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The FarmForward Project: Sustainable and Transformative Strategies for Climate-Resilient Agriculture in VET

Project number: 2024-1-LT01-KA220-VET-000248582

WP4: Expert Insights Series & Policy Recommendations

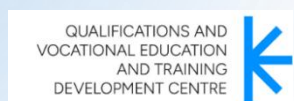
Development of the Policy Recommendations Collection

Transnational report

Edited by:

**Polish Farm Advisory and Training Center
Natalia Truszkowska**

Project Partners



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1. Introduction

This Policy Recommendations Collection has been developed within the framework of the Farm Forward Project – Sustainable and Transformative Strategies for Climate-Resilient Agriculture in VET (Project No. 2024-1-LT01-KA220-VET-000248582), implemented under the Erasmus+ Programme.

The collection is the result of a collaborative effort involving all project partners, coordinated by the Polish Farm Advisory and Training Centre (PFA). Between May and June 2026, partners from all participating countries gathered, analysed, and synthesised evidence from project activities to prepare national policy input reports. The process officially began with the partners' coordination meeting on 21 May 2026, followed by the submission of national contributions by 18 June 2026.

The purpose of collecting these policy recommendations was to identify practical and evidence-based measures that can strengthen vocational education and training (VET) systems and support the transition towards more sustainable and climate-resilient agriculture. The recommendations draw upon the project's needs assessment, training development and piloting activities, stakeholder feedback, and expert insights.

The collection reflects the experiences and perspectives of farmers, vocational education and training providers, trainers, agricultural advisors, and project experts. By combining national contributions into a single European document, the project aims to provide policymakers and educational stakeholders with actionable recommendations that address existing skills gaps, promote innovative learning approaches, and contribute to the development of resilient agricultural education policies across Europe.

2. Executive summary

This consolidated Policy Recommendation Collection brings together twelve policy recommendations submitted by Farm Forward partners from Lithuania, Poland, Slovenia, Greece and Bulgaria. The recommendations address the same strategic challenge from different institutional and national perspectives: how to make agricultural vocational education and training a stronger driver of climate-resilient farming, green transition, generational renewal and rural innovation.

The partner inputs show a clear consensus that climate-resilient agriculture cannot be treated as an optional or isolated topic. It needs to be embedded into VET curricula, teacher professional development, practical field learning, advisory systems, CAP-related support pathways, quality assurance mechanisms and lifelong-learning instruments for active farmers and rural professionals.

Across the six national inputs, several priorities recur: modernising curricula; strengthening teachers' digital and climate competences; linking VET with demonstration farms, AKIS and industry; creating micro-credentials and short learning pathways; supporting graduates and new entrants; improving quality assurance; and preparing VET systems for emerging fields such as agrivoltaics.

Main consolidated messages

Climate-resilient farming should become a core, structured element of agricultural VET, not an occasional topic delivered through isolated workshops or projects.

Teachers and trainers require regular CPD in climate-smart agriculture, digital tools and practice-oriented pedagogy, with recognition through certificates or micro-credentials.

Practical field learning is essential. Demonstration farms, advisory services, school farms and industry partners should become permanent learning infrastructure for VET.

Short, stackable micro-credentials can support both teachers and active farmers, making lifelong learning realistic for people who cannot participate in long formal programmes.

Generational renewal requires a coordinated pathway linking VET, CAP support, mentoring, business planning and advisory services.

Agrivoltaics represents a strategic emerging field where agriculture, energy, land-use regulation and VET skills policy need to be connected.

Quality assurance and industry collaboration are necessary to ensure that VET programmes remain relevant, trusted and aligned with labour-market and climate-transition needs.

3. Methodology and scope

This report was prepared through qualitative synthesis of the partner national policy input forms submitted under WP4. Each partner input was reviewed according to a common structure: title, description, problem addressed, proposed solution, overview of implementation, target group and expected impact. The report does not replace the national input forms; instead, it consolidates them into one coherent policy collection that can be used for discussion with VET authorities, agricultural policymakers, advisory services, CAP stakeholders and project dissemination audiences.

The synthesis followed three steps. First, individual recommendations were extracted and summarised while preserving their original policy intention. Second, recurring themes were identified across countries and partner profiles. Third, the recommendations were reorganised into a consolidated collection with a shared implementation logic and monitoring framework.

Number of input forms reviewed: 6.

Number of substantive policy recommendations consolidated: 12.

Countries represented: Lithuania, Poland, Slovenia, Greece and Bulgaria.

Policy levels covered: national, regional, institutional and EU-level action.

Main policy domains: agricultural VET, climate-resilient farming, CAP and AKIS, micro-credentials, agrivoltaics, quality assurance and industry collaboration.

4. Partner inputs overview

Country	Partner organisation	Recommendations
Lithuania	Qualifications and Vocational Education and Training Development Centre	2
Poland	Polish Farm Advisory and Training Center Natalia Truskowska	2
Slovenia	Chamber of Agriculture and Forestry of Slovenia - Institute of Agriculture and Forestry Maribor	2
Greece	Social Nebula PC	2
Bulgaria	Agricultural University Plovdiv	2
Greece	Smart Agro Hub	2

Overview of submitted recommendations

ID	Origin	Recommendation title	Primary policy focus
R1	Lithuania	Strengthening Continuous Professional Development and Digital Competences for Agricultural VET Teachers	Teacher CPD, digital competence, climate-smart pedagogy
R2	Lithuania	Supporting VET Graduates in Climate-Resilient Farming	Transition from VET to farming, CAP support, mentoring, micro-credentials
R3	Poland	Establishing a Dedicated Legal Framework for Agrivoltaics in Poland	Agrivoltaics regulation, dual land use, food production and renewable energy
R4	Poland	Strengthening Agrivoltaic Skills and Training Across Europe through VET Integration	AgriPV skills, cross-disciplinary VET, green transition
R5	Slovenia	Systematic Integration of Climate-Resilient Farming into Agricultural VET Curricula	Curriculum reform, dedicated climate-resilient farming subject
R6	Slovenia	National Network of Demonstration Farms and VET Field-Learning Sites for Climate-Resilient Agriculture	Demonstration farms, practical learning, advisory-VET cooperation
R7	Greece	An EU Framework of Stackable Micro-Credentials in Climate-Resilient Agriculture	EU micro-credentials, lifelong learning, active farmers and rural professionals

		for the Continuous Upskilling of Active Farmers and Rural Professionals	
R8	Greece	A Climate-Smart Entrepreneurship Pathway for New Entrants to EU Agriculture, Linking VET, CAP Young Farmer Support and Farm Advisory Services	New entrants, young farmers, CAP, AKIS mentoring, business planning
R9	Bulgaria	Strengthening Industry Collaboration in Vocational Education and Training (VET)	VET-industry partnerships, apprenticeships, skills alignment
R10	Bulgaria	Enhancing Quality Assurance in Vocational Education and Training (VET)	Quality standards, curriculum modernisation, audits and feedback
R11	Greece	Strengthening Practice Based Climate-Resilient Agriculture in Greek VET through Demonstration Farms and Digital Tools	Demonstration hubs, teacher CPD, digital climate tools, curriculum-embedded practice modules
R12	Greece	A Guided Transition Pathway from Agricultural VET to Climate-Resilient Farming Careers in Greece	Final-year career guidance, mentoring, post-graduation support, micro-credentials

5. Cross-cutting policy findings

The partner inputs are diverse, but they converge around a common proposition: the transition towards climate-resilient agriculture requires a VET ecosystem, not only new teaching materials. Effective change needs curriculum reform, teacher capacity, practical field sites, links with advisory services and CAP support, formal recognition of short learning, quality assurance and cooperation with employers and technology providers.

Curriculum modernisation and climate-resilient farming as core VET content

Partners emphasise that climate-resilient farming should be embedded in programmes through clear learning outcomes and practice-oriented content. This includes soil health, water management, resilient varieties, efficient fertiliser use, livestock adaptation, digital tools, farm economics, renewable energy and business planning. Relevant recommendations: R4, R5, R8, R11, R12.

Teacher professional development, digital competence and quality assurance

Teacher competence is a prerequisite for curriculum change. Inputs point to the need for annual CPD, digital skills, innovative pedagogy, assessment tools, institutional self-

evaluation and quality standards that reward real application of new methods. Relevant recommendations: R1, R10, R11.

Practical learning through demonstration farms, mentoring and industry collaboration

Several recommendations call for permanent practical learning infrastructure. Demonstration farms, school estates, private farms, advisory sites, apprenticeships, internships and employer partnerships should connect learning with the realities of farm management and technology adoption. Relevant recommendations: R2, R6, R8, R9, R11, R12.

Lifelong learning and stackable micro-credentials

Micro-credentials appear as a flexible instrument for teachers, graduates, active farmers and rural professionals. They can make short training visible, recognised and stackable, while allowing learners to build competences gradually. Relevant recommendations: R1, R2, R4, R7, R11, R12.

Youth entry, generational renewal and post-graduation support

The transition from VET into farming is treated as a policy gap. Partners propose linking education with CAP instruments, start-up aid, eco-schemes, advisory services, mentoring, demonstration farms, peer networks and business planning. Relevant recommendations: R2, R8, R12.

Agrivoltaics as an emerging climate-resilient and renewable-energy skills field

Agrivoltaics is presented as an emerging strategic field requiring both legal clarity and new skills. The recommendations link land-use regulation, renewable energy, agricultural production, VET curricula and farmer/advisor competence. Relevant recommendations: R3, R4.

6. Consolidated policy recommendation collection

This section presents the twelve consolidated recommendations. Each recommendation includes a concise problem statement, proposed policy solution, implementation logic, target groups and expected impact. The wording has been harmonised to create a coherent collection while preserving the core content submitted by partners.

R1. Strengthening Continuous Professional Development and Digital Competences for Agricultural VET Teachers

Origin: Lithuania - Qualifications and Vocational Education and Training Development Centre. **Primary focus:** Teacher CPD, digital competence, climate-smart pedagogy.

Problem addressed: Agricultural VET teachers need structured opportunities to update climate-resilient farming knowledge and digital teaching competences. The Lithuanian input highlights an experienced teaching workforce, but also reports digital competence gaps and limited systematic cooperation with research, advisory services and demonstration farms.

Proposed policy solution: Establish an annual CPD framework for agricultural VET teachers, recognised through certificates or micro-credentials, combining climate-resilient farming, precision agriculture, GIS, satellite and sensor data, farm-management software, digital simulations and innovative pedagogy.

Implementation approach: Define annual CPD expectations; prepare personalised learning plans; provide blended courses, webinars, mentoring and field visits; connect CPD with AKIS, advisory services, research institutions, universities, demonstration farms and agricultural businesses; embed participation and application of new knowledge in institutional quality assurance.

Target groups: Agricultural VET teachers and trainers, VET institutions, learners, school leaders, education authorities, advisory services, demonstration farms and research actors.

Expected impact: More up-to-date teaching, higher teacher confidence in digital tools, stronger links between VET and practice, improved learner preparedness for climate-resilient agriculture, and stronger quality assurance in agricultural VET.

R2. Supporting VET Graduates in Climate-Resilient Farming

Origin: Lithuania - Qualifications and Vocational Education and Training Development Centre. **Primary focus:** Transition from VET to farming, CAP support, mentoring, micro-credentials.

Problem addressed: Many learners are interested in climate-resilient farming but remain uncertain about careers in agriculture. Barriers include farm ageing, access to finance, limited confidence in applying climate-smart practices and weak post-graduation support.

Proposed policy solution: Create a structured support pathway for VET graduates entering agriculture, linking career guidance, farm advisory services, demonstration farms, peer-learning networks, CAP support, start-up and investment aid, eco-schemes and short lifelong-learning opportunities.

Implementation approach: Introduce final-semester career preparation; provide every graduate with a clear roadmap of available support; connect graduates with advisors; expand micro-credentials in climate adaptation, precision agriculture, water management, biodiversity and digital farming; strengthen links with employment services, farmer organisations and businesses.

Target groups: VET students and graduates, VET schools, agricultural advisory services, demonstration-farm networks, active farmers, cooperatives, employment services, paying agencies and policy authorities.

Expected impact: More graduates entering and remaining in the agricultural sector, better use of existing public support, faster uptake of climate-resilient practices after graduation, and stronger lifelong-learning pathways for young agricultural professionals.

