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FARM
FORWARD

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

WP2

Needs Analysis Report

Analysis of responses to questionnaires for
Educators, Learners, Stakeholders, and Focus Groups for Farmers
(Bulgaria, Greece, Lithuania, Poland, Slovenia)

Project Partners

QUALIFICATIONS AND VOCATIONAL EDUCATION AND TRAINING DEVELOPMENT CENTRE

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ВЪРШЕН ХИМБЕРСКЕЛ-ЛЮБЛЯНА • ВИЛЬНЮССКИЙ АГРАРНЫЙ УНИВЕРСИТЕТ

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

(2024-1-LT01-KA220-VET-000248582)

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Table of Contents

Introduction

"FarmForward" is an Erasmus+ project in the vocational education and training sector that will enable the agricultural community—especially agricultural educators and future/current farmers—to actively engage in climate-resilient agricultural practices.

The objectives of the FarmForward project:

- To raise awareness of challenges of agriculture stakeholders, in particular farmers who are facing the increasingly evident impacts of climate change.
- To enhance the capabilities of agricultural trainers, empowering them to effectively educate about climate change and resilience agricultural strategies.
- To motivate agriculture professionals and stakeholders to seek innovative solutions and adopt efficient farming practices for climate change mitigation.

As part of the project's WP2 activity „Needs Assessment and Capacity Building in Climate Resilient Farming", four special studies were conducted in order to gather insights and opinions on adaptation to the climate crisis and sustainable agricultural practices. The study involved four main groups within the agricultural education and training ecosystem:

1. **Educators** (teachers, lecturers, VET providers).
2. **Learners** (students of agriculture and trainees).
3. **Stakeholders** (representatives of agricultural associations, cooperatives, research institutions and public bodies).
4. **Farmers**.

The aim of these studies was to assess the current knowledge level of the target groups, identify gaps, and collect feedback on the needs, priorities, and challenges related to climate-resilient agriculture.

Each target group received a specially designed questionnaire consisting of quantitative (e.g., Likert scale) and qualitative (open-ended) questions. The questions covered the following topics:

- Current educational and institutional capacities.
- Awareness of climate impact on farming.
- Resources and training needs.
- Priorities of learning or information delivery formats.
- Perceived barriers and opportunities.

The questionnaires are provided in the following annexes:

- **1 annex** – Survey for Educators (Trainers, VET providers).
- **2 annex** – Survey for Learners.
- **3 annex** – Survey for Stakeholders.
- **4 annex** – Questions for Farmers (focus group).

The following sections present a detailed analysis of each questionnaire, summarized responses, and key insights, organized by questions raised.

1. Results of Educators' (Trainers, VET Providers) Survey

Q1. Distribution of educators according to the country

Bulgaria: 34 participants

Greece: 40 participants

Lithuania: 26 participants

Poland: 35 participants

Slovenia: 20 participants

A total of 155 educators from five partner countries participated in the survey.

Q2. Primary role in education

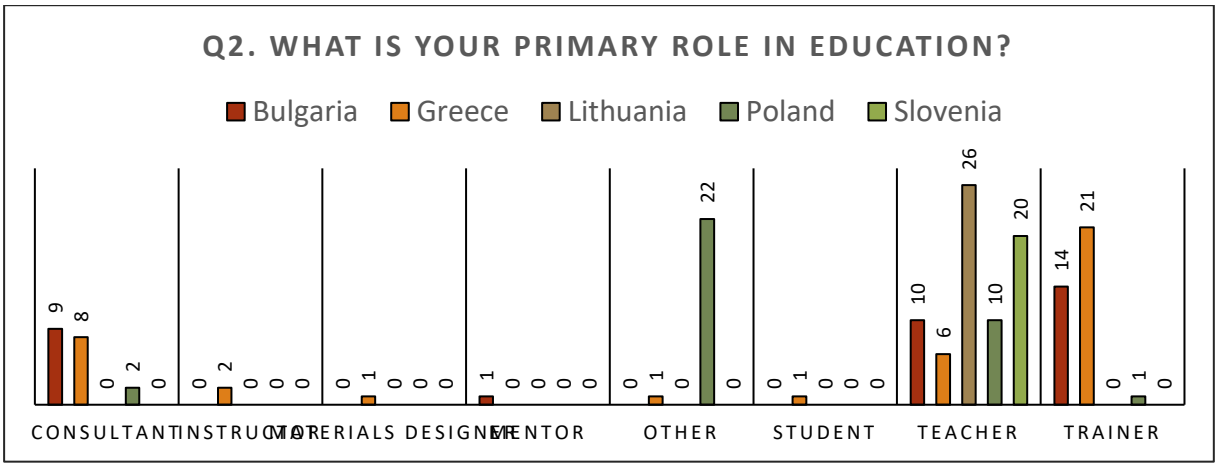

Fig. 1. Distribution of responses regarding the primary role in education

Bulgaria: The majority of participants are trainers (41.2%) and teachers (29.4%), with a considerable share of consultants (26.5%).

