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Regionally based qualification standard for Agricultural technician of traditional and organic cultivation - ATTOQS

The standard was developed within the Enhancements in quality of education and training in SEE – EQET SEE[1] project by the representatives of 6 participating economies: Albania, Bosnia and Herzegovina, Kosovo*[2], Montenegro, Republic of North Macedonia and Serbia.

Part I – general information

Qualification standard	
1. Qualification title	Agricultural technician of traditional and organic cultivation Albania: Bujqësi Tradicionale dhe Organike (TBC) BiH: Agrotehničar organske i tradicionalne proizvodnje Kosovo*: TBC Montenegro: Agrotehničar North Macedonia: Agrotehničar Serbia: Poljoprivredni tehničar
2. Qualification type	Qualification is **full** qualification. Qualification can be obtained in **the initial vocational education and training**, in **education and training of adults or** to be awarded in the system of quality assured **validation of informal and non-formal learning**.
3. Qualification description/ justification /rationale, need for the qualification	Agricultural technician of traditional and organic cultivation (ATTOC), plans, organizes and coordinates plant and livestock production and carries out basic processing of primary products. ATTOC applies adequate and relevant technologies in farming, vegetable growing, fruit growing, viticulture and livestock production. ATTOC organizes and implements basic processing, finishing, packaging and storing of plant and animal origin products in an ecologically sustainable manner. He/she is involved in procurement and product placement. Agrotechnician applies the standards and norms of traditional, organic, conventional and integral production and implements environmental, health and workplace protection measures, ensuring compliance with quality standards in its work. ATTOC communicates with superiors and colleagues applying the rules of business communication in an ethical and professional manner in accordance with the principles of gender, racial, national, cultural, religious and other equity. ATTOC plans and implements marketing activities independently and in a team. He/she follows trends, achievements, new technologies (including ICT) and applies them in work and production processes with continuous professional development. This qualification is relevant regionally because it is based on regionally agreed occupational standard, developed in cooperation with regional VET agencies.

[1] More about the project is available on the project website https://eqet.erisee.org/

[2] * This designation is without prejudice to positions on status and is in line with UNCSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence.

4.	**Corresponding occupational standards, connection to ISCO or any other evidence about consultation with labour market stakeholders**	Regionally based occupation standard Agricultural technician of traditional and organic cultivation was used as a basis for development of this regionally based qualification standard. ISCO 3142 Agricultural technicians 6130 Mixed crop and animal producers
5.	**Qualification level (EQF)**	Level in the European Qualifications Framework for Lifelong Learning (EQF 1-8): 4
6.	**Qualification credit value or years/hours of duration and share of units of general education in the overall qualification**	This qualification covers range of 100-140 ECVETs or 1500-3000 hours required by an individual for attaining the learning outcomes of this qualification. It includes both induction time as well as time spent in learning and training outside the classroom. One ECVET in regional level should be understood as 15 – 25 hours (by EU Recommendations, hour is considered as 60 minutes lasting) The ECVET credits are allocated only for the vocational part of the qualification standard. The share of vocational components and the share of general education within a qualification as an element of a qualification standard per economy:

Economy	VET ULOs share of the total volume of the qualification	General education ULOs share of the total volume of the qualification
Albania:	60%	40%
BiH:	60%	40%
Kosovo*:	63%	37%
Montenegro	56%	44%
North Macedonia:	55-60%	40-45%
Serbia:	55-60%	40-45%

7.	**Sector / the field of work (according to ISCED)**	Classification of the qualification according to the EUROSTAT ISCED-F (FOET – Fields of Education and Training) classification. 08 Agriculture, forestry, fisheries and veterinary 081 Agriculture 0811 Crop and livestock production
8.	**Specific quality assurance requirements related to qualification**	Qualification standard for Agricultural technician of traditional and organic cultivation shall be further nationally developed by economies participated in the process, following their national methodology. This regionally-based qualification standard for Agricultural technician of traditional and organic cultivation shall form the core of national qualification standards subsequently developed. To assure the quality of national QS, national procedures shall be followed (adoption by relevant bodies, monitoring of implementation by relevant bodies and certification of attendees of education).