R3. Establishing a Dedicated Legal Framework for Agrivoltaics in Poland

Origin: Poland - Polish Farm Advisory and Training Center Natalia Truskowska.

Primary focus: Agrivoltaics regulation, dual land use, food production and renewable energy.

Problem addressed: Agrivoltaics in Poland lacks a coherent dedicated legal framework. Farmers and investors face administrative, economic and regulatory uncertainty, and existing rules often fail to distinguish dual agricultural-energy use from conventional photovoltaic installations.

Proposed policy solution: Develop a comprehensive AgriPV legal framework recognising dual use of agricultural land, protecting arable soil and primary agricultural functions, defining technological and agricultural criteria, and offering a predictable path for permitting, taxation, subsidies and monitoring.

Implementation approach: Adopt statutory definitions of agrivoltaic systems; distinguish AgriPV from ground-mounted solar farms; define agricultural production requirements; introduce safeguards for high-quality land; prepare permitting procedures and eligibility criteria for public support; establish monitoring of agricultural output and environmental effects.

Target groups: National policymakers, ministries, local authorities, farmers, landowners, renewable-energy investors, agricultural advisors, rural communities and VET institutions preparing future AgriPV professionals.

Expected impact: Improved legal certainty, stronger farmer participation in renewable energy, better protection of agricultural land, increased climate resilience and a transferable Central and Eastern European model for responsible AgriPV deployment.

R4. Strengthening Agrivoltaic Skills and Training Across Europe through VET Integration

Origin: Poland - Polish Farm Advisory and Training Center Natalia Truskowska.

Primary focus: AgriPV skills, cross-disciplinary VET, green transition.

Problem addressed: Agrivoltaic technology is developing faster than formal agricultural education. VET systems often separate renewable-energy engineering from agricultural practice, leaving farmers, technicians and advisors without the cross-disciplinary skills required for safe and productive AgriPV systems.

Proposed policy solution: Modernise VET frameworks by integrating agrivoltaics into agricultural and renewable-energy curricula through modular, practice-oriented training combining agronomy, environmental science, farm economics, photovoltaics, maintenance, safety, permitting and business planning.

Implementation approach: Develop common European learning outcomes; create modular curricula and micro-credentials; train VET teachers and advisors; use demonstration farms and pilot installations; cooperate with energy companies, chambers, agricultural organisations and research institutions; support cross-border exchange of learning materials and good practice.

Target groups: VET learners, farmers, agricultural technicians, energy installers, advisors, teachers, renewable-energy companies, agricultural schools, universities and policymakers working on green skills.

Expected impact: A skilled AgriPV workforce, higher farmer confidence in dual-use systems, more coherent green-skills provision, stronger rural employment opportunities and faster adoption of renewable energy that remains compatible with agricultural production.

R5. Systematic Integration of Climate-Resilient Farming into Agricultural VET Curricula

Origin: Slovenia - Chamber of Agriculture and Forestry of Slovenia - Institute of Agriculture and Forestry Maribor. **Primary focus:** Curriculum reform, dedicated climate-resilient farming subject.

Problem addressed: Climate-resilient farming is not yet sufficiently systematic in agricultural VET. Learners need structured, practice-oriented education covering soil health, water, drought and frost adaptation, fertiliser efficiency, resilient varieties, livestock, digital tools and economics of adaptation.

Proposed policy solution: Introduce a dedicated subject or structured curriculum component on climate-resilient farming as a core part of agricultural VET, supported by teaching materials, field-learning activities and peer-learning for educators.

Implementation approach: Map existing curricula; define national learning outcomes; prepare practical teaching materials and assessment methods; train teachers; integrate farm visits, demonstration activities and real case studies; gradually mainstream the subject across relevant agricultural programmes.

Target groups: Agricultural VET students, VET teachers, curriculum authorities, school management, advisory services, demonstration farms and national education and agriculture institutions.

Expected impact: More coherent and nationally relevant climate-resilient farming education, stronger learner preparedness, better teacher capacity and improved alignment between agricultural VET and climate adaptation needs.

R6. National Network of Demonstration Farms and VET Field-Learning Sites for Climate-Resilient Agriculture

Origin: Slovenia - Chamber of Agriculture and Forestry of Slovenia - Institute of Agriculture and Forestry Maribor. **Primary focus:** Demonstration farms, practical learning, advisory-VET cooperation.

Problem addressed: Practical experience is one of the weakest elements in agricultural education and training. Learners and educators need more opportunities to test climate-resilient practices in real farming contexts and to learn from farmers and advisors.

Proposed policy solution: Establish a coordinated national demonstration network connecting school estates, research farms, advisory-service sites and selected private farms that apply climate-resilient practices and can host structured field learning.

Implementation approach: Select farms using transparent criteria; prepare demonstration protocols and safety/learning guidelines; train host farmers and teachers; link field visits with curriculum outcomes; organise regular demonstration days, student assignments and advisor-led sessions; evaluate learning and on-farm adoption.

Target groups: VET learners, educators, farmers, advisory services, research institutions, chambers, demonstration farms, school farms and local agricultural communities.

Expected impact: More applied learning, stronger understanding of soil, water, biodiversity and digital tools, improved teacher confidence, better VET-AKIS cooperation and faster diffusion of climate-resilient practices.

R7. An EU Framework of Stackable Micro-Credentials in Climate-Resilient Agriculture for the Continuous Upskilling of Active Farmers and Rural Professionals

Origin: Greece / EU level - Social Nebula PC. **Primary focus:** EU micro-credentials, lifelong learning, active farmers and rural professionals.

Problem addressed: The farmers who must implement adaptation in the coming decade are already active in the sector and cannot easily leave farms for long formal programmes. Training remains fragmented across short courses, advisory events and project outputs, often without recognised certification.

Proposed policy solution: Operationalise a coherent EU-wide framework of short, stackable and mutually recognised micro-credentials in climate-resilient agriculture, covering soil health, water-smart irrigation, drought and frost adaptation, precision agriculture, climate-smart livestock, risk and insurance literacy and other focused competences.

Implementation approach: Develop a European catalogue of learning outcomes; align micro-credentials with EQF, Europass and national qualification systems; accredit providers; combine online, blended and demonstration-farm learning; recognise prior learning; fund participation through CAP, skills programmes and advisory budgets; monitor completion and on-farm use.

Target groups: Active farmers, farm workers, advisors, rural professionals, VET providers, AKIS actors, agricultural chambers, ministries, managing authorities and EU-level policy actors.

Expected impact: Accessible lifelong learning, better comparability of short agricultural training, stronger uptake of climate-resilient practices, more measurable AKIS investment and a practical route for upskilling the existing agricultural workforce.

R8. A Climate-Smart Entrepreneurship Pathway for New Entrants to EU Agriculture, Linking VET, CAP Young Farmer Support and Farm Advisory Services

Origin: Greece / EU level - Social Nebula PC. **Primary focus:** New entrants, young farmers, CAP, AKIS mentoring, business planning.

Problem addressed: Agriculture faces a demographic and climate challenge. Young and new farmers need support that combines skills, finance, climate-smart business planning and structured mentoring. Existing CAP young farmer support is often insufficiently linked to VET and advisory services.

Proposed policy solution: Create an EU-recognised Climate-Smart Entrepreneurship Pathway combining a VET module on climate-resilient farming and business planning, linkage with CAP young farmer support, at least 12 months of AKIS mentoring and a Climate-Smart Business Plan.

Implementation approach: Adopt an EU reference curriculum; require or incentivise completion of the module for full access to young farmer support; match beneficiaries with advisors and demonstration farms; include gender, succession and land-access support; pilot from 2028 and scale through post-2027 CAP implementation; monitor retention and adoption of resilient practices.

Target groups: EU and national policymakers, young farmers, new entrants, women, successors, VET students, agricultural VET providers, advisors, demonstration farms, cooperatives, paying agencies and CAP managing authorities.

Expected impact: Higher entry and retention of young farmers, climate-coherent use of public funds, stronger VET-CAP-AKIS links, fairer access for non-traditional entrants and measurable adoption of resilient practices on newly established farms.

R9. Strengthening Industry Collaboration in Vocational Education and Training (VET)

Origin: Bulgaria - Agricultural University Plovdiv. **Primary focus:** VET-industry partnerships, apprenticeships, skills alignment.

Problem addressed: VET programmes may not sufficiently reflect employer demand, contributing to skills mismatch, weak employability and limited practical exposure for learners. Collaboration between education and industry remains insufficiently structured.

Proposed policy solution: Establish a National Industry Collaboration Framework bringing together government, VET providers and industry stakeholders to align curricula with labour-market needs, expand apprenticeships and internships, and provide educators with ongoing professional development.

Implementation approach: Create a national task force; conduct regular industry needs assessments; sign partnership agreements between VET providers and businesses; pilot collaborative training models in selected regions; establish monitoring and evaluation metrics.

Target groups: Policymakers, VET providers, employers, industry associations, educators, learners and regional development stakeholders.

Expected impact: Reduced skills mismatch, higher employment rates, stronger industry relationships, more practical learning and improved attractiveness of VET pathways.

R10. Enhancing Quality Assurance in Vocational Education and Training (VET)

Origin: Bulgaria - Agricultural University Plovdiv. **Primary focus:** Quality standards, curriculum modernisation, audits and feedback.

Problem addressed: VET quality can be weakened by outdated curricula, insufficiently modern teaching methods and weak alignment with industry standards, leading to poorer learner outcomes and reduced employability.

Proposed policy solution: Establish a comprehensive Quality Assurance Framework for VET, including standardised assessment tools, curriculum modernisation, institutional self-evaluation, employer and student feedback, and cooperation with accreditation bodies.

Implementation approach: Develop VET quality standards with education and industry experts; train educators in innovative teaching and curriculum design; conduct regular audits and evaluations; establish feedback mechanisms for students, employers and educators; use evidence to continuously improve programmes.

Target groups: Policymakers, VET providers, educational experts, accreditation bodies, educators, students and employers.

Expected impact: Improved learning outcomes, stronger reputation of VET, better employability, more trust from employers and a culture of continuous quality improvement.

R11. Strengthening Practice Based Climate-Resilient Agriculture in Greek VET through Demonstration Farms and Digital Tools

Origin: Greece - Smart Agro Hub. Primary focus: Demonstration hubs, teacher CPD, digital climate tools and curriculum-embedded practical modules.

Problem addressed: Greek agricultural VET teachers and learners need more systematic exposure to climate-resilient practices, locally relevant teaching materials, modern digital tools and field-based learning. The Smart Agro Hub input reports that provision remains uneven, often theoretical and weakly connected to demonstration farms, research, advisory services and local Mediterranean climate risks such as drought, heatwaves, water scarcity and emerging pests.

Proposed policy solution: Establish a national initiative called Climate-Resilient Agriculture Demonstration Hubs, jointly led by education and agriculture authorities. The initiative should connect EPAL, IEK and other agricultural VET providers with demonstration farms, research stations, cooperative fields and innovative private farms; equip partner schools with basic digital tools such as weather stations, soil moisture probes and access to satellite and climate-data platforms; and embed short practice modules on topics such as water-smart irrigation, soil health, carbon farming, precision agriculture, agroforestry and biodiversity.

Implementation approach: Begin with a joint steering group and 5-7 pilot regions representing different Greek agro-climatic zones. Co-design curriculum-embedded modules and field activities, prepare teachers through CPD or micro-credentials, develop Greek-language lesson plans, worksheets, data sets and videos, and then gradually expand the Demonstration Hub network to further regions while monitoring participation, field visits, teacher CPD, digital-tool use and learner confidence.

Target groups: Agricultural VET teachers and learners in Greece, EPAL, IEK and specialised agricultural schools, demonstration farms, cooperatives, advisory

services, research organisations, local authorities and national or regional policymakers in education and agriculture.

Expected impact: Learners gain more hands-on experience with climate-resilient practices and technologies; educators receive updated, context-specific materials and digital tools; cooperation between VET, farms, cooperatives, research and advisory actors improves; and Greek agricultural VET graduates become better prepared to design and implement adaptation strategies on farms.

R12. A Guided Transition Pathway from Agricultural VET to Climate-Resilient Farming Careers in Greece

Origin: Greece - Smart Agro Hub. Primary focus: Final-year career guidance, mentoring, post-graduation support and micro-credentials for climate-resilient farming careers.