Greece: The majority of participants are trainers (52.5%) and consultants (20%), while other roles are more evenly distributed.

Lithuania: All respondents are VET teachers (100%).

Poland: The vast majority are classified as “Other” (62.9%), with teachers (28.6%) and a small proportion of consultants (5.7%).

Slovenia: All respondents are teachers (100%).

Overall, teachers and trainers constitute the largest share of respondents across all countries, while representatives of other roles are considerably fewer.

Q3. Experience in agricultural education/training

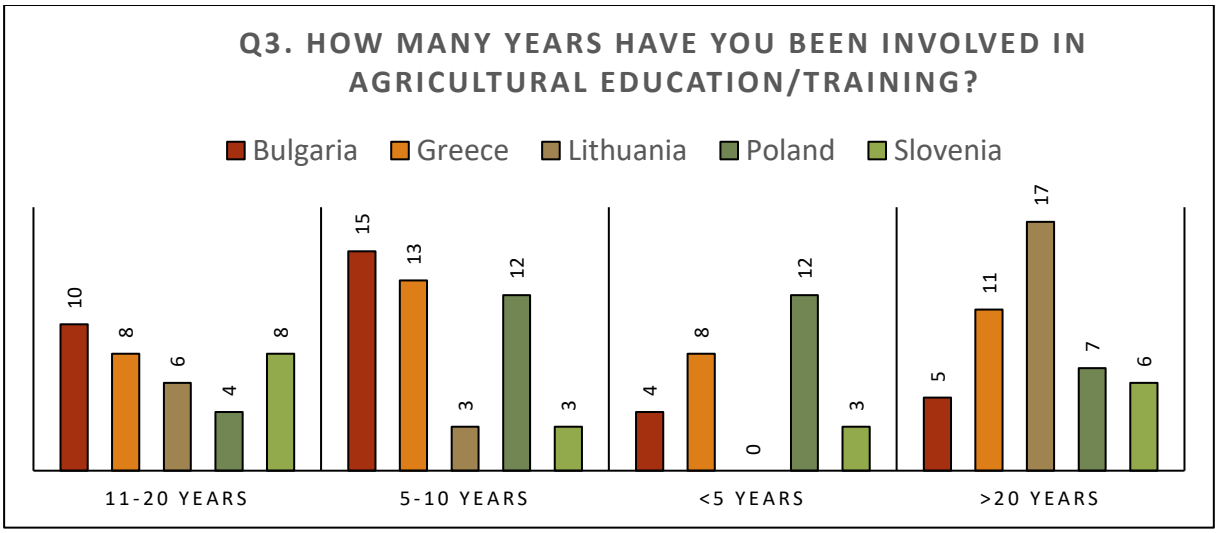

Fig. 2. Distribution of responses regarding the experience in agricultural education/training

Bulgaria: The majority of respondents have 5–10 years of experience (44.1%), followed by those with 11–20 years of experience (29.4%).

Greece: The main groups are participants with 5–10 years (32.5%) and >20 years (27.5%) of experience, with a significant proportion having <5 years (20%) of experience.

Lithuania: The majority of respondents have >20 years of experience (65.4%), while a smaller proportion have 11–20 years (23.1%) of experience.

Poland: Similar proportions of respondents have 5–10 years (34.3%) and <5 years (34.3%) of experience.

Slovenia: The largest group has 11–20 years of experience (40%), followed by those with >20 years (30%).

Overall, across all respondents, the most common experience groups are 5–10 years and >20 years, while the least represented are educators with <5 years of experience.

Q4. Have you received training in climate crisis adaptation/mitigation related to agriculture?

