociación de la Industria Navarra	ES

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1 QUALIFICATION STRUCTURE

1.1 Qualification architecture

As we have seen in the previous report, the building approach assumes the qualification organised into:

- a core set of competence units, expression of the global, common dimension;
- a complementary set of domain-related competence units, more responsive to the different contexts, useful also in order to innovate the more "traditional" local qualifications

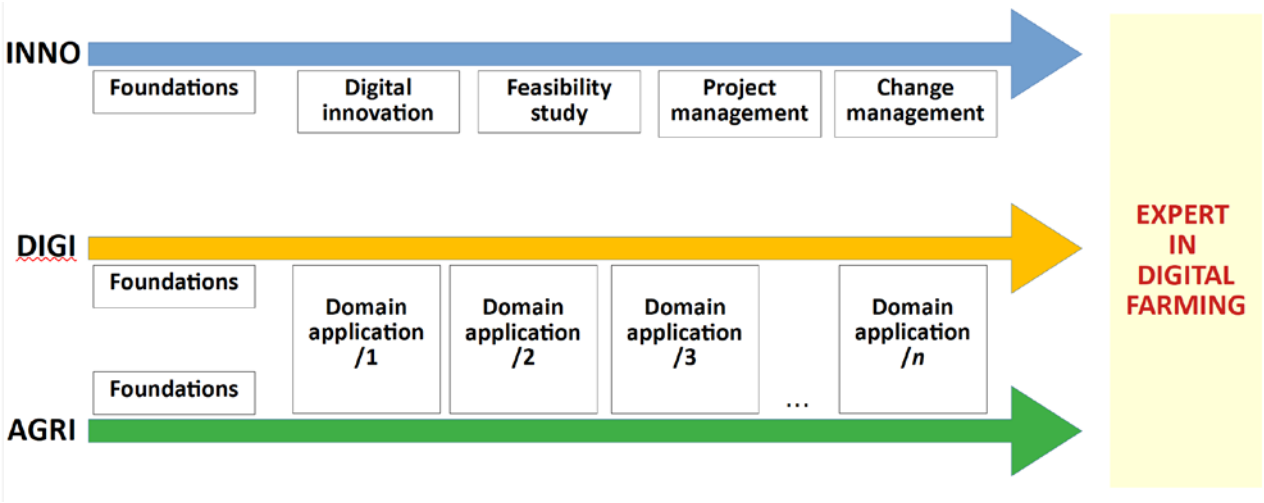

Figure 1 Qualification logical architecture

Following the desk/field analysis, integrated by a selected collection of literature sources, the core appears to be characterized by three main dimensions:

- **Agribusiness**, assumed as the economic knowledge foundations and skills (business models and competitive drivers; logic and organization of production, logistic and selling processes; integration in the value chain);
- **Digital**, assumed as the technical knowledge foundations and skills (Information and data literacy, Communication and Collaboration, Digital content creation, Problem solving), all at the Advanced/Highly specialised levels of the Digcomp 2.1 framework, accordingly declined to the Agribusiness specificities;
- **Innovation**, assumed as the knowledge and skills necessaries to understanding the thread and the opportunities, carrying on feasibility studies, defining the correct approach and implement the dues actions, in terms of project management and change management.

The EDF profile can find the suitable contextualization by a variable number of competence units crossing the AGRI and DIGI dimensions, related to the different domain in which the digital technologies may be implemented in order to have a correct cost/benefit rationale. As regards the domain applications, following a top-down value chain approach, four cluster of competencies may be identified:

- **Strategic planning and sustainable management**, focused on the digital smart approach;
- **Precision agriculture**, focused on the productive factors management based on field data;
- **Agrifood and value add services**, addressed to integrate the supply chain via Internet;
- **Digital marketing and e-commerce**, addressed to qualify the market approach and the customer relationship.