Problem addressed: Many Greek agricultural VET learners are interested in climate-resilient farming but remain uncertain about entering the sector. The Smart Agro Hub input highlights weak structured career guidance, limited mentoring, insufficient exposure to farms and modern tools, gaps in climate-related teaching, and poor linkage between VET, CAP support, employment services, advisory systems and early-career upskilling.

Proposed policy solution: Develop a Climate-Resilient Agriculture Transition Pathway linking the final phase of agricultural VET with the first years after graduation. The pathway should include a compulsory final-year module on climate-resilient careers, support instruments and basic climate-smart farm or business planning; a voluntary 12-month mentoring and peer-learning scheme with farmers, advisors, cooperative managers and rural professionals; and flexible micro-credentials in high-demand skills

such as precision agriculture, drought-resilient crops, water management, soil health, renewable energy and climate-risk management.

Implementation approach: Establish a national working group involving VET providers, the CAP Managing Authority, advisory services, cooperatives, youth organisations and learner representatives. Pilot the final-year module in selected EPAL and IEK, launch mentoring in 2-3 agricultural regions, test 2-3 micro-credentials, and then integrate the module into national agricultural VET curricula, expand mentoring to additional regions and seek recognition of micro-credentials within national qualification or sectoral frameworks.

Target groups: Final-year agricultural VET students, recent graduates, young farmers, rural employees, agricultural VET providers, farm advisors, cooperatives, demonstration farms, rural enterprises and public authorities responsible for CAP support, youth employment and VET curricula.

Expected impact: More graduates choose agricultural and rural careers, early-career farmers and rural professionals receive clearer information and mentoring, climate-resilient practices learned during VET are translated into real farm behaviour, and flexible micro-credentials support continuous skills development in response to changing climate and technology conditions.

7. Implementation roadmap

The recommendations can be implemented progressively. Some actions can be launched at institutional level by VET providers and advisory services, while others require national or EU-level policy decisions. A phased roadmap would help partners and policymakers distinguish immediate improvements from structural reforms.

Phase	Timeframe	Priority actions	Relevant recommendations
Phase 1: Preparation and alignment	0-12 months	Map existing curricula, CPD offers, advisory services, demonstration farms, industry partnerships and CAP-related support. Establish working groups involving ministries, VET providers, AKIS actors, chambers, employers and farmer organisations.	R1-R12
Phase 2: Pilot implementation	12-24 months	Pilot CPD modules, micro-credentials, demonstration-farm learning, graduate support pathways, industry collaboration models, quality-assurance tools and initial AgriPV training content in selected regions or institutions.	R1, R2, R4, R5, R6, R7, R9, R10, R11, R12
Phase 3: Policy integration	24-48 months	Integrate successful pilots into national VET frameworks, CAP Strategic Plan implementation, quality-assurance systems, accreditation procedures and teacher professional-development requirements.	R1, R2, R5, R6, R7, R8, R9, R10, R11, R12
Phase 4: Scaling and EU coordination	48+ months	Scale recognised micro-credentials, climate-smart entrepreneurship pathways, AgriPV legal and training frameworks, and cross-border exchange of curricula, standards and demonstration models.	R3, R4, R7, R8, R11, R12

8. Monitoring and evaluation framework

A common monitoring framework would help partners and policymakers assess whether the recommendations lead to real improvements in VET quality, learner outcomes and climate-resilient farm practice. The indicators below can be adapted to national conditions.

Policy area	Example indicators	Possible data sources
Curriculum integration	Number of VET programmes including climate-resilient farming learning outcomes; number of learners completing modules; share of practical assessment tasks linked to real farms.	Curriculum documentation, school records, learner assessment results.
Teacher CPD and digital skills	Number and share of teachers completing annual CPD; number of micro-credentials issued; teacher confidence in digital and climate-smart tools.	CPD registers, micro-credential platforms, teacher surveys.
Demonstration and field learning	Number of active demonstration farms or field-learning sites; number of visits, assignments and demonstration days; learner satisfaction and competence gains.	Demonstration network records, VET provider reports, learner surveys.
Graduate and new entrant support	Number of graduates receiving advisory guidance; number accessing CAP support, eco-schemes or mentoring; retention in agricultural employment or farm management.	VET alumni tracking, advisory-service records, CAP/paying agency data.
Micro-credentials and lifelong learning	Number of short courses accredited; completions by farmers, advisors and rural professionals; evidence of practice adoption after training.	Provider reports, Europass or national credential systems, farmer follow-up surveys.
Industry collaboration and quality assurance	Number of partnership agreements; number of apprenticeships and internships; employer satisfaction; audit findings and improvement actions.	VET QA reports, employer surveys, apprenticeship databases.

Agrivoltaics	Legal framework milestones; number of trained professionals; number of demonstration or pilot AgriPV sites; evidence of agricultural production maintained under dual-use systems.	Policy documents, training records, pilot monitoring data.
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9. Conclusions

The Farm Forward partner inputs provide a coherent policy agenda for strengthening agricultural VET in the context of climate resilience. They show that reform cannot be limited to adding new topics to curricula. It must connect education with farm practice, advisory services, CAP support, labour-market needs, teacher development, quality assurance and emerging technologies.

The strongest common conclusion is that agricultural VET should become an active bridge between knowledge and implementation. VET institutions can prepare learners, but they also need structured cooperation with farmers, demonstration sites, employers, research bodies, advisory services and policy authorities. This is particularly important for climate-resilient farming, where learners and active farmers need to test practices in real conditions and understand both technical and economic dimensions.

The collection also highlights two strategic transitions. First, the generational transition: young people and new entrants need guidance, finance, mentoring and climate-smart business planning to make farming a viable future. Second, the skills transition: teachers, farmers and advisors need continuous, recognised and flexible upskilling to keep pace with digitalisation, climate risks and new fields such as agrivoltaics.

Taken together, the ten recommendations offer a practical and policy-relevant package for local, national and European stakeholders. They can be used as a basis for policy dialogue, expert panels, dissemination activities and future cooperation between VET, agriculture and rural-development actors.

Annexes - National Policy Input Report

1. National Policy Input Report from Lithuania

Partner Information

Partner Organisation: Qualifications and Vocational Education and Training Development Centre

Policy Recommendation 1

1. Title

Strengthening Continuous Professional Development and Digital Competences for Agricultural VET Teachers

2. Description

Agriculture is evolving rapidly in response to climate change, technological innovation, and new environmental requirements. To prepare learners for this changing reality, VET teachers need regular opportunities to update both their technical knowledge and their digital skills.

This recommendation proposes the establishment of a structured Continuous Professional Development (CPD) programme for agricultural VET teachers built around two complementary areas. First, VET teachers should regularly update their knowledge of climate-resilient and climate-smart farming through training developed in cooperation with researchers, agricultural advisers, demonstration farms, and experienced farmers. This would ensure that teaching reflects the latest farming

practices, policy developments, and technological innovations. Second, VET teachers should continuously strengthen their digital competences to confidently integrate modern technologies into teaching and learning. Professional development should follow the principles of the European Framework for the Digital Competence of Educators (European Commission, 2017).

Rather than relying on isolated workshops, the programme should establish a regular cycle of professional learning throughout a teacher's career. Annual CPD activities, recognised through nationally recognised certificates or micro-credentials, would encourage lifelong learning while ensuring that educators remain confident in using digital technologies such as precision farming applications, satellite and sensor data, farm management software, digital simulations, and online learning resources. This way teachers will be better equipped to prepare future farmers for a rapidly changing agricultural sector and to support the transition towards more resilient, innovative, and sustainable farming systems.

3. Problem Addressed

Agricultural VET teachers play a key role in preparing future farmers for the challenges of climate change. However, as agriculture becomes increasingly digital and technology-driven, teachers also need continuous opportunities to update their knowledge and skills.

The FarmForward Needs Analysis highlights this need. Among the agricultural VET teachers surveyed in Lithuania, 65% had more than 20 years of teaching experience. While this reflects a highly experienced workforce, many educators began their careers before precision agriculture, climate-smart farming, and digital technologies became central to modern agriculture. Continuous professional development is therefore essential to keep teaching aligned with current industry needs.

The survey also revealed important gaps in digital competence. More than one-third of respondents (34%) reported limited or no use of digital technologies in their teaching, while updated digital tools and platforms were identified as the most needed resource for improving teaching practice. Similar trends are observed across Europe, where digital competence remains one of teachers' greatest professional development needs (OECD, TALIS 2018).

In addition, many teachers have limited opportunities to cooperate with researchers, advisory services, and demonstration farms, making it difficult to keep pace with innovation. Strengthening continuous professional development, expanding digital competences, and improving cooperation between education and the agricultural sector will help ensure that VET graduates are equipped with the knowledge and skills needed for climate-resilient and sustainable agriculture.

4. Proposed Solution

To ensure that agricultural VET teachers can prepare learners for the future of farming, continuous professional development should become a structured and integral part of their professional career. The proposed programme is based on three complementary components:

Establish a structured annual CPD programme. Agricultural VET teachers should participate in a minimum number of professional development hours each year, focusing on climate-resilient agriculture, innovative teaching approaches, and digital technologies. These learning activities should be recognised through nationally recognised certificates or micro-credentials, allowing teachers to gradually build and demonstrate their professional competences throughout their careers.

Strengthen digital competences for modern agricultural education. Digital technologies are becoming essential tools in both farming and education. Teachers therefore need continuous support to confidently integrate digital solutions into their

teaching. Training should go beyond basic digital skills and include practical applications relevant to modern agriculture, such as precision farming technologies, satellite imagery, climate data platforms, geographic information systems (GIS), sensors, farm management software, digital simulations, artificial intelligence, and interactive learning resources. The emphasis should always remain on using technology to improve learning outcomes rather than simply introducing new digital tools.

Connect professional development with real farming practice. The most effective professional learning takes place when theory is closely connected with practice. Agricultural VET teachers should therefore have regular opportunities to learn directly from researchers, agricultural advisers, demonstration farms, innovative farmers, and industry experts. Continuous professional development should include field visits, demonstration events, peer learning, Communities of Practice, mentoring, and collaborative Train-the-Trainer activities. Cooperation with the Agricultural Knowledge and Innovation System (AKIS), EIP-AGRI operational groups, universities, and agricultural businesses would ensure that teachers remain informed about the latest innovations, research findings, and practical solutions for climate-resilient farming.

5. Overview of Implementation

The necessary frameworks, organisations, and professional networks to support continuous professional development already exist in Lithuania. Rather than creating new structures, the priority should be to bring these existing initiatives together into one coordinated and sustainable professional development programme for agricultural VET teachers.

The implementation of this recommendation could begin with these practical steps:

Establish a national CPD framework for agricultural VET teachers. Main stakeholders, such as the Ministry of Education, Science and Sport and the Ministry of Agriculture

can recommend a clear annual professional development framework for agricultural VET teachers. The framework can specify the recommended number of CPD hours each year and offer a catalogue of micro courses / credentials covering priority areas such as climate-resilient agriculture, precision farming, digital technologies, sustainability, and innovative teaching methods.

Develop personalised professional learning plans. Professional development should respond to individual teachers' needs, teachers need identify their strengths and areas requiring further development, forming the basis of an individual professional learning plan with clear learning objectives for the year.

Create a flexible and accessible CPD offer. A leading agricultural VET institution could coordinate the delivery of professional development opportunities. The programme should combine face-to-face workshops, online courses, webinars, study visits, mentoring, Communities of Practice, and teacher exchanges with partner institutions across Europe.

Strengthen cooperation between education, research and the agricultural sector. Continuous professional development should be closely connected with real farming practice. The Lithuanian Agricultural Advisory Service, research institutions, universities, demonstration farms, and agricultural businesses should work together to provide current technical knowledge, organise field demonstrations, invite expert practitioners, and share practical examples of climate-resilient farming.

Make continuous professional development part of quality assurance. Continuous professional development should become an integral part of quality assurance in agricultural VET institutions. School leaders and education authorities should monitor teachers' participation in CPD and encourage the application of new knowledge in teaching. The focus should be on improving teaching quality, learner engagement, and

graduates' preparedness for modern agriculture, rather than simply recording training hours.