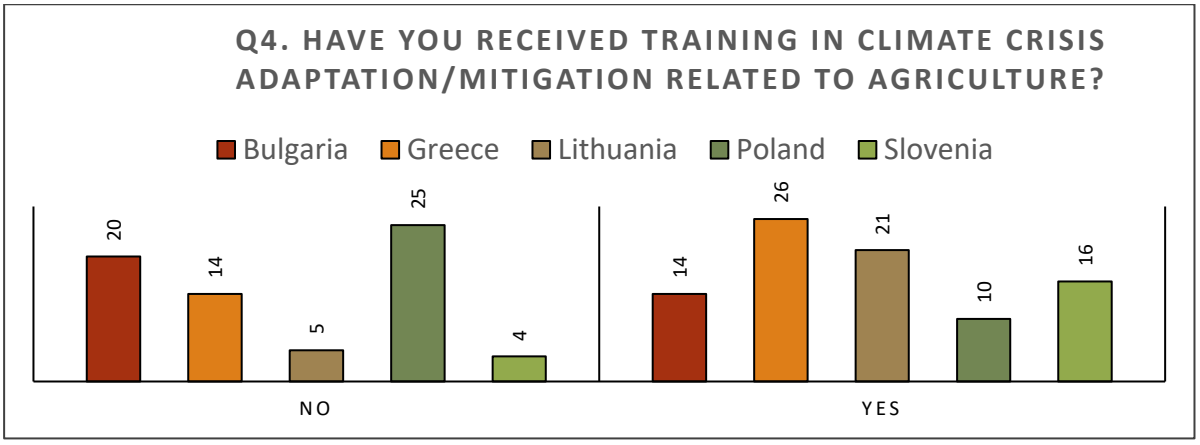

Fig. 3. Distribution of responses regarding the training in climate crisis adaptation/mitigation.

Bulgaria: More than half of the respondents (58.8%) have not received such training, while 41.2% have.

Greece: The majority of participants (65%) have received training.

Lithuania: The vast majority (80.8%) have received training, with only 19.2% not having received it.

Poland: The majority (71.4%) have not received training.

Slovenia: 80% of respondents have received training.

Overall, more than half (56.1%) of all respondents have received training on adapting to the climate crisis and mitigating its impact on agriculture, while 43.9% have not received such training.

Q5. What type of educational institution do you work for?

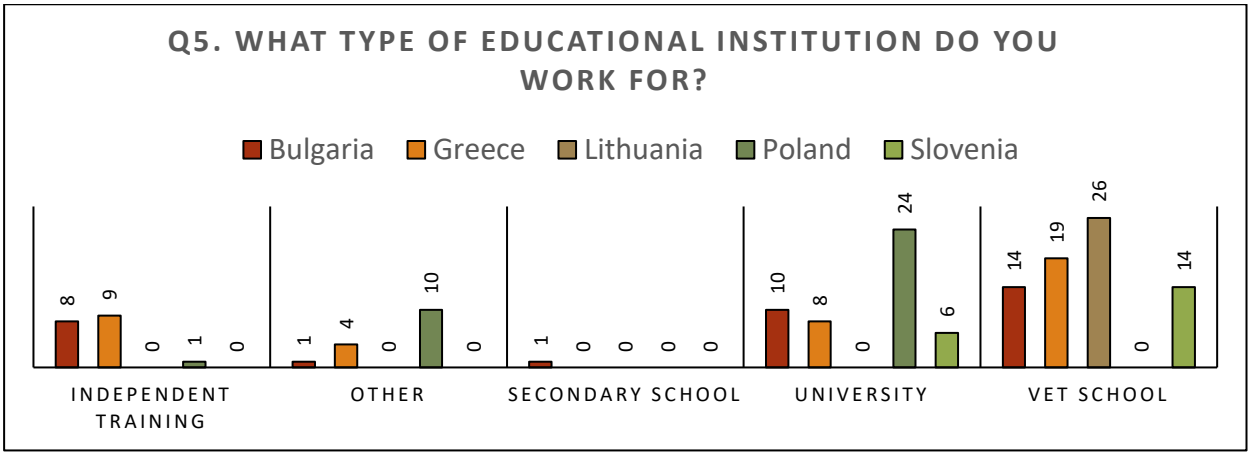

Fig. 4. Distribution of responses regarding the type of educational institution.

Bulgaria: Most respondents work in VET schools (41.2%) and universities (29.4%), with a significant proportion also working in independent training (23.5%).

Greece: Similar to Bulgaria, most participants work in VET schools (47.5%) and independent training (22.5%), with some working in universities (20%).

Lithuania: All respondents work in VET schools (100%).

Poland: The vast majority work in universities (68.6%), with a portion classified as "Other" (28.6%).

Slovenia: Most respondents work in VET schools (70%) and universities (30%).

Overall, respondents most commonly work in VET schools (47.1%) or universities (31%), while representatives of other types of institutions are considerably fewer.