9. Admission / entry requirements / preconditions for qualification acquisition	Minimum entry requirement for Agricultural technician of traditional and organic cultivation in terms of prior qualification that needs to be obtained is elementary school or qualification of the EQF level 1. Additional requirements are related to prescribed legislation of each economy.
10. Progression / permeability in the qualification system / further qualification and employment possibilities	After completing the qualification, the student has the opportunity for: **Employment:** • self-employment • employment in agricultural combines, agricultural cooperatives or in individual agricultural holdings **Vertical permeability:** • continuation of post-secondary education • continuation of higher education in the relevant area or other areas if a prescribed certificate by Law is obtained in advance **Horizontal permeability:** By enrolling in another education programme, the modules (sectoral and general) which are part of the curriculum for Agricultural technician of traditional and organic cultivation and of the new enrolling curriculum are taken into account.
11. Qualification structure: List of mandatory learning outcome units and elective learning outcome units	**Mandatory units of learning outcomes are:** UNIT 1 - Organization/ Management of agricultural production UNIT 2 - Mechanization, automatization and equipment UNIT 3 - Conditions for agricultural production UNIT 4 - Production of annual plants (field crop and vegetable/ agricultural products) UNIT 5 - Production of perennials plants (fruit growing and viticulture) UNIT 6 - Livestock production and animal care UNIT 7 - Processing and storage of primary food products (plant and livestock products) UNIT 8 - Business Communication and Entrepreneurship in Agriculture UNIT 9 - Standards, Environmental protection and work safety **Possible elective units of learning outcomes are:** UNIT 1 – Beekeeping Unit 2 - Mushroom cultivation UNIT 3 - Fodder plants UNIT 4 - Cultivation of medicinal, aromatic and spice plants/Cultivation of Mediterranean plants UNIT 5 – Fisheries UNIT 6 – Floristry UNIT 7 – Agrotourism UNIT 8 - More complex processing for specific plant products (e.g., olives, berries, teas, etc.) UNIT 9 - More complex processing of specific products of animal origin (e.g., cheeses and other dairy products, processed meat, etc.)
12. Agreement on the regionally based qualification standard	Process of QS development for Agricultural technician of traditional and organic cultivation lasted since 1st July till 31st October 2022. Representatives of each economy were formed of 2 members, out of VET/QA agency who is at the same time OS/QS expert and one expert with sector specific knowledge and skills (member of the national QS working group).

	Development of QS was based on regionally developed OS for Agricultural technician of traditional and organic cultivation. Common work on reginal level was organised in WSs, based on prepared materials in cooperation with representatives of all economies and on feedback on developed materials during WSs. Main principals of QS development were agreed and common understanding of regionally developed and agreed Methodology for QS development was ensured. Acknowledging the specifics of each of the economies regarding the development of qualifications, QS which represents a common core was developed at the SEE level. Developed QS for Agricultural technician of traditional and organic cultivation will enable the achievement of the agreed learning outcomes in each of the economies.

Part II -Specific part of qualification

UNITS OF LEARNING OUTCOMES	LEVEL	ECVET	LEARNING OUTCOMES
UNIT 1 Organization/ Management of agricultural production	EQF 4	ECVET **10- 14**	1.1. Carries out planning and organization of own and the work of the workers' team in the domain of work in accordance with the rules of the profession, work assignment and innovations in agriculture production. 1.2. Prepares resources and a workplace for agricultural jobs, in accordance with the planned activities and work assignment. 1.3. Fills in the appropriate work documentation. 1.4. Uses meteorological, agroecological and economic data and trends during planning. 1.5. Creates crop rotation and production plan. *1.5.1. Create a crop rotation plan that includes potatoes in relation to agroecological conditions, and explain the process of its creation.* 1.6. Performs coordination, organisation, supervision and control of all production and processing work processes in agriculture. *1.6.1. Organize the work of a group of workers on planting tuberous vegetables and control the technological process in accordance with production standards.* *• Make an appropriate budget. (The time for the budget is determined by the commission after drawing the specific task. This time is not included in the total time for creating the work task.)* *• As part of the written preparation, specify the necessary technical means and material, describe the plan for creating the work task (order of works and estimated duration), adjustment and control of technological parameters.* *• When creating the task, the organization of the work, the execution of each phase of the technological procedure, record keeping, implementation of hygienic and protective measures and the time of creation are evaluated.* *• The time for creating the work task is 75 minutes from the moment of taking over the technical means and materials, including the records. Completing a task up to 45 minutes earns 10 points, up to 60 minutes 5 points, while completing a task over 60 minutes earns no points. After 75 minutes, the execution of the work task is interrupted.*

<table>
<tr>
<td>UNIT 2
Mechanization, automatization and equipment</td>
<td>EQF 4</td>
<td>ECVET
10- 14</td>
<td>2.1. Selects machines, equipment and work tools for basic and additional work based on the work process.