6. Target Group

The primary target group of this recommendation is teachers and trainers working in agricultural VET institutions. It is designed to support both experienced educators, who need regular opportunities to update their knowledge of climate-resilient agriculture and strengthen their digital competences, and newly qualified teachers, who are developing their pedagogical skills and professional confidence.

The recommendation also useful for several wider groups. VET learners will receive more relevant, practical, and engaging education that reflects current agricultural technologies, climate adaptation practices, and labour market needs. Agricultural VET institutions will benefit through higher-quality teaching, stronger links with the agricultural sector, and programmes that better reflect the green and digital transition. Continuous professional development will also support curriculum innovation, strengthen institutional quality assurance, and increase the attractiveness of agricultural education for both learners and employers.

7. Expected Impact

- VET teachers will keep their knowledge of climate-resilient agriculture up to date, ensuring that their teaching reflects the latest farming practices, technologies, and environmental challenges.
- VET teachers will become more confident in using digital technologies such as precision farming tools, digital learning platforms, and data-driven applications, making lessons more interactive and relevant to modern agriculture.
- Recognised micro-credentials will encourage a culture of lifelong learning, supporting teacher motivation, professional growth, and the continuous development of new competences.

- Closer collaboration with researchers, agricultural advisors, and demonstration farms will ensure that teaching is regularly enriched with current knowledge, practical experience, and real-life examples from the agricultural sector.
- Learners will benefit from more engaging, practical and future-oriented education, improving the overall quality and attractiveness of agricultural VET while better preparing graduates for careers in climate-resilient farming.

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Policy Recommendation 2

1. Title:

Supporting VET Graduates in Climate-Resilient Farming

2. Description

This recommendation proposes creating a clear and coordinated support pathway for VET graduates entering agriculture by bringing together existing measures available

through the EU's Common Agricultural Policy (CAP) and national support programmes. Rather than introducing new schemes, the aim is to make existing support easier to access and better connected to the needs of new farmers.

The pathway should combine three complementary forms of support:

Financial support for graduates establishing or taking over a farm, including start-up grants, investment aid, and other financial incentives.

Professional guidance and mentoring during the first years of farming through agricultural advisors, experienced farmers, demonstration farms, and peer-learning networks.

Support in accessing CAP eco-schemes, enabling new farmers to adopt climate-resilient and environmentally friendly farming practices while benefiting from available financial incentives.

By combining financial support, mentoring, and practical guidance, climate-resilient farming practices become not only environmentally responsible but also economically viable, helping young farmers build resilient and profitable agricultural businesses.

3. Problem Addressed

Lithuanian agriculture faces a major challenge in attracting and retaining the next generation of farmers. The FarmForward Needs Analysis shows that this issue is already evident in vocational education and training (VET), where many learners are interested in climate-resilient farming but remain uncertain about their future in the sector.

Several factors contribute to this situation. First, the farming population is ageing. The average farmer in the EU is 57 years old, while only a small proportion are under the age of 40 (European Commission, 2025; Eurostat, 2025). Without more young people

entering agriculture, the transition to climate-resilient farming will become increasingly difficult.

Second, access to finance remains a significant barrier. Many young people lack the financial resources needed to establish or take over a farm, while uncertainty about obtaining funding discourages them from investing in the sector. In addition, Lithuania's agricultural structure is dominated by small farms with relatively low incomes, making long-term viability more challenging for new entrants.

The FarmForward project survey confirms these challenges. Half of the VET learners surveyed were unsure whether they would pursue a career in agriculture after graduation, despite expressing strong interest in climate-resilient farming. Learners and stakeholders identified the same barriers: limited access to finance, uncertainty about investing in new technologies, and limited confidence in applying climate-smart farming practices. Stakeholders also emphasised the importance of continued support after graduation. They recommended mentoring, farmer networks, and peer-learning opportunities to help young farmers gain practical experience, build confidence, and successfully apply sustainable farming practices. These findings demonstrate that vocational education should not end with graduation but should provide continued guidance during the transition into farming.

4. Proposed Solution

A practical way to support VET graduates is to create a structured transition pathway that helps them move successfully from education into employment or farm management. Every graduate should receive career guidance during the final stage of their studies and be connected with the national Farm Advisory System, demonstration farms, and farmer peer-learning networks. This continued support will help graduates gain practical experience, build confidence, and successfully apply climate-resilient farming practices.

After graduation, support should be tailored to individual career pathways. Graduates establishing, taking over, or working on family farms should receive guidance on accessing CAP support, national start-up schemes, investment programmes, and eco-schemes that encourage climate-resilient farming. Linking financial support with sustainable farming practices will improve both environmental performance and farm viability.

Graduates pursuing careers as agricultural employees, advisors, technicians, or agribusiness professionals should have access to flexible lifelong learning opportunities, including short micro-credentials in precision agriculture, climate adaptation, digital technologies, and sustainable resource management.

This approach is fully aligned with recent European policy priorities on generational renewal in agriculture (European Commission, 2025) recognising that successful young farmers need not only financial support but also mentoring, lifelong learning, practical experience, and strong professional networks.

5. Overview of Implementation

Most of the support mechanisms needed to help VET graduates already exist in Lithuania. However, the priority should be to connect existing services into one clear and accessible pathway that every graduate can easily follow. Implementation could begin with several practical steps:

Strengthen career preparation in VET. During the final semester, agricultural VET schools should introduce a short module focused on career planning and available support opportunities. Students should learn about employment pathways, starting their own farm, financial support, CAP measures, eco-schemes, and opportunities for further training through micro-credentials. This would help address the uncertainty many learners expressed about their future careers and improve awareness of existing support schemes.

Provide every graduate with a clear roadmap. The National Paying Agency and the Lithuanian Agricultural Advisory Service could jointly prepare a simple guide explaining the support available to new graduates. Each graduate should also be connected with a designated advisor who can provide practical guidance during the transition from education to employment or farm management.

Expand lifelong learning opportunities. Training institutions could introduce micro-credentials covering priority topics such as climate adaptation, precision agriculture, water management, biodiversity, and digital farming. These short learning programmes would enable both recent graduates and experienced professionals to continuously develop their competences as new technologies and climate challenges emerge.

Build stronger links between education and employment. Closer cooperation between the Public Employment Service, farmer organisations, demonstration farms, and agricultural businesses would help graduates move more easily into apprenticeships, work placements, mentoring programmes, and permanent employment. At the same time, participation in demonstration farms and farmer networks would provide valuable practical experience and increase confidence in applying climate-resilient farming practices.

Together, these measures would create a smooth transition from vocational education into employment or farm management, ensuring that young professionals continue to receive the guidance, practical experience, and professional support needed to build resilient and sustainable agricultural careers.

6. Target Group

This policy recommendation addresses the stakeholders responsible for and benefiting from more VET graduates remaining in the field of agriculture:

VET Schools and Training Centres.

Agricultural Advisory Services and Demonstration-farm Networks.

VET Students and Graduates.

Active Farmers and Cooperatives.

7. Expected Impact

More agricultural VET graduates enter and remain in the sector – in any role – improving Lithuania’s weak generational-renewal and youth-employment ratios over time.

Graduates start with guidance, mentoring and, where relevant, capital and a climate-aligned income stream, rather than facing finance, risk and complexity barriers alone.

The climate-resilient practices taught in VET are applied in real workplaces from the first season, closing the loop between curriculum and field.

Stackable micro-credentials keep alumni’s skills current after graduation, supporting lifelong learning and the green transition of the sector.

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2. National Policy Input Report from Poland

Partner Information

Partner Organisation: Polish Farm Advisory and Training Center Natalia Truszkowska

Policy Recommendation 1

1. Title

Establishing a Dedicated Legal Framework for Agrivoltaics in Poland

2. Description

This recommendation proposes the development of a comprehensive, clear, and dedicated legal framework specifically tailored for agrivoltaic (AgriPV) systems in Poland. The primary objective is to legally acknowledge and support the dual use of agricultural land, enabling the simultaneous coexistence of high-quality food production and renewable energy generation. By establishing clear boundaries, this framework aims to safeguard primary agricultural functions, protect arable soil, and advance rural development goals without forcing farmers to choose between food security and clean energy production.

On a broader scale, the proposed regulatory framework is designed to serve as a pioneer model for other Central and Eastern European countries where agrivoltaics remains an unregulated or poorly defined sector. By introducing harmonized legal approaches, standardized technological criteria, and clear statutory definitions at the national level, this initiative will contribute significantly to the wider European adoption of AgriPV systems. Ultimately, it aims to foster a predictable regulatory environment that supports the seamless integration of innovative renewable energy solutions into sustainable, climate-resilient agriculture across the entire European Union.

3. Problem Addressed

Currently, agrivoltaics in Poland does not have a coherent and dedicated legal framework. Although initial legislative discussions and industry guidelines have emerged, investors and farmers still face significant administrative, economic, and regulatory barriers. Existing regulations often classify AgriPV installations in the same way as large-scale, ground-mounted photovoltaic farms. This rigid classification creates an immediate risk of losing agricultural land status and limits farmers' eligibility for direct payments under the Common Agricultural Policy (CAP) (European Commission, 2023).

Furthermore, complicated spatial planning procedures and highly restrictive, bureaucratic hurdles related to land-use conversion discourage long-term investments in dual-use renewable energy systems. The lack of legal clarity creates profound uncertainty among financial institutions, land developers, and rural communities, severely slowing down the adoption of innovative climate-resilient farming practices when they are most needed to combat shifting weather patterns.

4. Proposed Solution

Poland should introduce a dedicated, legally binding definition of agrivoltaic systems within both energy laws and agricultural legislation. This definition must clearly distinguish AgriPV from conventional ground-mounted photovoltaic farms by mandating that the primary utility of the land remains agricultural (Schindele et al., 2020).

To unlock the sector's potential, national legislation should incorporate the following pillars:

- **Exemption from Full Land Conversion:** Allow the installation of AgriPV infrastructure without requiring the complete and permanent conversion of

agricultural land status, provided that a minimum percentage of agricultural productivity is maintained.

- **CAP Direct Payment Protection:** Guarantee and maintain farmers' eligibility for CAP direct payments on the total land area utilized for agrivoltaic systems, establishing that the presence of elevated solar panels does not disqualify the parcel from being classified as active agricultural land (European Commission, 2023).
- **Streamlined Permitting and Spatial Planning:** Simplify spatial planning, environmental impact assessments, and grid-connection permitting procedures specifically for dual-use agricultural and energy projects to cut down project development timelines.
- **Targeted Financial Incentives:** Introduce dedicated financial support schemes, preferential loans, and green subsidies within national strategic programs to encourage small to medium-sized family farms to invest in agrivoltaic technologies.

5. Overview of Implementation

The implementation of this recommendation requires a coordinated, multi-stakeholder approach to bridge the gap between energy and agricultural policies. The primary governance framework should involve direct cooperation between the Ministry of Agriculture and Rural Development, the Ministry of Climate and Environment, local government authorities, agricultural advisory centres, and renewable energy industry associations.

Key implementation steps must include:

1. **Legislative Drafting:** Preparing targeted amendments to agricultural land protection acts and energy regulatory laws to embed the AgriPV framework into national law.
2. **Technical Standardization:** Developing national technical standards and clear operational guidelines (e.g., panel heights, light transmission rates, crop spacing) to ensure farming activities are genuinely unhindered.
3. **CAP Strategic Alignment:** Integrating specific agrivoltaic measures and eco-schemes into future updates of Poland's CAP Strategic Plan and national rural development programs.
4. **Demonstration and R&D:** Launching state-funded pilot projects and localized demonstration farms to scientifically assess and showcase the effectiveness of AgriPV solutions under specific Polish climatic, soil, and crop conditions.
5. **Capacity Building:** Providing widespread technical training, instructional toolkits, and advisory support for local zoning authorities, agricultural advisors, and farmers.

6. Target Group

This policy recommendation targets a broad network of stakeholders vital to rural transformation:

- **National Policymakers and Legislators:** Ministries responsible for agriculture, climate policy, renewable energy, and rural development who hold the power to change statutory laws.
- **Local and Regional Public Authorities:** Municipal offices and regional zoning boards involved in spatial planning and land-use management.