1.2 Qualification analytical structure

Level	Topic	Competence units
CORE/Agribusiness	Agribusiness economy	A.1 Agribusiness economy
	Business models	A.2 Business models and value chain integration
	Production models	A.3 Production models
	Marketing and selling models	A.4 Marketing models and processes
		A.5 Selling models and processes
CORE/Digital	Information and data literacy	B.1 Evaluating and managing data, information and digital contents in the agribusiness
	Communication and Collaboration	B.2 Interacting, sharing and collaborating through digital technologies in the agribusiness
	Digital content creation	B.3 Developing digital contents in the agribusiness
	Problem solving	B.4 Identifying needs, technological responses and digital competences gap
CORE/Innovation	Foundations	C.1 Innovation as economic, technological and cultural process: framework
	Digital transformation	C.2 Enabling technologies, key drivers and their impacts
	Feasibility study	C.3 SWOT Analysis and business for the innovation: method and tools
	Project management	C.4 Innovation process planning, implementing and evaluating
	Change management	C.5 Organization and Human Resources Management drivers and enablers
Domain applications	Strategic planning and sustainable management	D.1 Strategy, Data and Decision Support Systems
		D.2 Sustainable management of productive factors and environment
	Precision agriculture	D.3 Cartography and GIS
		D.4 Drones
		D.5 Remote and proximal sensing
		D.6 Data integration and modelling
		D.7 Natural and technical resources management
	Agrifood and value add services	D.8 Integrated logistic
		D.9 Traceability
	Digital marketing and e-commerce	D.10 Digital marketing
		D.11 E-commerce
		D.12 Customer experience

The analytical structure has to be seen as the common reference of the SEED project, not assuming the specific domains (i.e. cropping, winery, fishery, livestock management, …) relevant in terms of real applications. These domains will be identified by each partner, on the base of their operational contexts, and implemented in the training curricula, following their national rules.

1.3 Qualification relational structure

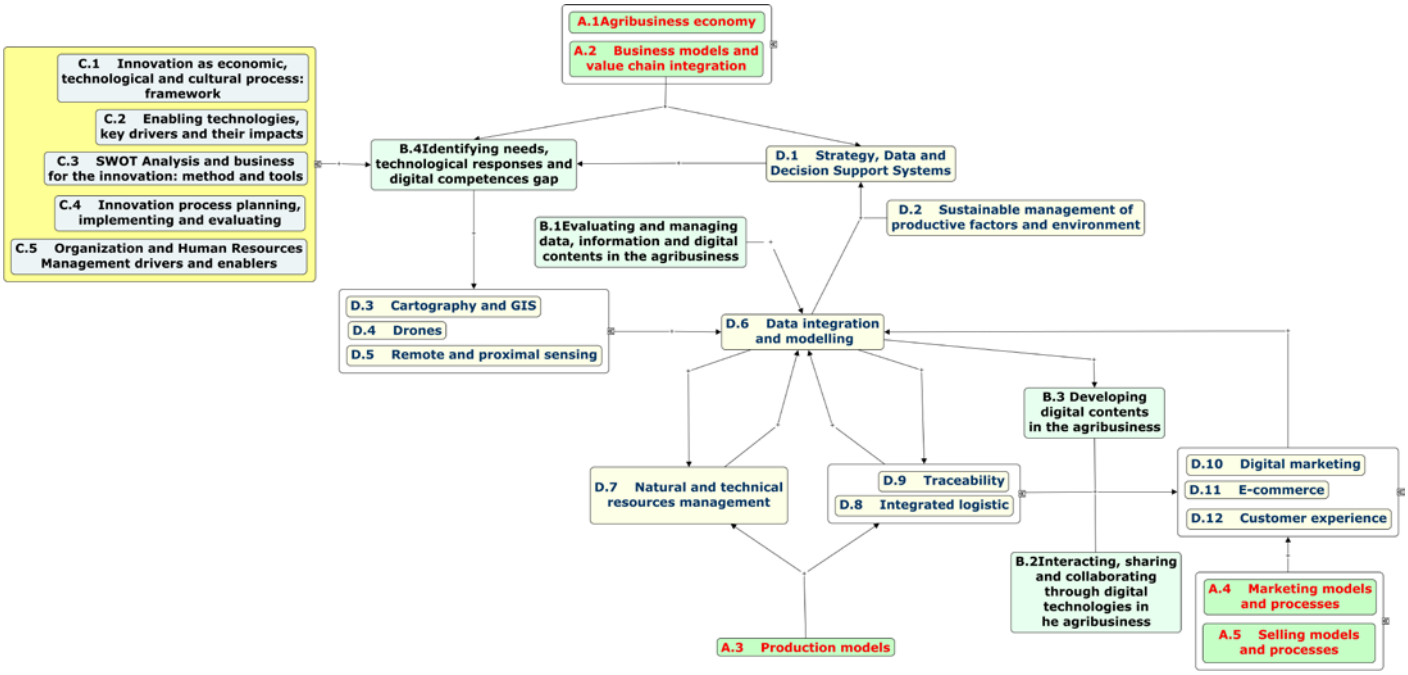

Figure 2 Relational structure of the EDF qualification – Main dependencies

Aim of the relational structure is show the main (inter)dependencies between the single competence units, in order to better understand the rationale at the root of the qualification design. The common qualification is organised into four main typological components:

- **a "hearth", composed by twelve competence units** (labelled as "D.x" series) **with a strong technical and practical orientation**, covering the digital applications in farming processes, from the strategic to the marketing and selling levels, passing by the central theme of the data acquisition, integration and modelling. The inner nucleus include Cartography and GIS; Drones; Remote and proximal sensing; the lateral components regard several applicative aspects of management (efficient use of the natural and technical resources; operations) and commercial processes (marketing and selling operation) aspects, as well as the strategic domain (i.e. sustainability), in their practical declination;
- **an "intermediate layer", composed by four competence units** (labelled as "B.x") devoted to orient and support the **digital management**, following a process logic (from the needs and gaps identification to the operational issues) and the DigComp framework;
- **an "external crown", composed by two groups of competence units**, the first (labelled as "A.x") with a more theoretical character, interesting the **economic foundations** (4 units), the second (C.x, 5 units) supporting the **innovation management**, seen as a key, distinctive topic of the EDF qualification.

The relational structure provides a useful tool for approaching the training curriculum design, in order to define the overall and the singe unit/learning outcome workload, as well as the correct and efficient training unit sequencing (propaedeutic constraints).

1.4 Using the common qualification

The qualification structure and their articulation in Units of Competence shall be assumed as a common reference framework to design the training course. Given the remarkable differences between the four countries involved in the SEED project, some possible “use rules” may be useful to approach the exercise, trying to find the best balance between global and local issues.

- The 26 competence units may be seen as so many learning outcomes (with a 1:1 ratio)
- Otherwise, two or more units – better where part of the same typology (i.e. marked with the same label) – may be collapsed in one more wide aggregate of learning outcomes
- On the contrary, each competence unit may be split in two or more learning outcomes subunits
- The relational structure must be seen as a tool supporting the expression of the competence units into the learning outcomes
- Obviously, all the knowledge and ability contents may be integrated and better detailed, as well as the professional achievements
- Regarding the training curriculum, a different degree of detail among each partner is clearly possible, with due regard for the aim of the SEED project.

2 CORE/Agribusiness competence units

Level	**CORE/Agribusiness**
Topic	**Agribusiness economy**
Competence Unit	**A.1 Agribusiness economy**
EQF Level	5
Professional achievement	Understand the key variables of the agribusiness economy, seen as a reference framework directed to contextualise the digital innovation approach, making sure their strategic coherence.
Knowledge	- Agribusiness: sector's structure at the global and local scales. Position in the general economic frame. Trends - Agribusiness sector main strategies - Public policies and programmes supporting the agribusiness and its innovation
Skills	- Understanding the economy structure of the agribusiness, in terms of market characteristics, demand/supply relations, pricing, (macro)trends, innovation - Understand the kind of strategies adopted at the different scales: single firms, network and consortia, regions and specific territories, global markets - Identify the value drivers of the sector - Understand the role of the digital innovation in the agribusiness processes - Analyse and framing real cases applying a systemic approach

Level	**CORE/Agribusiness**
Topic	**Business models**
Competence Unit	**A.2 Business models and value chain integration**
EQF Level	5
Professional achievement	Understand and analyse the innovative agribusiness models, with a specific focus on the integration between agriculture, food industry, logistic, health improvement and environment safeguard, as a value-driven approach
Knowledge	- Value chain in the agribusiness: primary production, transformation, distribution and usage, in the food and non food markets - Value chain integration: rationales, benefits, impacts and their transformative costs - Innovation, digital transformation and value chain integration: rationales and typical schemes - Value chain digital integration: case studies and lessons learnt
Skills	- Understand the value chain approach as a starting point in order to define an effective digital transformation strategy - Analyse and framing real cases applying a value-chain approach

Level	**CORE/Agribusiness**
Topic	**Production models**
Competence Unit	**A.3 Production models**
EQF Level	5

Professional achievement	Analyse the key variables of the agribusiness productions models, in view of defining a strategic digital approach toward the SMEs potentially interested to innovate their productive processes
Knowledge	- Main production processes and their interdependencies - Production process control - Environmental interdependencies - Key variables of the productive processes and their management strategies
Skills	- Understand the key variables affecting the production processes (planning and managing), and their main functional relations - Understand the basic management principles of the productive processes of an agribusiness firm - Identify production scheduling and management techniques - Identify environmental protection regulations and measures, analysing their impact on the environment - Analyse and framing real cases of production processes