2.2. Controls the technical correctness and necessary configuration of machines, equipment, tools and their aggregates.

2.3. Implements agrotechnical measures with appropriate machinery and equipment in agricultural production processes

2.4. Uses machines, devices and devices in the livestock production process in an adequate way.
2.4.1. Explain the working principle and demonstrate the work with the robotic system for basic registry, feeding and milking cows.

2.5. Supervises the cleaning, disinfection and maintenance of agricultural machinery, equipment, means, tools and aggregates.

2.6. Applies procedures for storing and guarding machines for the idle period.
2.6.1. Demonstrate the procedure for cleaning, oiling, preserving and storing the attachment, e.g.: tiller, in appropriate conditions for the idle period.</td>
</tr>
<tr>
<td>UNIT 3
Conditions for agricultural production</td>
<td>EQF 4</td>
<td>ECVET
10 - 14</td>
<td>3.1 Uses data from the analysis of agrometeorological and hydrological conditions in order to select types and varieties of agricultural crops for cultivation.
And 3.4.
Determine the necessary agrotechnical measures in order to repair the land for apple planting, based on previously received pedological analysis and analysis of the agrometeorological conditions in the given area.
Determine the method and depth of land cultivation.
Determine the types and norms of fertilization for the basic fertilization of the land before the establishment of perennial crops.
Analyse agrometeorological conditions based on previously received data.
<table>
<tr><td colspan="8">Pedological analysis
Biotechnical Institute of Montenegro</td></tr>
<tr><td>Depth</td><td colspan="2">Ph</td><td>CaCO3</td><td>IDG</td><td>Humus</td><td>P2O5</td><td>K2O</td></tr>
<tr><td>cm</td><td>In H2O</td><td>In 1N KCl-u</td><td>%</td><td>%</td><td>%</td><td>mg/100 g of soil</td><td></td></tr>
<tr><td>0-30</td><td>5,65</td><td>5,08</td><td>0</td><td>0</td><td>7,65</td><td>1</td><td>5,9</td></tr>
<tr><td colspan="7">Soil reaction (pH in 1N KCl): acidic
Total carbonates: very weakly calcareous
Active carbonates (IDG): within normal limits
Hummus: Very humous
Phosphorus accessible: low content</td><td></td></tr>
</table>
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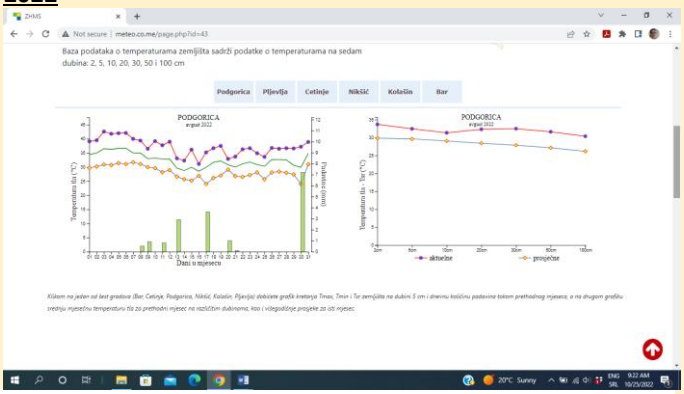
</table>

			Potassium accessible: low content

Agrometeorological conditions for Podgorica for August 2022



Source: Institute for Hydrometeorology and Seismology of Montenegro www.meteo.co.me

3.2 Uses data from the analysis of agrometeorological and hydrological conditions in order to plan livestock production.

3.3. Samples soil and water for chemical analysis.

3.4 Uses the data of the pedological analysis (biological, chemical and mechanical properties) of the soil in order to establish production.

3.5 Applies measures for preventing unfavourable agrometeorological conditions (e.g., rainfall, low temperatures, high temperatures, drought, wind, etc.).
3.5.1. Choose a method that can be used to prevent the negative impact of low temperatures (frost) on chard or lettuce crops. Explain the reason for choice of the method and its application.