- **Primary Producers:** Individual farmers, agricultural entrepreneurs, and rural cooperatives seeking to diversify their income streams, reduce electricity overheads, and improve energy resilience.
- **Industry Developers:** Renewable energy investors, engineers, and developers engaged in designing sustainable, dual-use land infrastructure.
- **Knowledge Brokers and Educators:** Agricultural advisory centres, Vocational Education and Training (VET) providers, research institutions, and agricultural universities responsible for driving knowledge transfer and conducting pilot studies.

7. Expected Impact

The implementation of a dedicated agrivoltaics policy framework will accelerate the deployment of sustainable renewable energy solutions across rural Poland while simultaneously protecting the nation's agricultural production capacity and food security. By providing legal certainty, this framework will unlock significant private and institutional investments in AgriPV systems, optimizing land use efficiency (Al Mamun et al., 2022). Farmers will directly benefit from improved energy self-sufficiency and stabilized, diversified income streams, shielding them from volatile global commodity markets. Microclimatic benefits provided by solar shading, such as reduced soil evaporation and protection against extreme weather events (hail, scorching heat) will strengthen the climate resilience of vulnerable crops. Furthermore, by establishing clear rules for dual-use land, this policy will completely eliminate the growing conflicts between renewable energy development and agricultural land protection. In the long term, these actions will actively support Poland's alignment with the European Union's green transition objectives under the European Green Deal, establishing a resilient blueprint for sustainable rural development across Europe.

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Policy Recommendation 2

1. Title

Strengthening Agrivoltaic Skills and Training Across Europe through VET Integration

2. Description

This recommendation proposes a strategic and systematic modernization of vocational education and training (VET) frameworks to integrate agrivoltaics (AgriPV) into European agricultural and renewable energy curricula. The primary objective is to equip current and future farmers, agricultural technicians, and green-energy installers with cross-disciplinary skills combining agronomy, environmental science, and photovoltaic engineering.

By introducing standardized, modular training programs and practical learning pathways, this initiative aims to eliminate the existing knowledge gap that prevents rural communities from embracing the green transition. On a broader scale, this recommendation establishes a collaborative European training blueprint. It encourages cross-border knowledge transfer and ensures that vocational institutions can deliver recognized, future-proof certifications, positioning VET as a key driver of climate-resilient farming and smart energy deployment across the European Union.

3. Problem Addressed

The rapid technological advancement of agrivoltaic systems has drastically outpaced the adaptation of formal agricultural education and vocational training frameworks in Europe. Currently, there is a profound structural disconnect between renewable energy engineering and traditional agricultural practices (AgriVOLTages, 2025). Most existing VET programs treat solar energy generation and crop or livestock management as entirely separate industries.

Consequently, farmers lack the technical capacity to evaluate AgriPV feasibility, manage light transmission profiles, or maintain machinery around elevated solar infrastructures, while energy developers often lack an understanding of soil preservation and crop microclimates (Paisley, 2026). This mutual deficit creates widespread skepticism, high perceived technological risks, and project mismanagement (Trommsdorff et al., 2021). Without standardized educational pathways, recognized certifications, or updated advisory services, rural youth and agricultural entrepreneurs remain ill-equipped to exploit the commercial and environmental benefits of dual-use farming land.

4. Proposed Solution

To bridge this critical skill gap, European education authorities, in cooperation with sectoral skill alliances and the agricultural knowledge and innovation systems (AKIS), must formally integrate agrivoltaics into VET and continuous professional development (CPD) frameworks.

The proposed solution includes the following operational measures:

- **Interdisciplinary Curriculum Development:** Design and launch standardized, modular VET curricula that blend agro-ecology, crop physiology under shade, digital farm management, and solar PV maintenance (AgriVOLTages, 2025).
- **"Train-the-Trainer" Frameworks:** Build dedicated training programs for agricultural extension officers, public advisory centres, and vocational teachers, ensuring they can provide impartial, evidence-based guidance to farmers (SCAR-AKIS, 2025).
- **Blended and Immersive Learning Tools:** Incorporate digital twin simulations, virtual reality (VR) training modules, and hybrid learning tools to allow students to interact safely with AgriPV installation designs and simulate crop-yield variations.
- **Unified European Certification:** Establish a standardized, micro-credentialing or certification system for "Agrivoltaic Technical Specialists" to ensure cross-border recognition of skills within the EU labor market.

5. Overview of Implementation

Implementing this educational reform requires a collaborative, multi-level governance approach involving ministries of education, ministries of agriculture, VET providers, and industry clusters.

Key implementation phases must include:

1. **Skill Mapping and Occupational Profiling:** Conducting an exhaustive European-level occupational analysis to officially define the job profile, core competencies, and safety requirements of an agrivoltaic professional.
2. **Curriculum Co-Design:** Bringing together agronomists, solar engineers, and VET pedagogy experts to build adaptable learning modules that can be integrated into existing agricultural degrees or offered as short-term upskilling certifications.
3. **Establishment of Regional Living Labs:** Setting up functional, physical agrivoltaic demonstration sites at vocational schools and agricultural research stations to facilitate hands-on learning, machinery operation training, and empirical data collection (SCAR-AKIS, 2025).
4. **Policy and Funding Alignment:** Leveraging EU funding streams—specifically Erasmus+ (KA2 Cooperation Partnerships), the European Social Fund Plus (ESF+), and Just Transition funds—to subsidize training costs for smallholder farmers and update school infrastructures.
5. **Advisory Network Activation:** Deploying nationwide informational campaigns through existing agricultural advisory bodies to offer immediate, short-course upskilling opportunities for active farmers.

6. Target Group

This policy recommendation directly addresses the stakeholders responsible for and benefiting from knowledge diffusion in rural areas:

- **VET Providers and Institutions:** Vocational schools, agricultural colleges, technical universities, and private training centers looking to modernize their educational offers.

- **Agricultural Advisory Services:** Public and private farm advisors, extension specialists, and innovation brokers who serve as primary consultants for rural investments (SCAR-AKIS, 2025).
- **Students and Rural Youth:** Next-generation farmers and vocational students seeking highly competitive, green-economy skills to revitalize rural family businesses.
- **Active Farmers and Cooperatives:** Agricultural workers requiring flexible, practical upskilling opportunities to diversify their income streams and manage climate risks.
- **Solar Sector Technicians:** Renewable energy professionals who need to learn agricultural safety standards, soil protection techniques, and livestock welfare requirements.

7. Expected Impact

The integration of agrivoltaics into VET frameworks will generate a highly skilled, adaptable workforce capable of driving Europe's dual green and digital transitions. By democratizing access to technical knowledge, this policy will substantially reduce the perceived operational and financial risks of AgriPV, boosting adoption rates among skeptical landholders (Trommsdorff et al., 2021).

Farmers will gain the exact competencies needed to maximize dual-land yields, optimize water use efficiency beneath solar arrays, and confidently negotiate contracts with energy developers. Within educational institutions, the modernized curriculum will increase the attractiveness of agricultural vocational paths for tech-savvy youth, mitigating rural depopulation trends. Furthermore, strengthening the capabilities of agricultural advisory services will create a trusted infrastructure for technical support. In the long term, these educational measures will turn VET into a

pillar of regional resilience, aligning rural human capital with the strategic targets of the European Green Deal and the EU Pact for Skills.

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3. National Policy Input Report from Slovenia

Partner Information

Partner Organisation: Chamber of Agriculture and Forestry of Slovenia – Institute of Agriculture and Forestry Maribor

Policy Recommendation 1

1. Title

Systematic Integration of Climate-Resilient Farming into Agricultural VET Curricula

2. Description

Introducing a dedicated subject in the context of climate change, which would address climate-resilient farming as a core part of agricultural education.

The subject would combine priority topics including soil health and regenerative practices, resilient crop varieties, efficient fertiliser use, water management, drought and frost adaptation, climate-smart livestock management, digital and precision farming tools, and the economic aspects of adaptation.

To support implementation, the curriculum change should be accompanied by practical teaching materials, field-learning activities and peer-learning sessions for educators. This would ensure that teachers are not only provided with a toolkit, but are also supported in delivering a structured, practice-oriented and nationally relevant learning content on climate-resilient agriculture.

3. Problem Addressed

Educators report that climate-related topics are present in agricultural education but are often only partially integrated. They also point to a lack of tailored, interactive and up-to-date teaching materials. As a result, teachers often have to adapt general materials or prepare their own resources, which creates uneven quality and inconsistent coverage of climate-resilient agriculture across programmes.

4. Proposed Solution

The proposed solution is to introduce a dedicated subject or compulsory curriculum module on climate-resilient agriculture within agricultural VET programmes. This

would move climate-related content from fragmented inclusion in different subjects towards a more structured and systematic approach.

5. Overview of Implementation

The implementation should start with a review of existing agricultural VET curricula to identify where climate-related topics are currently included and where the main gaps remain. Based on this review, a dedicated subject or compulsory curriculum module should be developed, such as “Agriculture in the Context of Climate Change”/“Climate Resilient Farming”, which would be integrated into agricultural VET programmes.

The process should involve the Ministry of Education, the Ministry of Agriculture, National Education Institute of RS, Center of Vocation Education RS, Slovenian Quality assurance agency for higher education (NAKVIS), agricultural VET schools, teachers, Chamber of Agriculture and Forestry Slovenia, research institutions and representatives of the farming sector. The subject or module should combine theoretical knowledge with practical field-based learning, case studies, demonstrations and problem-solving tasks linked to real Slovenian farming conditions.

Implementation should be gradual. First, the subject or module could be piloted in selected agricultural schools, supported by teaching materials, practical exercises, and field-learning sites. After evaluation and feedback from teachers and learners, it could be adapted and introduced more widely across agricultural VET programmes.

6. Target Group

The primary target group is agricultural VET students who will become future farmers, farm managers, agricultural workers, advisors or other professionals in the agricultural sector.

The second group consequently target teachers, trainers, education policymakers, agricultural policymakers, advisory services and research institutions.

7. Expected Impact

The recommendation would ensure that climate-resilient agriculture becomes a core and systematic part of agricultural education in Slovenia, rather than being addressed only through fragmented or optional content. Learners would gain stronger knowledge and practical skills to understand and respond to climate-related challenges.

Teachers would benefit from a clearer curriculum framework, practical teaching materials, field-learning opportunities and professional support, which would strengthen their confidence and capacity to teach climate-resilient agriculture. The measure would also improve the relevance of agricultural VET programmes by linking education more closely with current and future needs.

In the long term, this could contribute to better-prepared young farmers and agricultural professionals, stronger uptake of sustainable and adaptive farming practices, and improved cooperation between schools, advisory services, research institutions and the farming sector.

Policy Recommendation 2

1. Title

National Network of Demonstration Farms and VET Field-Learning Sites for Climate-Resilient Agriculture

2. Description

Establishing a coordinated national demonstration network of field-learning sites for climate-resilient agriculture would be very sufficient for Slovenian agriculture. The network should function as a structured practical learning system for agricultural VET,

bringing together school estates, research and advisory demonstration sites, and selected partner farms. The purpose of the network would be to move climate-resilient agriculture beyond classroom-based teaching and provide practical learning opportunities.

3. Problem Addressed

The Slovenian needs analysis shows that practical experience is one of the weakest elements in current agricultural education and training. Learners express interest in climate-resilient agriculture but often lack applied knowledge and opportunities to test solutions in practice. Educators also report a shortage of practical examples and real-life demonstration opportunities.

4. Proposed Solution

The proposed solution is to establish a nationally coordinated and implemented field-learning network for climate-resilient agriculture. The network should be based on a hybrid model.

The core of the network should consist of school-owned or institutionally managed sites, where practical training can be planned, repeated and safely integrated into VET curricula. These sites should provide regular hands-on learning opportunities.

Selected farms should complement this network as partner demonstration farms, providing real-life examples and hosting occasional, pre-agreed field visits or demonstrations. To ensure long-term participation, partner farms should be supported through clear cooperation agreements and a dedicated state-funded compensation scheme. This compensation should recognise their role in knowledge transfer, hosting field demonstrations and providing real-life examples of climate-resilient farming practices

The measure should be supported by national guidelines, simple demonstration protocols, teaching materials and field-learning activities. It should first be tested through a pilot network involving selected agricultural schools and farmers, and then gradually expanded to other VET providers.