Level	**CORE/Agribusiness**
Topic	**Marketing and selling models**
Competence Unit	**A.4 Marketing models and processes**
EQF Level	5
Professional achievement	Analyse the key variables of the agribusiness marketing models, in view of defining a strategic digital approach toward the SMEs potentially interested to innovate their commercial processes
Knowledge	- Marketing models and processes the agribusiness sector - Key variables of the marketing processes and their management strategies
Skills	- Understand the key variables affecting the marketing processes (strategic design, planning and managing), and their main functional relations - Understand the basic management principles of the marketing processes of an agribusiness firm - Analyse and framing real cases of marketing processes

Level	**CORE/Agribusiness**
Topic	**Marketing and selling models**
Competence Unit	**A.5 Selling models and processes**
EQF Level	5
Professional achievement	Analyse the key variables of the agribusiness selling models, in view of defining a strategic digital approach toward the SMEs potentially interested to innovate their commercial processes
Knowledge	- Selling models and processes the agribusiness sector - Key variables of the selling processes and their management strategies
Skills	- Understand the key variables affecting the selling processes (strategic design, planning and managing), and their main functional relations - Understand the basic management principles of the selling processes of an agribusiness firm - Analyse and framing real cases of selling processes

3 CORE/Digital competence units

Level	**CORE/Digital**
Topic	**Information and data literacy**
Competence Unit	**B.1 Evaluating and managing data, information and digital contents in the agribusiness**
EQF Level	5
Professional achievement	Support the firms operating in the agribusiness to understand the role and the potential value of the data produced/used in the productive and commercial processes, as well as available in the WEB, as a key factor in enhancing the competitive capabilities
Knowledge	- Foundations of data management. Differences and relations between data, information and knowledge - Types of the data/informations produced/used by an agribusiness firm - Agribusiness information systems: typical structures and functions, from the firm to the WEB - Public and private repositories of data potentially relevant in the agribusiness management - Digital tools of personal productivity – managing data, information and digital contents
Skills	- Understand the core concepts of the digital approach - Understand the digital lexicon - Identify the data/informations, their characteristics and value - Use in autonomy the principal digital tools – finding and managing data

Level	**CORE/Digital**
Topic	**Communication and Collaboration**
Competence Unit	**B.2 Interacting, sharing and collaborating through digital technologies in the agribusiness**
EQF Level	5
Professional achievement	Support the firms operating in the agribusiness to use the digital technologies with the aim of sharing value-added informations, reducing transactional costs and improving the integration in the value chain
Knowledge	- Digital technologies supporting interaction, integration and sharing: ecosystem, characteristics, requirements, investment and maintenance costs - Cloud computing and their potential applications - Cybersecurity: risks, technologies, costs - Data property - Digital tools of personal productivity – communication and collaboration
Skills	- Understand the real and potential use of digital technologies supporting interaction, integration, collaboration and sharing in the agribusiness - Identify the technologies and their main characteristics (use, requirements, costs)

	- Identify the possible risks, their impacts and the security requirements - Understand the data property in the cloud and assume the necessary measures to avoid legal controversies - Support the organisation design in order to using ICTs in cooperative work and teamwork - Use in autonomy the principal digital tools – finding and managing data
Level	**CORE/Digital**
Topic	**Digital content creation**
Competence Unit	**B.3 Developing digital contents in the agribusiness**
EQF Level	5
Professional achievement	Support the firms operating in the agribusiness to create/enhance their digital contents, using technologies and tools commonly available in the marketplace, in order to reinforce the marketing and the commercial opportunities, also in the social media world.
Knowledge	- Digital multimedia format: images, sounds, data - Digital integration between multimedia sources and contents - Digital contents creation in the agribusiness: case studies - Digital tools of personal productivity – digital contents development
Skills	- Understand the real and potential use of digital contents in supporting the strategic and operative decision making, as well as in the market/customer relations - Identify the potential fields, the information available and their use in the digital content creation - Identify the large market technologies and their main characteristics (use, requirements, costs) - Identify the possible risks, their impacts and the security requirements - Use in autonomy the principal digital tools – digital content creation

Level	**CORE/Digital**
Topic	**Problem solving**
Competence Unit	**B.4 Identifying needs, technological responses and digital competences gap**
EQF Level	5
Professional achievement	Support the firms operating in the agribusiness to analyse the digital opportunities and to define a strategic orientation, recognizing the technological and the professional needs, both in terms of kind of resources and investment costs
Knowledge	- Digital needs analysis: methods and techniques - Investment cost and expected ROI feasibility study methods and techniques
Skills	- Moving from the firm digital strategy, analyse the existing state, in terms of technological, organizational and professional resources - Identify and explain the principal needs, in an economic perspective - Carry out feasibility studies and explain methods and results to the firm's decision makers