3.6. Applies adaptive measures in production due to climate changes.

UNIT 4 Production of annual plants (field crop and vegetable/ agricultural products)	EQF 4	ECVET **20 - 28**	4.1. Performs the process of soil tillage and fertilization. *4.1.1.a Select suitable machines and connecting devices, carry out the adjustment process, according to the requirements related to potatoes or wheat and carry out basic soil cultivation.* *4.1.2. Select the appropriate connecting devices, carry out the adjustment process, according to the requirements related to potatoes or wheat and perform additional soil processing* *4.1.3. Propose basic soil fertilization based on the analysis and requirements of the potatoes or wheat that will be produced.* 4.2. Produces crops' seeds and seedling plant material.

			4.2.1. Select seeds according to the ecological conditions of the cultivation area and biological characteristics of wheat or organic wheat. *4.2.2.a Check the quality characteristics of wheat's seeds as seed material.* *4.2.2.b Check the quality characteristics of potatoes' planting material.* *4.2.2.c Prepares wheat seeds for organic production.* *4.2.2.d Prepare potatoes' planting material for planting.* 4.3. Applies different preparatory actions and cultivation methods for planting seeds and seedlings in fields and protected/controlled environment by usage of appropriate tools for work in accordance with standards and regulations. 4.4. Applies care measures for field crops in line with latest technology of cultivation in field and protected/controlled environment. 4.5. Performs harvesting, packaging and storage of agricultural and vegetable products, in accordance with standards and regulations in agricultural and vegetable production.
UNIT 5 Production of perennials plants (fruit growing and viticulture)	EQF 4	ECVET **15 - 21**	5.1. Applies a procedure for preparing the erecting of plantations in accordance with the standards and technology of production. *5.1.1. Select the suitable fruit for planting based on the data of the physic-chemical characteristics of the soil and to describe the reason for the selection.* *5.1.2. Argue the use of the necessary tools and procedures for setting up the plantation according to the vines e.g. Sheshi i bardhe, zi.* 5.2. Produces fruit and grapes seedling plant material. *5.2.1. Select the type of soil for the production of Starking apple seedlings according to biological requirements.* *5.2.2. Implement the most appropriate technique for the production of vine seedlings according to pedo-climatic conditions.* 5.3. Applies a procedure for raising plantations in accordance with standards and technology of production. 5.4. Implements measures for the maintenance of perennial plants until the period of fruit/grape bearing. 5.5. Applies agrotechnical measures for the cultivation of perennial plants during the period of fruit/grape bearing. 5.6. Organizes the harvesting, collection, transportation and storage of fruits and grapes.

UNIT 6 Livestock production and animal care	EQF 4	ECVET **15 - 21**	6.1. Prepares conditions for raising domestic animals according to breed and category. *6.1.1. Prepare appropriate spatial and ambient conditions for rearing dairy cows/sheep/goat/chickens.* 6.2. Ensures feeding of domestic animals according to breed and category. *6.2.1. Prepare an appropriate plan for feeding the dairy cow during the dry period* *6.2.2. Prepare food for rams by the flushing method and explain the applied operations.* *6.2.3. Improve pastures for feeding goats by seeding additional culture/Make plan for Improves pastures for feeding goats by seeding additional culture.* *6.2.3. Prepare a broiler feeding plan and elaborate made plan.* 6.3. Applies measures for humane and proper breeding and handling of domestic animals. *6.3.1. Arrange the broilers in categories related to age and weight.* 6.4. Applies prophylactic and zootechnical measures. *6.4.1. Demonstrate sheep/goat shearing.* 6.5. Applies domestic animal breeding technologies according to the type and purpose of production. *6.5.1. Apply milking of cows with manual milking machine.* 6.6. Implements adequate activities for collecting, storing and keeping animal products. *6.6.1. Determine and apply the conditions for milk storage till selling.*
UNIT 7 Processing and storage of primary food products (plant and livestock products)	EQF 4	ECVET **10 – 14**	7.1. Prepares raw materials, accessories, equipment and devices for processing in accordance with prescribed standards. 7.2. Performs grain processing (e.g. flour production). 7.3. Performs simple procedures of heat treatment and canning of fruits and vegetables in accordance with the standards for obtaining products (e.g., jams, brandies, canned fruits and vegetables, etc.). *7.3.1. Select and argue the most suitable grape variety and perform the preliminary processing for the production of 5 litres of grape brandy.* *7.3.2. Explain the characteristics and sort of adequate equipment and explain the technological process for the production of 20-degree brandy.* 7.4. Produces dried vegetables, fruits and squeezed juices.