5. Overview of Implementation

The Ministry of Agriculture, Forestry and Food and the Ministry of Education, in cooperation with agricultural VET schools, Agriculture and Forestry Institutions, research institutions and selected farms, should support the creation of agricultural VET school demonstration sites. Farms should be selected to represent different production systems, such as crop production, livestock, horticulture, mixed farming and organic farming. Demonstration activities should be integrated into VET curricula as part of the Climate Resilient Farming subject (1st Policy Recommendation).

6. Target Group

The primary target group is agricultural VET students who will become future farmers, farm managers, agricultural workers, advisors or other professionals in the agricultural sector.

The second group consequently target teachers, trainers, education policymakers, agricultural policymakers, advisory services and research institutions.

7. Expected Impact

This recommendation would strengthen the practical dimension of agricultural education in Slovenia by exposing learners to climate-resilient farming practices in real or close-to-real production conditions. Students would gain more applicable skills and better understand how farmers need to respond to challenges such as drought, soil degradation, water stress, nutrient management and extreme weather impacts in such a fast changing environment.

It would also improve the relevance and quality of agricultural VET programmes by providing teachers with practical teaching environments, real-life examples and stronger links to farms, advisory services and research institutions. Practical learning process on demonstration farms would make climate-resilient agriculture more tangible and engaging for learners, while supporting faster knowledge transfer and more informed adoption of sustainable practices in the farming sector.

An interdisciplinary approach is essential, as it connects theory with practice through real-life problem-solving, not only through theory and laboratory-based learning. At the same time, it strengthens cooperation between schools, farmers, advisory services, research institutions and policymakers, creating links across different levels of the agricultural education and innovation system.

Additional Comments (optional)

The integration of Climate-Resilient Farming subject into the agricultural education system should be understood as part of a wider global shift in curriculum development, not only as a national need. Climate change is no longer a future scenario but a present reality, already affecting agricultural production through more frequent droughts, floods, heat stress, frost events, soil degradation and new pest and disease pressures. Therefore, education must move from a reactive approach towards a preventive and adaptive approach that prepares young people before they enter the farming sector.

Agricultural schools are a key starting point for this transition. Young farmers, future advisors and agricultural professionals need to understand the challenges that are already present today and be equipped with up-to-date knowledge, practical skills and critical thinking to respond to them. Climate-Resilient Farming subject should therefore not be treated as a marginal or optional topic, but as a central element of agricultural education.

At the same time, such a subject or module must be designed as a dynamic and regularly updated learning area. Climate risks, technologies, research findings and adaptation practices are evolving rapidly, so the curriculum should allow continuous updates based on new data, scientific studies, field experience and advisory knowledge. If curriculum reform takes too long and remains too rigid, education risks preparing students for yesterday's challenges rather than the realities they will face tomorrow.

Such an approach would also make agricultural education more attractive, as it would address real and urgent challenges that are already affecting the sector and will become even more important in the future. By focusing on climate resilience, young people can better understand that choosing agricultural education is not only relevant, but essential for the future of food production, rural areas and environmental sustainability. This can also make the sector more appealing, as it offers long-term professional relevance and strong employment prospects in a field where knowledge, adaptation and practical solutions will be increasingly needed.

4. National Policy Input Report from Greece (I)

Partner Information

Partner Organisation: Social Nebula PC

Policy Recommendation 1

1. Title

An EU Framework of Stackable Micro-Credentials in Climate-Resilient Agriculture for the Continuous Upskilling of Active Farmers and Rural Professionals

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2. Description

This recommendation calls on the European Commission and Member States to operationalise the 2022 Council Recommendation on a European approach to micro-credentials specifically for the agricultural sector, by establishing a coherent, EU-wide system of short, stackable and mutually recognised micro-credentials in climate-resilient agriculture. The system would target active farmers, farm workers, advisors and other rural professionals who cannot realistically leave their farms to undertake long, formal VET programmes. Each micro-credential would certify a focused set of learning outcomes, for example in soil health and regenerative practices, water-smart irrigation, drought and frost adaptation, precision agriculture, climate-smart livestock management, or climate risk and insurance literacy. This could be combined over time into recognised qualification packages. The aim is to turn lifelong learning in climate-resilient farming from an exception into the European norm.

3. Problem Addressed

Across the EU, only about 12% of farmers are under the age of 40 and the average farmer is 57 years old (European Commission, 2025). The workforce that has to implement climate adaptation in the next decade is therefore the workforce already in the field, not future VET graduates. Yet formal agricultural VET in most Member States is designed for young learners and full programmes, with very limited, fragmented and non-recognised provision for short upskilling of active farmers and advisors. WP2 evidence collected in Greece confirms this gap from three angles. Stakeholder organisations (mostly cooperatives, 51% of respondents) state that current government policies and support mechanisms are clearly insufficient – 82% rated them at the two lowest levels – and that the biggest barriers to adaptation are the knowledge gap, low digital skills of (often older) producers, and lack of climate-savvy advisors. Educators report widespread dissatisfaction with the availability of updated, practical teaching materials (more than two thirds rated material adequacy at level 3

or below) and call for stronger lifelong learning offers and access to demonstration farms and specialised workshops. WP4 Expert Insights Series confirmed that, when content is modular, practice-oriented and short, both farmers and advisors engage with it; when it is delivered as long academic programmes, uptake collapses. The same picture is reported across the consortium and is consistent with the European Court of Auditors' findings that CAP-funded advice and training reach only a small share of EU farmers.

4. Proposed Solution

The EU should establish, by 2028, a Climate-Resilient Agriculture Micro-Credential Framework (CRA-MCF) as a sectoral implementation of Council Recommendation 2022/C 243/02 on micro-credentials, anchored in the European Skills Agenda, the AgriFood Pact for Skills and the EU Strategy for Generational Renewal in Agriculture. The framework should rest on five pillars. First, a common EU catalogue of short learning outcomes for climate-resilient agriculture, co-designed with Copa-Cogeca, EU CAP Network, the AKIS Coordination Body and EU-level VET providers, covering at minimum soil and water management, drought and heat adaptation, precision and digital farming, regenerative and agro-ecological practices, climate risk and insurance, and on-farm energy management. Second, a quality assurance and recognition layer: all micro-credentials issued under the framework should follow the EU standard elements (learning outcomes, workload in ECTS or notional hours, level referenced to the European Qualifications Framework, assessment, quality assurance), and be portable through Europass and the European Digital Credentials for Learning infrastructure. Third, stackability with formal VET: Member States should recognise bundles of micro-credentials as equivalent to defined modules of EQF level 4–5 agricultural VET, enabling active farmers to convert continuous learning into formal qualifications. Fourth, dedicated funding: CAP Strategic Plans should be required to allocate a minimum share of AKIS and farm advisory funds to CRA-MCF delivery,

complemented by Erasmus+ KA2 and ESF+ projects to subsidise participation by smallholders and vulnerable rural groups. Fifth, accessibility: at least one micro-credential per topic must be offered in blended or fully online formats with national-language subtitling, in line with the needs of farmers in remote rural areas with limited broadband or time.

5. Overview of Implementation

Implementation should follow a three-phase, multi-level approach. In Phase 1 (2026–2027), DG AGRI together with DG EMPL and DG EAC should formally adopt the CRA-MCF as a sectoral deliverable of the Pact for Skills Agri-Food Partnership, agreeing the common catalogue of learning outcomes with Member States, social partners and EU networks such as Copa-Cogeca, EFFAT, CEMA and the EU CAP Network. CEDEFOP and ETF should support quality assurance and EQF referencing. In Phase 2 (2027–2029), Member States should mandate their CAP Strategic Plans and national VET strategies to include CRA micro-credentials as eligible AKIS, farm advisory and lifelong learning interventions; designate or accredit awarding bodies (chambers of agriculture, VET centres, universities, advisory services, qualified private providers); and pilot at least three flagship credentials per Member State, co-designed with farmer cooperatives and advisors. In Phase 3 (from 2030), micro-credentials issued under the framework should be automatically recognised across Member States via Europass and digital credentials, allowing farmers and advisors to move, train and be hired across borders on the basis of standardised, comparable skills. Required support mechanisms include: an EU CRA-MCF Registry maintained by the European Commission; an inter-ministerial coordination mechanism at national level between Agriculture, Education and Labour ministries; tailored support to small VET providers and advisory services to develop and update credentials; and a monitoring framework that tracks not only enrolments but also adoption of climate-resilient practices on participating farms.

6. Target Group

Primary target groups are EU and national policymakers in the fields of agriculture, education and employment, who hold the legal and budgetary levers to recognise micro-credentials and integrate them into the CAP and VET systems. The framework is designed for the benefit of active farmers and farm workers, particularly mid-career and older producers in regions most exposed to climate stress (Southern and South-Eastern Europe, but increasingly also Central and Northern regions facing drought, floods and new pests). Other key beneficiaries are farm advisors and AKIS actors, VET providers, agricultural cooperatives and producer organisations, and EU-level sectoral skills bodies (Copa-Cogeca, EFFAT, the AgriFood Pact for Skills Partnership). Indirectly, the framework benefits rural youth and new entrants by signalling that climate-resilient skills carry recognised, portable value across the EU labour market.

7. Expected Impact

By 2030, the framework would transform climate-resilient agriculture from a niche of early-adopting farmers into a standard skill set held by a critical mass of active producers across the EU. Expected outcomes are fourfold. First, accelerated diffusion of climate-resilient practices: by lowering the time and cost of upskilling, micro-credentials would convert WP2 evidence of farmer interest into actual on-farm change. Second, stronger and more impartial advisory services: farm advisors with EQF-referenced climate credentials would deliver more consistent and evidence-based advice, addressing the WP2 finding that knowledge and digital gaps remain the top barriers to adaptation. Third, a fairer rural labour market: stackable, portable credentials would allow seasonal workers, women re-entering agriculture, and new entrants to demonstrate climate-relevant competences across the EU, supporting both the European Pillar of Social Rights and the Long-term Vision for Rural Areas. Fourth, more coherent CAP delivery: aligning CAP-funded advice and training with a common

EU credential framework would improve the European Court of Auditors' long-standing criticism of fragmented, hard-to-evaluate AKIS spending.

Policy Recommendation 2

1. Title

A Climate-Smart Entrepreneurship Pathway for New Entrants to EU Agriculture, Linking VET, CAP Young Farmer Support and Farm Advisory Services

2. Description

This recommendation proposes the design and EU-wide rollout of an integrated Climate-Smart Entrepreneurship Pathway for new entrants and young farmers (defined under the CAP as those up to 40 years of age and starting their farming activity). The pathway combines, in a single trajectory: (i) a dedicated agricultural VET module on climate-resilient farming, business planning and digital tools; (ii) systematic linkage with CAP Young Farmer Top-up payments and Installation Aid; (iii) at least 12 months of structured mentoring by trained AKIS advisors and demonstration farms; and (iv) a Climate-Smart Business Plan as a precondition for drawing the full CAP installation premium. The aim is to make the European Strategy for Generational Renewal in Agriculture concrete by transforming generic 'young farmer' support into a guided, climate-smart entry route into the sector.

3. Problem Addressed

The EU faces a double demographic and climate emergency in agriculture. Only 12% of EU farmers are under 40 and the share of farmers aged 25–44 fell from 23% in 2010 to 19% in 2020 (European Commission, 2025). At the same time, the new generation entering the sector has to operate under climate conditions that previous generations have not experienced – recurrent drought, heat waves, fire risk, new pests, water stress and increasingly volatile yields. WP2 evidence from Greece shows the structural risk vividly: out of 65 agricultural VET learners (mostly EPAL and IEK students), only 35.4% see themselves working in a rural area in the future, while 35.4% explicitly rule

it out and 29.2% are unsure; 56.9% have never received formal climate-focused lessons; 41.6% feel that their studies have not prepared them for climate-related challenges; and the most demanded skills are practical workshops, precision agriculture and renewable energy integration. WP3 piloting confirms that learners engage when training combines real farm visits with business and digital content, but disengage when it is purely theoretical. Despite Greece allocating around €730 million to young farmer support under the CAP Strategic Plan 2023–2027, and similar substantial envelopes in other Member States, the link between CAP money, agricultural VET and AKIS advisory services remains weak: young farmers often receive installation aid without a climate-coherent business plan or structured technical mentoring, and VET graduates often complete their studies without ever interacting with the CAP support that could finance their entry. The result is high attrition of new entrants, suboptimal use of public funds, and slow adoption of climate-resilient practices precisely on the farms that should be leading the transition.