4 CORE/Innovation competence units

Level	**CORE/Innovation**
Topic	**Foundations**
Competence Unit	**C.1 Innovation as economic, technological and cultural process: framework**
EQF Level	5
Professional achievement	Understand the key factors (enablers or hinders) of the (digital) innovation, seen through a multi-dimensional perspective, integrating economical, technological and cultural aspect, in order to define an effective approach toward the firms operating in the agribusiness
Knowledge	Foundations of the innovation processes, in their economic, technological, social, professional and cultural aspects Agriculture specificities: grafting immaterial (digital) values into a deep material, analogical culture... Kinds, roles and behaviours of the “innovation agents” Innovation as a process: incrementalist vs turnaround approach
Skills	Understand the complex nature of the (digital) innovation Characterize the firm/context in terms of willingness to the innovation Detect the enabling/hindering factors Define an effective approach to the innovation Act coherently toward the form and the stakeholder, assuming the useful behaviour

Level	**CORE/Innovation**
Topic	**Digital transformation**
Competence Unit	**C.2 Enabling technologies, key drivers and their impacts**
EQF Level	5
Professional achievement	Understand characteristics, costs, constraints and opportunities of the digital technologies, examine the innovation trends and acquire a specific competence to analyse the demand and supply technological markets
Knowledge	Digital transformation: disruptive technologies, their impacts and trends Digital transformation key drivers: technology availability, digital-human interfaces, Digital transformation markets: demand, supply, competitive factors Reference sources Methods and techniques of digital technology markets
Skills	Understand the main digital technology trends Analyse and monitoring the digital technology markets and identify the emerging technologies Identify the enabling technologies and their potential applications in the agribusiness, and characterize them in terms of characteristics, costs, constraints and opportunities

Level	**CORE/Innovation**

Topic	**Feasibility study**
Competence Unit	**C.3 SWOT Analysis and business for the innovation: method and tools**
EQF Level	5
Professional achievement	Apply a SWOT Analysis methodology to the digital innovation in the agribusiness, with a specific focus to the SMEs, in order to design a sustainable and rewarding approach to strategic and operational application
Knowledge	SWOT analysis methods and tools Typical SWOT analysis variables applied to the agribusiness digital transformation Cases of SWOT analysis applied to the agribusiness sector
Skills	Specify the SWOT analysis method in order to its application to the agribusiness digital transformation Identify the kinds of informations needed to apply a SWOT analysis method Perform the SWOT analysis and report the results coherently with the needs and capabilities of the interested firm

Level	**CORE/Innovation**
Topic	**Project management**
Competence Unit	**C.4 Innovation process planning, implementing and evaluating**
EQF Level	5
Professional achievement	Plan, carry on and check digital innovation projects, identifying and applying the project management methods, techniques and digital tools.
Knowledge	Project life cycle Project management method and techniques Project management applied to the innovation processes Digital tool supporting the project management
Skills	Plan an innovation project in all its aspects Manage the project and control its progressive implementation Revise periodically the project plan Report the state of advance to the firm's decision makers

Level	**CORE/Innovation**
Topic	**Change management**
Competence Unit	**C.5 Organization and Human Resources Management drivers and enablers**
EQF Level	5
Professional achievement	Integrate the digital innovation project with an explicit attention to the soft, human factors implied in the technological and operational change, acting for overcome organizational defences, stimulating collective learning and cultural change, regarding both at the micro (firms) and the "meso" (value chain, local productive contexts) levels.
Knowledge	Cognitive and cultural bias obstacles of the innovation Innovation as a learning process Elements of cultural analysis Professional and training needs analysis: methods and techniques

	Change design and change management: methods and tools Team building and collaborative environments: methods and techniques Bargaining and conflict avoiding/resolving techniques
Skills	Analyse the structure of the firm identifying the roles and responsibilities Identify forms of intervention in collective situations, analysing the process of decision making, to lead in them Identify and value learning opportunities and their relationship with the world analysing the offers and demands of the market in order to maintain a culture of updating and innovation Support team building, collaboration and cooperation schemes