			7.5. Implements a technological process for the simple production of dairy products (e.g., cheese, yogurt, kefir, cottage cheese, cream, etc.). *7.5.1. Explain the required qualities of milk, based on previously received analysis, for the production of Sharri organic cheese.* *7.5.2. Explain the technological processes of organic cheese production and calculate how much milk is needed to produce 5 kg of organic cheese.* *7.5.4. Demonstrate first phase of the technological process for the production of 5 kg of organic cheese from Sharri.* 7.6. Performs the procedures of packaging, marking, storage of finished products and non-products in adequate ecological packaging.
UNIT 8 Business Communication and Entrepreneurship in Agriculture	EQF 4	ECVET **7 - 8**	8.1. Cooperates ethically and professionally with superiors, colleagues and third parties, individually and in teams, applying appropriate communication techniques and successfully resolving conflicts. 8.2. Applies IT technologies in communication. *8.2.1. Prepare commodity and monetary electronic documents and accompanying business letter for the offer of agricultural production products (based on set parameters using application software).* 8.3. Creates a simple business plan for the production and sale of agricultural products (continuous market analysis, forecasting market trends, cost accounting, product price calculation, procurement of necessary materials and resources, etc.). *8.3.1. Create a simple form of business plan using the model below for your own agricultural household where you will process plums from your own production and make jam that you will market using internet sales and social networks. Base the budget on the annual production of 2,400 jars/1,000g of jam if the total production costs are 220,000 financial units, and the market price of jam is 500 financial units/jar.* *BUSINESS PLAN MODEL* ***Basic information about the company*** ***Company*** *Company name (think of a name):* ***Business idea*** *What does the company do?* ***Service description*** *A brief description of the service/product and how to use it*

			Target group (clients) *Who is targeted with the service/product? Who are your most important customers/ service users? What needs does the service/product meet?* ***Feasibility of the idea*** ***Finance*** *What expenses does the company incur in its operations (separate especially investments/investment expenses from regular business expenses); what are the expected revenues from the sale of your products/billing for services. (It is preferable that you quantify the costs/revenues, but if you are unable to do so under the circumstances, just list your ideas)* ***Technology*** *Does your activity/product require the use of certain technologies, equipment, objects, tools...? How do you plan to provide them?* ***Marketing and sales*** *List the basic elements of the marketing plan and how you intend to sell your product/service (determine distribution channels, price, product/service promotion method).* ***USP (Unique Selling Point)*** *How does your product/service stand out from others on the market?* *SWOT analysis* ***SWOT matrix*** *INTERNAL FACTORS* *Positive* / *Strengthens* / *Weaknesses* / *Negative* *Opportunities* / *Threats* *EXTERNAL FACTORS* *8.3.2. Analyse agricultural product market data by applying adequate method.* 8.4. Prepares promotional materials and promotes the offer/product (in print and electronic media, at fairs, etc.)by usage of different marketing channels. 8.5. Successfully sells products on the market in accordance with the prepared business plan and valid regulations. *8.5.1.Prepare offer (description of product, characteristic, price etc,) for selling plum jam through e-store by usage of specific application software.*
UNIT 9		ECVET	9.1. implements safety measures at work using adequate protective means and equipment

Standards, Environmental protection and work safety		**2- 4**	9.2. Identifies hazards in the work process in order to reduce risks/prevent the occurrence of hazards. *9.2.1. Select and explain choice of the most suitable protection tools and equipment that should be used in phytosanitary treatment of vines.* *9.2.2. Demonstrate proper usage of personal protective equipment during honey harvesting in beehives.* 9.3. Correctly applies appropriate instructions while using the tools, work equipment and harmful products (pesticides). 9.4. Enforces environmental protection rules and ecological standards. *9.4.1. Carry out the procedures for the management of the waste of livestock stables.* *9.4.2. Select the plants for associated planting/ associated plants which will ensure reduced need for pesticide. Explain your choice.* *9.4.3. Select proper culture for regeneration of soil after conventional production as preparation for organic production. Explain your choice.* 9.5. Manages waste, by-products and chemicals from the work process in accordance with environmental protection regulations. 9.6. Applies standards in agricultural production (GAP, good hygienic practice, animal welfare, organic production, traditional production, HACCP, etc.). 9.7. Performs agricultural operations by using energy and materials in accordance with the principles of sustainable development and environmental protection.

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