4. Proposed Solution

The European Commission, jointly with Member States, should establish by 2028 a Climate-Smart Entrepreneurship Pathway as a standard EU-recognised route into farming, integrated into the post-2027 CAP and into national agricultural VET systems. Four operational elements are proposed. First, an EU reference curriculum module – co-designed by DG AGRI, DG EAC, CEDEFOP, the EU CAP Network and the AgriFood Pact for Skills – covering climate-resilient agronomy, water and soil management, digital and precision tools, agro-ecological and regenerative practices, climate risk and insurance, on-farm energy management, and farm business planning. The module should be a compulsory part of agricultural VET at EQF levels 4–5 in all Member States and should also be available as a stand-alone certificate for adult new entrants. Second, mandatory linkage with CAP Young Farmer support: Member States should be required, in their CAP Strategic Plans, to make completion of the climate-smart

module (or an equivalent prior qualification) a precondition for drawing the full CAP Installation Aid and Young Farmer Top-up, while ensuring that the requirement does not exclude vulnerable groups but instead triggers tailored, publicly funded learning offers. Third, structured AKIS mentoring: each beneficiary should be matched with a trained farm advisor and a demonstration farm for at least 12 months after installation, with the advisor responsible for co-developing and monitoring a Climate-Smart Business Plan covering climate risks, adaptation measures, financial projections and digital tools. Fourth, gender, ownership and succession measures: the pathway should be explicitly designed to be accessible to women (currently only 26% of EU farmers under 40), to new entrants without family farms, and to successors, with dedicated support on land access, cooperative integration and succession planning.

5. Overview of Implementation

Implementation should be staged in line with the post-2027 CAP cycle. In 2026–2027, the European Commission should adopt the reference curriculum module and pathway specification through a Communication accompanying the post-2027 CAP proposal and feed it into the EU Strategy for Generational Renewal in Agriculture. In parallel, ministries of agriculture and education in each Member State should designate a national focal point for the pathway, involving VET authorities, CAP Managing Authorities, paying agencies, AKIS coordination bodies, agricultural chambers and farmer organisations. In 2028–2029, Member States should pilot the pathway in selected regions (at least one per Member State, prioritising areas with severe generational ageing and climate exposure, such as the Mediterranean), bundling CAP installation aid with a dedicated VET module and structured AKIS mentoring. From 2030, the pathway should become the default EU-wide route for accessing CAP Young Farmer support, with a transition period for currently enrolled young farmers. Required support mechanisms include: a dedicated CAP intervention or sub-intervention to fund the mentoring and demonstration-farm component; a 'Train-the-Mentor' programme

for AKIS advisors building on the WP4 Expert Insights Series methodology; a digital platform – federated with Europass and existing CAP monitoring systems – where new entrants can build their Climate-Smart Business Plan, access modular learning, find a mentor and report progress; and an EU monitoring framework tracking the share of new entrants completing the pathway, their adoption of climate-resilient practices, their economic viability and their continuation in farming at 5- and 10-year horizons.

6. Target Group

Primary target groups are EU and national policymakers responsible for the design of the post-2027 CAP, of national CAP Strategic Plans, and of agricultural VET. Direct beneficiaries are new entrants and young farmers (with particular attention to women, successors of family farms and new entrants without an agricultural background), as well as agricultural VET students approaching the transition into farming. The pathway also directly involves VET providers (EPAL, IEK and equivalent agricultural training institutions across the EU), agricultural advisory services and AKIS actors, demonstration farms and cooperatives, and Managing Authorities and paying agencies responsible for delivering CAP Young Farmer support. Indirect beneficiaries are rural communities facing depopulation and climate stress, consumers and food systems that depend on a renewed and climate-literate farming workforce, and Member States themselves, whose public investment in young farmer support would be more effectively converted into resilient farms.

7. Expected Impact

The pathway addresses simultaneously the demographic and the climate dimensions of the EU Strategy for Generational Renewal in Agriculture and directly tackles barriers identified in the FarmForward project's needs analysis. Expected impacts are fivefold. First, higher entry and retention of new farmers: by offering young people a structured, credible and supported route into farming, the pathway is expected to contribute

meaningfully to the EU 2040 ambition of doubling the share of young and new farmers. Second, climate-coherent investment of CAP funds: making installation aid conditional on a Climate-Smart Business Plan ensures that every euro of CAP young farmer support is invested in farms designed for the climate of the next 30 years, not the last 30. Third, stronger linkage between VET, CAP and AKIS: by embedding mentoring and business planning into the entry route, the pathway operationalises the long-standing EU policy objective of an integrated AKIS, breaking the silos that WP2 stakeholders consistently flagged. Fourth, fairer access: explicit attention to women, non-family successors and new entrants without land would help correct current imbalances (only 26% of EU farmers under 40 are women) and contribute to the European Pillar of Social Rights and the Long-term Vision for Rural Areas. Fifth, measurable adoption of climate-resilient practices: WP2 data show that learners and stakeholders are already aware of drought, soil and precision-farming priorities; the pathway converts that latent demand into actual on-farm investments and management decisions, supported by mentors and demonstration sites. Indicative success metrics include: at least 200,000 new entrants completing the pathway across the EU between 2028 and 2034; an increase of at least 5 percentage points in the share of farmers under 40 in pilot regions by 2034; and statistically significant gains in the adoption of climate-resilient practices on farms supported through the pathway, verified through CAP and AKIS monitoring.

Additional Comments

These two recommendations are framed at EU level on purpose, in line with the consortium's decision to focus the FarmForward Policy Recommendations Collection on the European Union rather than on individual Member States. They are nonetheless deeply informed by the Greek national context: a Mediterranean country already strongly affected by drought, heat, fire risk and water scarcity; an ageing farming workforce; a fragmented agricultural VET landscape (EPAL, IEK and private providers) that has limited links with CAP Young Farmer support and AKIS advisory services; and a learner population that is highly interested in climate resilience but uncertain about pursuing a rural career. The two recommendations are also complementary to, and explicitly avoid duplication with, the contributions of the other FarmForward partners: the Polish recommendations focus on agrivoltaics (a specific technology and skills cluster); the Bulgarian recommendations address general VET–industry collaboration and quality assurance; the Slovenian recommendations focus on the integration of a dedicated climate-resilient farming subject into national agricultural VET curricula and on demonstration farm networks. The two Social Nebula recommendations add two missing EU-level pieces of the puzzle: a horizontal lifelong learning instrument (micro-credentials) for the active workforce, and a vertical entry pathway (linking VET, CAP and AKIS) for the next generation. Together with the other partners' contributions, they form a coherent EU package covering students, new entrants and active farmers.

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5. National Policy Input Report from Bulgaria

Partner Information

Partner Organisation: Agricultural University Plovdiv

Policy Recommendation 1

1. Title

Strengthening Industry Collaboration in Vocational Education and Training (VET)

2. Description

This recommendation advocates for the establishment of a National Industry Collaboration Framework aimed at bridging the gap between vocational education and labor market needs through structured partnerships between VET providers and industry stakeholders.

3. Problem Addressed

The primary issue is the **mismatch between the skills taught in VET programs and those demanded by employers**, leading to high youth unemployment rates and a lack of qualified candidates in the labor market. This gap is exacerbated by insufficient collaboration between educational institutions and industry, limiting the effectiveness of VET programs.

4. Proposed Solution

National Industry Collaboration Framework:

Curriculum Development: Involve industry experts in curriculum design to ensure alignment with current market needs.

Apprenticeships and Internships: Expand opportunities for students to gain hands-on experience in real work environments through structured apprenticeship programs.

Continuous Professional Development: Provide ongoing training for educators to keep pace with industry advancements and teaching methodologies.

5. Overview of Implementation

Establish a National Task Force: Form a collaborative group comprising representatives from government, industry, and educational institutions to oversee the framework's development.

Conduct Industry Needs Assessments: Regularly assess skills demand in key sectors to inform curriculum updates and training programs.

Create Partnership Agreements: Develop formal agreements between VET providers and local businesses to outline roles, responsibilities, and expectations for collaboration.

Pilot Programs: Implement pilot programs in select regions to test the effectiveness of collaborative training models, including apprenticeships and project-based learning.

Monitor and Evaluate: Establish metrics for success and conduct ongoing evaluations to refine the framework based on feedback from stakeholders.

6. Target Group

- **Policymakers:** To create supportive legislation and funding mechanisms.
- **VET Providers:** To implement the framework and foster partnerships with industry.

- **Industry Stakeholders:** To engage in collaborative initiatives and provide practical insights.

7. Expected Impact

This recommendation aims to create a sustainable model for vocational education in Bulgaria that benefits students, employers, and the broader economy.

- **Reduced Skills Mismatch:** Aligning VET curricula with industry needs will decrease the gap between graduate skills and employer expectations.
- **Increased Employment Rates:** Enhanced practical training will lead to higher job placement rates for graduates, contributing to lower youth unemployment.
- **Strengthened Industry Relationships:** Building robust partnerships will foster a culture of collaboration, ensuring that VET programs remain relevant and effective.
- **Enhanced Student Engagement:** Students will benefit from practical, real-world learning experiences, increasing their interest in VET pathways.

Policy Recommendation 2

1. Title

Enhancing Quality Assurance in Vocational Education and Training (VET)

2. Description

This recommendation proposes the establishment of a comprehensive Quality Assurance Framework to elevate the standards of vocational education and training in Bulgaria. This framework aims to ensure that VET programs are relevant, effective, and aligned with both educational and labor market outcomes.

3. Problem Addressed

The key issue is the **insufficient quality of VET programs**, characterized by outdated curricula, inadequate teaching methods, and a lack of alignment with industry standards. As highlighted in previous findings, these gaps lead to poor student outcomes and reduced employability.

4. Proposed Solution

Comprehensive Quality Assurance Framework:

Standardized Assessment Tools: Develop tools for evaluating program quality, including student assessments, employer surveys, and institutional self-evaluations.

Curriculum Modernization: Regularly update curricula to reflect current industry practices and technological advancements.

Collaboration with Accreditation Bodies: Partner with national and international accreditation bodies to align local VET programs with best practices.

5. Overview of Implementation

1. **Develop Quality Standards:** Collaborate with educational experts and industry representatives to create a set of quality standards specifically for VET programs.
2. **Training for Educators:** Implement professional development programs for VET educators focused on innovative teaching methods and curriculum design.
3. **Regular Audits and Evaluations:** Establish a system for regular audits and evaluations of VET institutions to assess compliance with the newly developed quality standards.
4. **Stakeholder Feedback Mechanism:** Create channels for students, employers, and educators to provide feedback on VET programs, ensuring continuous improvement.

6. Target Group

- **Policymakers:** To support the framework through legislation and funding.
- **VET Providers:** To implement quality assurance practices and engage in continuous improvement.
- **Educational Experts:** To contribute to the development of quality standards and assessment tools.

7. Expected Impact

This recommendation aims to create a robust quality assurance system for vocational education in Bulgaria, ensuring that programs meet the needs of both students and the labor market.

- **Improved Learning Outcomes:** Higher quality VET programs will lead to better student engagement and achievement, increasing their readiness for the job market.
- **Enhanced Reputation of VET:** A focus on quality assurance will elevate the perception of vocational education, attracting more students to VET pathways.
- **Stronger Industry Connections:** Quality improvements will foster trust and collaboration between VET institutions and employers, ensuring that graduates possess relevant skills.
- **Increased Employability:** Graduates from high-quality programs will be better equipped for employment, contributing to lower unemployment rates among youth.

6. National Policy Input Report from Greece (II)

Partner Information

Partner Organisation: Smart Agro Hub

Country: Greece

Policy Recommendation 1

1. Title

Strengthening Practice Based Climate-Resilient Agriculture in Greek VET through Demonstration Farms and Digital Tools

2. Description

Agriculture is evolving rapidly in response to climate change, technological innovation, and new environmental requirements. To prepare learners for this changing reality, VET teachers need regular opportunities to update both their technical knowledge and their digital skills. This recommendation proposes the establishment of a structured Continuous Professional Development (CPD) programme for agricultural VET teachers built around two complementary areas. First, VET teachers should regularly update their knowledge of climate-resilient and climate-smart farming through training developed in cooperation with researchers, agricultural advisers, demonstration farms, and experienced farmers. This would ensure that teaching reflects the latest farming practices, policy developments, and technological innovations. Second, VET teachers should continuously strengthen their digital competences to confidently integrate modern technologies into teaching and learning. Professional development should follow the principles of the European Framework for the Digital Competence of Educators (European Commission, 2017).