5 DOMAIN APPLICATIONS competence units

Level	**Domain applications**
Topic	**Strategic planning and sustainable management**
Competence Unit	**D.1 Strategy, Data and Decision Support Systems**
EQF Level	5
Professional achievement	Moving from a specific business case, support the agricultural firm to define and to apply, in a value-chain perspective, its digital strategy, using and valorising its data with the appropriate decision support systems
Knowledge	Digital strategies applied to the agribusiness: main trends and case studies Strategic analysis of the agribusiness firm: systemic approach and benchmarking techniques Decision Support Systems applied to the agribusiness
Skills	Analyse the firm's positioning toward its real and potential market and the digital innovation trends of the sector Analyse the coherence between economic environment, strategy and structure (organization, processes, resources) Evaluate the work activities in the productive process, identifying their contribution to the overall process and the digital transformation impacts Recognize business opportunities given by the digital transformation Identify a suitable Decision Support System Support the decisions makers of the firm to apply a Decision Support System in order to evaluate digital transformation scenarios, identifying and gather the appropriate data

Level	**Domain applications**
Topic	**Strategic planning and sustainable management**
Competence Unit	**D.2 Sustainable management of productive factors and environment**
EQF Level	5
Professional achievement	Moving from a specific business case, support the agricultural firm – in a value-chain perspective – to define and to apply their strategy following the development sustainability and circular economy principles
Knowledge	Sustainability principles UN Agenda 2030 framework: SDGs and their targets Circular economy Schemes and cases of integration between agriculture and industry, finalised to create synergies, closing the loop between supply and demand for various kinds of resources Digital contribution of the sustainability and circular schemes
Skills	Assume the sustainability principles as a reference paradigm to analyse and develop the agribusiness Identify the impacts of the digital strategies in terms of sustainable development goals and their target

	Identify the possible sustainability trade-offs between single innovative actions and optimize, with a systemic and integrated view, the innovation process Develop a circular approach, within and between firms, following a value-chain approach

Level	**Domain applications**
Topic	**Precision agriculture**
Competence Unit	**D.3 Cartography and GIS**
EQF Level	5
Professional achievement	Moving from a specific business case, find the cartography and GIS applications more suitable and express them in terms of technological and organizational requirements, investment and maintenance costs, attended value, defining the road map of their implementation
Knowledge	Principles, concepts, development and technologies of topography and photogrammetry Foundations of Geographic Information Systems (GIS), georeferencing techniques and location determination Cartography, photogrammetry, geographic information systems and remote sensing in agronomy. Large public cartographic databases and their WEB repositories Techniques of acquisition, processing and integrating cartographic, positioning and Geophysical, Agronomic and Forest data Transmission and process data techniques in the agricultural machines automation Costs of the GIS applied to the agronomy
Skills	Understand and use the principles of cartography and visualization and apply them to the production and interpretation of maps and to the visualization of georeferenced informations Gather, process and interpret georeferenced informations Carry out thematic cartographies with Geographic Information Systems functional to the precision agriculture Understand the analytical components of Geospatial Information Technologies Use GIS applications to control and automate the navigation systems of the agricultural machinery Use large georeferenced databases of dynamic information from sensor networks to analyse and spatially visualise the data together with its time dependence. Understand and evaluate costs, risks and opportunities of the digital cartography in the precision agriculture applications Carry out feasibility studies, identifying the digital cartography applications coherent with the agricultural contexts Evaluate the costs and appraise the foreseen impacts Plan the digital cartography applications in the precision agriculture process Develop a road map and support the firm in its application, using project management techniques

Level	**Domain applications**
Topic	**Precision agriculture**
Competence Unit	**D.4 Drones**

EQF Level	5
Professional achievement	Moving from a specific business case, find the drone applications more suitable and express them in terms of technological and organizational requirements, investment and maintenance costs, attended value, defining the road map of their implementation
Knowledge	Unmanned systems: technological characteristics of air vehicle, ground control, payload, sensor system Types of unmanned flight characteristics and their limits Regulation of unmanned aerial vehicles and safety Precision agriculture applications: analysis of plant health; plant photosynthetic activity; water and nitrogen uptake; canopy status; superficial water outflow and drainage; hydrogeological risk; crop anomalies; logistical planning; … State-of-the art of the drone and their support tools Costs of the unmanned flight system and processes: equipments, energy use, maintenance, piloting, insurance, data analytic support licencing
Skills	Understand the operational principles of the unmanned systems Understand costs, risks and opportunities in the precision agriculture applications Identify existing models and applications and characterise them in terms of goals, requirements and costs Carry out feasibility studies, identifying the main characteristics of the unmanned systems coherent with the agricultural contexts Choose a suitable drone and their application suite Evaluate the costs and appraise the foreseen impacts Plan the drone applications in the precision agriculture process Develop a road map and support the firm in its application, using project management techniques