Rather than relying on isolated workshops, the programme should establish a regular cycle of professional learning throughout a teacher's career. Annual CPD activities, recognised through nationally recognised certificates or micro-credentials, would encourage lifelong learning while ensuring that educators remain confident in using digital technologies such as precision farming applications, satellite and sensor data, farm management software, digital simulations, and online learning resources. This way teachers will be better equipped to prepare future farmers for a rapidly changing agricultural sector and to support the transition towards more resilient, innovative, and sustainable farming systems.

3. Problem Addressed

- While many educators already use some field-based activities, they report that practical training on effective climate adaptation strategies remains limited and uneven across institutions, with a large share rating provision only at neutral or low levels.
- Educators express widespread dissatisfaction with the availability of up-to-date, locally relevant teaching materials on climate-resilient agriculture, noting that existing resources are often theoretical, fragmented and not adapted to national or Mediterranean conditions.
- The majority of educators identify stronger policy, education and farmer-centred interventions, as well as soil health and carbon management, as top priorities for building climate-resilient agriculture, yet they lack the tools and resources to translate these priorities into day-to-day teaching.
- Learners state very clearly that practical workshops and field visits are the most effective way to learn about climate-smart agriculture; traditional classroom-based courses rank lowest in their preferences. Many complain that their programmes are too theoretical, that schools lack land, equipment and modern tools, and that they have limited exposure to real farms and climate-smart methods.

- Stakeholder organisations, including cooperatives and research institutions, confirm that training in climate-resilient agriculture is still relatively uncommon, and that fragmented cooperation between education, research and farming communities restricts practical exposure to innovative solutions.
- Without a structured, system-level response, these gaps risk leaving future Greek farmers and rural professionals under-prepared for intensifying climate pressures such as drought, heatwaves, water scarcity and emerging pests, which stakeholders already see as significantly affecting productivity.

4. Proposed Solution

The Ministry of Education, Religious Affairs and Sports and the Ministry of Rural Development and Food should jointly establish a national initiative “Climate-Resilient Agriculture Demonstration Hubs” with three interconnected components:

- Network of demonstration farms linked to agricultural VET providers.
 - Designate a first wave of demonstration sites in key agro-climatic zones, such as irrigated plains, semi-arid areas, mountain and island systems, building on existing experimental farms, research stations, cooperative fields and innovative private farms.
 - Conclude cooperation agreements between these Demonstration Hubs and nearby EPAL, IEK and other agricultural VET providers to host regular field visits, seasonal exercises, short internships and small project-based learning activities focused on climate-resilient practices.
 - Ensure that each participating class visits at least one Demonstration Hub per year, with structured learning objectives, observation tasks and follow-up assignments back in the classroom.
- Integration of digital tools for climate teaching and learning.
 - Equip partner schools with a basic package of digital tools, such as simple weather stations, soil moisture probes, handheld or smartphone-based

- measurement devices, access to free satellite imagery platforms and climate data portals, and link these tools to data collected at the Demonstration Hubs.
- Develop Greek-language guidance for educators on how to use these tools in teaching climate adaptation strategies, for example monitoring soil moisture under different irrigation regimes, tracking phenological stages under heat stress, and comparing conventional and regenerative plots.
 - Provide short, practice-oriented professional development sessions for teachers on digital competences in agricultural education, aligned with European frameworks such as DigCompEdu, with a focus on practical applications rather than generic ICT skills.
- Curriculum-embedded practice modules on climate-resilient agriculture.
 - Design short modular units, such as “Water-smart irrigation under drought”, “Soil health and carbon farming in Mediterranean systems”, “Introduction to precision agriculture and digital climate services”, and “Agroforestry and biodiversity for climate resilience”, that combine classroom theory, field-based activities at a Demonstration Hub and digital data analysis.
 - Integrate these modules into existing agricultural VET curricula at EQF levels 3-5 rather than offering them only as optional extras, ensuring that all learners in relevant specialisations are exposed to climate-resilient content and methods.
 - Encourage co-teaching and co-design of modules with farmers, advisors and researchers, so that case studies and examples reflect real local challenges and solutions.

5. Overview of Implementation

- Design and piloting (Year 1): establish a joint steering group, select 5-7 pilot regions with diverse farming systems and climate risks, identify suitable Demonstration Hubs and partner VET institutions, and co-design the first set of curriculum-

embedded modules and field activities drawing on WP2 findings, WP3 training and WP4 expert insights.

- Teacher preparation and resource development (Year 1-2): offer focused CPD programmes or micro-credentials to participating teachers, combining online input with visits to Demonstration Hubs and peer learning, and develop reusable teaching materials in Greek, including lesson plans, worksheets, simple data sets and short explanatory videos.
- Roll-out and scaling (Year 2-4): gradually expand the Demonstration Hub network to additional regions, prioritising areas with high climate stress and strong agricultural employment, and invite more EPAL and IEK to integrate at least one climate-resilient practice module per year into each agricultural specialisation.
- Monitoring, evaluation and continuous improvement: define simple indicators, such as the number of schools and students involved, field visits per cohort, teacher CPD participation, use of digital tools in lessons and learner confidence in applying climate adaptation strategies, and use feedback to refine modules, tools and teaching approaches.

6. Target Group

The primary target group is teachers and learners in agricultural VET institutions in Greece, including EPAL, IEK and specialised agricultural schools and training centres, who need structured access to climate-resilient practices, demonstration sites and digital tools to update their skills and teaching approaches.

A second important target group consists of demonstration farms, cooperatives, advisory services, research organisations and local authorities, together with national and regional policymakers in education and agriculture, who are responsible for enabling and sustaining cooperation, allocating funding and embedding the Demonstration Hub model within longer-term VET and rural development strategies.

7. Expected Impact

- Learners gain significantly more hands-on experience with climate-resilient practices and technologies, closing the current gap between theory-heavy curricula and practical skills needs.
- Educators have access to structured, up-to-date, context-specific materials, field facilities and digital tools, reducing dissatisfaction with teaching resources and strengthening their confidence in teaching climate topics.
- Stakeholders see VET as a more relevant partner for local climate adaptation efforts, improving cooperation between schools, cooperatives, research institutes and advisory services.
- Over time, a growing share of Greek agricultural VET graduates will be able to design and implement practical adaptation strategies on farms, supporting national climate goals and the resilience of rural communities.

Policy Recommendation 2

1. Title

A Guided Transition Pathway from Agricultural VET to Climate-Resilient Farming Careers in Greece

2. Description

Many Greek agricultural VET learners express strong interest in climate-resilient farming but remain uncertain about their future in the sector, and those who do aspire to agricultural careers often lack structured guidance, mentoring and clear information about available support schemes and upskilling opportunities. This recommendation proposes a “Guided Transition Pathway” that connects the final phase of VET studies

with the first years after graduation, supporting young people as they move into farming, advisory roles or other rural professions.

The pathway would combine a compulsory final-year module on climate-resilient career options and support instruments, a voluntary mentoring and peer-learning scheme linking graduates with experienced practitioners, and accessible micro-credentials and short courses in high-demand climate-resilient skills. In this way, climate-relevant knowledge and motivation developed during VET would have a much higher chance of being converted into real-world practice, rather than being lost at the point of transition to the labour market.

3. Problem Addressed

In Greece, the pipeline of new entrants into agriculture is fragile. Only about one third of agricultural learners see themselves clearly working in a rural area or in farming in the future, while a similar share state that they do not plan to pursue such a career and many remain undecided. At the same time, more than half of learners report that they had not received structured teaching on the climate crisis and its impact on agriculture before their current studies, and a significant proportion still feel that their programmes do not provide enough understanding of climate change impacts or the practical skills needed to address them.

Learners' confidence is further undermined by doubts about the preparedness of their trainers. Many students question whether teachers are sufficiently qualified to cover climate-related topics, which weakens their belief that current VET provision can prepare them for real climate challenges on farms. In their qualitative comments, students consistently ask for more field trips, farm workshops, contact with external experts and hands-on work with modern tools such as sensors, drones and renewable energy systems, yet they describe these opportunities as limited and unevenly distributed between institutions. Stakeholder organisations echo these concerns by

highlighting persistent knowledge gaps, low digital skills among farmers and advisors, and restricted access to finance and advisory support as major obstacles to the uptake of climate-smart practices; they also stress that mentoring, professional networks and continuous learning after graduation are largely missing from the current landscape.

Without a structured transition mechanism that links the end of VET studies to early career guidance, mentoring and targeted upskilling, many motivated graduates may either leave the agricultural sector or struggle to implement climate-resilient practices effectively. This would slow down both generational renewal and climate adaptation efforts in Greek agriculture at a time when climate pressures on farms are intensifying.

4. Proposed Solution

The Ministry of Education, Religious Affairs and Sports, the Ministry of Rural Development and Food and the Public Employment Service should jointly develop a Climate-Resilient Agriculture Transition Pathway with three main components:

- **Final-year Career and Support Awareness Module:** introduce a short, compulsory module during the final semester of agricultural programmes at EPAL and IEK covering career pathways in climate-resilient agriculture, national and CAP-related support schemes for young and new farmers, and basic steps for preparing a climate-smart farm or business plan.
- **Mentoring and Peer-Learning Network for Recent Graduates:** establish a voluntary mentoring scheme where final-year students and recent graduates can be matched with experienced farmers, advisors, cooperative managers or other rural professionals for at least 12 months, using a simple learning agreement and links to Demonstration Hubs.
- **Accessible Micro-Credentials and Short Courses for Early-Career Upskilling:** develop short, stackable certificates in priority areas such as precision agriculture, smart technologies, drought-resilient crops and varieties, water management and

conservation, soil health, regenerative practices, on-farm renewable energy and climate-risk management with basic farm economics.

5. Overview of Implementation

- Design and coordination (Year 1): set up a national working group involving VET providers, the CAP Managing Authority, advisory services, cooperatives, youth organisations and learner representatives to co-design the pathway, aligned with Greece's CAP Strategic Plan, and map existing guidance, mentoring and training offers.
- Piloting in selected regions (Year 1-2): pilot the final-year Career and Support Awareness Module in EPAL and IEK with agricultural specialisations, launch the mentoring network in 2-3 regions with strong agricultural activity and climate exposure, and test 2-3 micro-credentials in high-priority topics such as precision agriculture, water-smart irrigation and regenerative practices.
- Scaling and integration (Year 3 onwards): integrate the final-year module into national VET curricula for agricultural specialisations, expand mentoring to additional regions and connect it with Demonstration Hubs and advisory services, broaden the portfolio of micro-credentials and short courses, and monitor graduate entry into agricultural employment, mentoring participation, upskilling participation and adoption of climate-resilient practices.

6. Target Group

The primary target group is agricultural VET students in their final years of study and recent graduates in Greece, who are deciding whether to enter agricultural and rural careers and who need clearer guidance, mentoring and learning opportunities focused on climate-resilient farming pathways.

A second key target group includes agricultural VET providers, farm advisors, cooperatives, demonstration farms and rural enterprises, as well as national and

regional authorities managing CAP support, youth employment and VET curricula, who can host mentoring, offer early-career learning and align policies and funding with the proposed transition pathway.

7. Expected Impact

- A larger share of agricultural VET graduates choose careers in climate-relevant roles within the agricultural and rural sectors, helping to address ageing and skills shortages in Greek farming.
- Young professionals start their careers with clearer information about available support schemes, concrete planning skills and access to experienced mentors, rather than facing financial, technical and climate uncertainties alone.
- Climate-resilient practices learned during VET are translated more consistently into real-world behaviour on farms, in cooperatives and in rural businesses, strengthening the link between education, policy instruments and on-farm change.
- Flexible micro-credentials and short courses help early-career farmers and rural workers to keep their skills up to date as climate challenges and technologies evolve, contributing to a more resilient, innovative and adaptive agricultural sector in Greece.

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