Level	**Domain applications**
Topic	**Precision agriculture**
Competence Unit	**D.5 Remote and proximal sensing**
EQF Level	4
Professional achievement	Moving from a specific business case, find the remote and proximal sensing applications more suitable and express them in terms of technological and organizational requirements, investment and maintenance costs, attended value, defining the road map of their implementation
Knowledge	Elements of digital sensoring: principles of measure, data acquisition, storage and transmission Kind of agronomic sensors: physical variables detected, measure ranges, technological characteristics and requirements, autonomy, reliability, scalability, maintenance. Data analytical tools Principles, techniques, methods and parameters of sensory quality assessment Kind of sensors applied to the agricultural machines Proximal and remote sensing integration. Data clouding State-of-the art of the digital sensoring Typical applications in the agribusiness processes: logic, resources, constraints, costs, generated value and Return of Investment

Skills	Identify existing models and applications and characterise them in terms of goals, requirements and costs Analyse the firm's needs and opportunities Define the technological characteristics of the suitable sensors, the data transmission techniques and protocols, the data integrability and the s In case of data clouding, examine the legal ownership of the data acquired by the sensors Evaluate the costs and appraise the foreseen impacts Plan the remote/proximal sensing applications in the precision agriculture process Develop a road map and support the firm in its application, using project management techniques

Level	**Domain applications**
Topic	**Precision agriculture**
Competence Unit	**D.6 Data integration and modelling**
EQF Level	5
Professional achievement	Moving from a specific business case, analyse and define the potential interactions/integrations between different kinds of data/information sources, in order to enhance their value in to the strategical and managerial processes, identifying the suitable digital models, the possible information needs, the technological requirements, defining the road map and supporting the digital implementation
Knowledge	Principles and methods of data modelling Bases of descriptive, inferential and multivariate statistic Data analytics methods and tools Data mining methods, techniques and available tools Data representations finalized to operational decisions support Element of AI applied to the data analysis Typical applications in the agribusiness processes: logic, resources, constraints, costs, generated value and Return of Investment
Skills	Identify existing models and applications and characterise them in terms of goals requirements and costs Analyse the firm's needs and opportunities Characterize the data (potentially) available, their reliability and their consistence in a medium-long term perspective Characterize the digital resources availability and the users' skills state Define the data integration goals, identify the suitable model/techniques, the data acquisition process and the quality control protocol Evaluate the costs and appraise the foreseen impacts Develop a road map and support the firm in its application, using project management techniques

Level	**Domain applications**
Topic	**Precision agriculture**
Competence Unit	**D.7 Natural and technical resources management**
EQF Level	5

Professional achievement	Moving from a specific business case, identify the productive factors (soil, water, fertilizer, machine use and maintenance, …) potentially empowered/optimized by a digital approach and the kind of data and tools required, defining the road map and supporting the digital implementation
Knowledge	Methods and techniques of optimization: state-of-the-art Methods and techniques of efficiency audit: energy, water, soil, seeds&plants; fertilizer, machine, human labour factors Methods and techniques of quality assurance and quality control Typical applications in the agribusiness processes: logic, resources, constraints, costs, generated value and Return of Investment
Skills	Analyse the productive processes, characterizing the inherent operations to the process, equipment, facilities and resources available to plan them. Audit the efficiency following a value-chain, integrated approach Identify the efficiency goals, the productive factors involved and the digital contribution to their achievement Define the possible digital actions Evaluate the costs and appraise the foreseen impacts Develop a road map and support the firm in its application, using project management techniques

Level	**Domain applications**
Topic	**Agrifood and value add services**
Competence Unit	**D.8 Integrated logistic**
EQF Level	5
Professional achievement	Moving from a specific business case, identify the possible development paths of logistical chain potentially empowered/optimized by a digital approach and the kind of data and tools required, defining the road map and supporting the firm and the other relevant actors in the digital implementation
Knowledge	Physical and digital integration: production planning, use of common productive factors, traceability, logistic, stock optimization; transactional costs reduction Typical applications in the agribusiness processes: logic, resources, constraints, costs, generated value and Return of Investment Packaging and integrated logistic
Skills	Analyse the sector's structure, finding the value chain segments potentially interested in physical and digital integration Recognize the logistical process, identifying its phases and documentation associated for planning in the food industry/company Identify potential models of integration at the value chain level and characterise them in terms of value added expected, requirements and costs Analyse the needs and opportunities of the significant actors of the (segment of) the value chain Characterize the digital contribution of the value chain integration Support the involved actors in the common strategic development, with a specific focus on the digital aspects Identify the suitable model/techniques, the data acquisition process and the quality control protocol Evaluate the costs and appraise the foreseen impacts Develop a road map and support the firms in their application, using project management techniques

Level	**Domain applications**
Topic	**Agrifood and value add services**
Competence Unit	**D.9 Traceability**
EQF Level	5
Professional achievement	Moving from a specific business case, identify the possible development paths of traceability potentially empowered/optimized by a digital approach and the kind of data and tools required, defining the road map and supporting the digital implementation
Knowledge	Traceability norms and international standards in the agribusiness sector Needs and methods of traceability in the value chain perspective Technology of food monitoring and control: elements Key informations in the traceability Digital aspects of the traceability Blockchain logic, hardware and software requirement, applications and costs Packaging, labelling and traceability
Skills	Identity the relevant norms and standards Identify existing models and technological applications of traceability, and characterise them in terms of goals, requirements and costs Analyse the packaging, packing and labelling operations, identifying the most important the characteristics of the materials and the process techniques Analyse the firm's needs and opportunities, following the supply chain logic Evaluate the costs and appraise the foreseen impacts Define the suitable actions to implement/develop a high value-added traceability within and between firms Develop a road map and support the firm in its application, using project management techniques

Level	**Domain applications**
Topic	**Digital marketing and e-commerce**
Competence Unit	**D.10 Digital marketing strategy**
EQF Level	5
Professional achievement	Moving from a specific business case, analyse the current marketing strategy and their processes, identifying the opportunity of development/redeployment following a digital approach, defining the road map and supporting the digital implementation
Knowledge	Methods and techniques of digital market analysis Relevant digital marketing cases in agribusiness sector Impacts of the digital marketing on the firm processes: planning, production and logistic management, selling Decision making support techniques in the digital marketing: feasibility study methodologies
Skills	Analyse the relevant (digital) marketplace, finding the competitive key factors Analyse the strategy and the position of the firm towards the (digital) marketplace Analyse the "digital awareness" of the firm and its digital skills

	Identify a possible digital marketing approach, both in terms of strategy (market segmentation) and practical actions - Support the decision making of the firm Define the suitable actions to implement/develop Develop a road map and support the firm in its application, using project management techniques

Level	**Domain applications**
Topic	**Digital marketing and e-commerce**
Competence Unit	**D.11 E-commerce**
EQF Level	5
Professional achievement	Moving from a specific business case and their digital marketing approach, analyse the state-of-the-art of the relating digital marketplace, identifying and evaluating the opportunities, the technological available platforms, their requirements ad costs, defining the road map and supporting the digital implementation
Knowledge	E-commerce models and their characteristics Existing digital marketplace platforms and their technological, operational and cost characteristics Legal requirements and contracts in the e-commerce (local and global markets) Payment methods in e-commerce, their risks and costs. Risk assurance Communication and advertising strategy supporting the e-commerce. Social media integration Operation impacts of the e-commerce processes: production planning, selling, distributing
Skills	Following the digital marketing strategy, examine the existing e-commerce platforms Develop make or buy alternatives: develop a firm specific e-commerce application vs use a general purpose platform already available Evaluate the costs and appraise the foreseen impacts of the different alternatives Support the decision making of the firm Support the firm in the technical and commercial relations to the e-commerce platform, or in the development of a proprietary solution Develop a road map and support the firm in its application, using project management techniques

Level	**Domain applications**
Topic	**Digital marketing and e-commerce**
Competence Unit	**D.12 Customer experience**
EQF Level	5
Professional achievement	Moving from a specific business case and their digital marketing approach, examine the firm's customer analysis and the customer care processes, identifying – adopting an integrated view – the opportunity of development, valorizing the existent data and the social networks, defining the road map and supporting the digital implementation
Knowledge	Customer experience aspects ad their impacts on the business conception and management

	Principles of customer care and customer retention Principles of behavioural economics applied to the e-commerce Digital marketing audit Digital advertising techniques Customer satisfaction measurement techniques Customer involvement and rewarding techniques Digital techniques for reinforcing the customer experience The social media as a customer care and customer experience tool Privacy aspects
Skill	Following the digital marketing strategy, examine the actual position of the firm toward their real and potential customers, in terms of experience analysis and care management Analyse the firm's position toward the digital social media Define a customer care & retention approach, integrating the business and the digital communication processes, reinforcing the customer experience Define the digital advertising techniques Develop a road map and support the firm in its application, using project management techniques

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