Q6. Training format(s) you mostly use

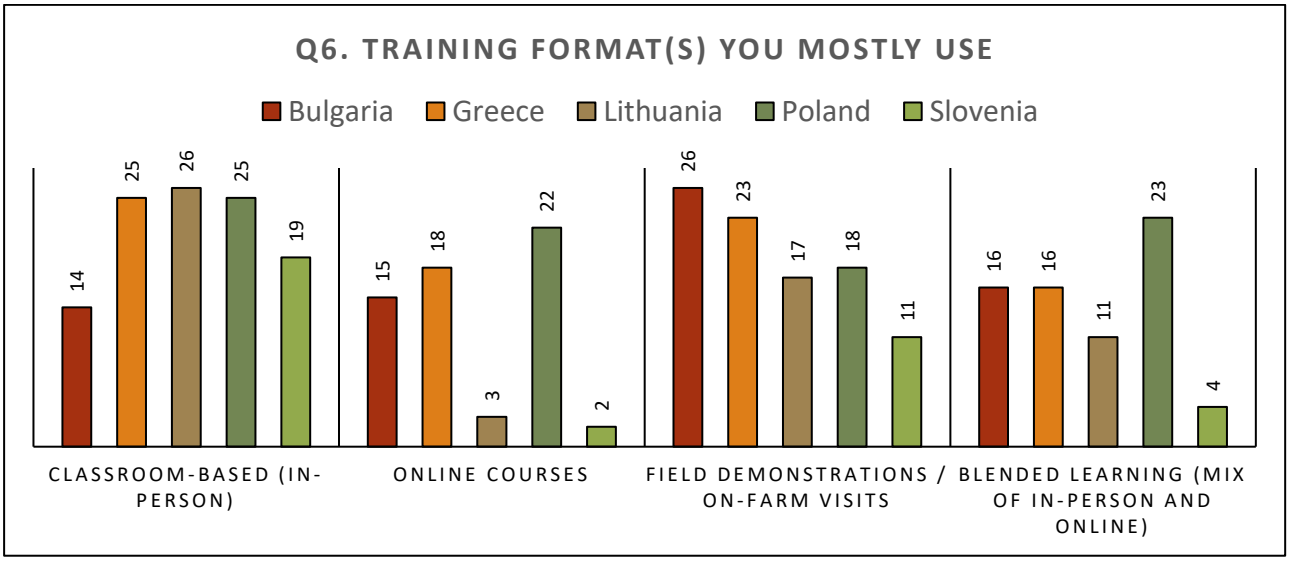

Fig. 5. Distribution of responses regarding the training format(s).

Bulgaria: The most popular format is field demonstrations / on-farm visits (36.6%), with a significant proportion participating in classroom-based training (19.7%), online courses (21.1%), and blended learning (22.5%).

Greece: The most commonly used format is classroom-based training (30.5%), followed by field demonstrations / on-farm visits (28%) and online courses (22%).

Lithuania: Classroom-based training clearly dominates (45.6%), while other formats are used less frequently – field demonstrations / on-farm visits (29.8%), blended learning (19.3%), and online courses (5.3%).

Poland: Training formats are fairly evenly distributed among classroom-based (28.4%), online courses (25%), and blended learning (26.1%).

Slovenia: Most respondents prefer classroom-based training (52.8%), with participation also in field demonstrations / on-farm visits (30.6%).

Overall, across all countries, the most commonly used formats are classroom-based (32.6%) and field demonstrations (28.4%), while blended learning and online courses are less frequent but still significant.

Questions Q7–Q20 are rated on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The minimum, maximum, and mean (average) values for each question are shown below.

Q7. Agricultural training programs adequately cover sustainable farming practices and address climate resilience

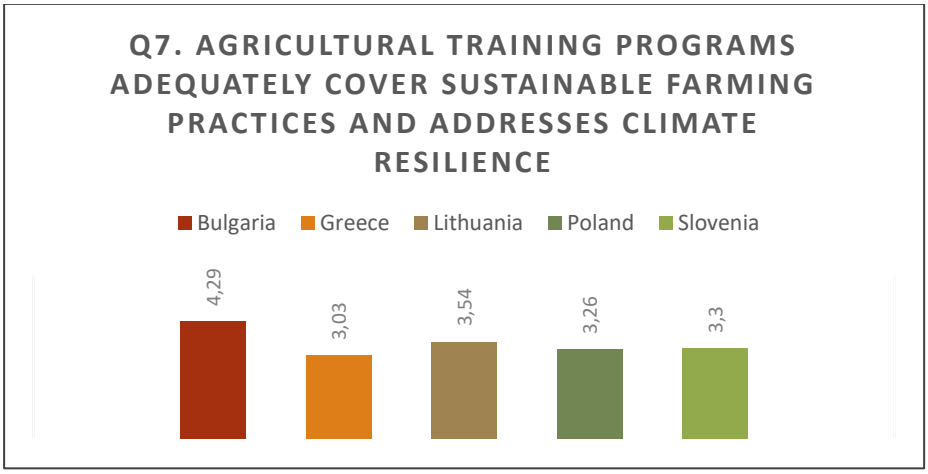

Fig. 6. Distribution of responses regarding agricultural training programs.

Highest rating: Bulgaria – 4.29

Lowest rating: Greece – 3.03

Average rating: 3.48

Conclusion: The overall rating is fairly high, but it varies between countries – respondents from Bulgaria rate program coverage of sustainable farming practices considerably higher than respondents from Greece.

Q8. Climate crisis education is a key part of my curriculum/training programs

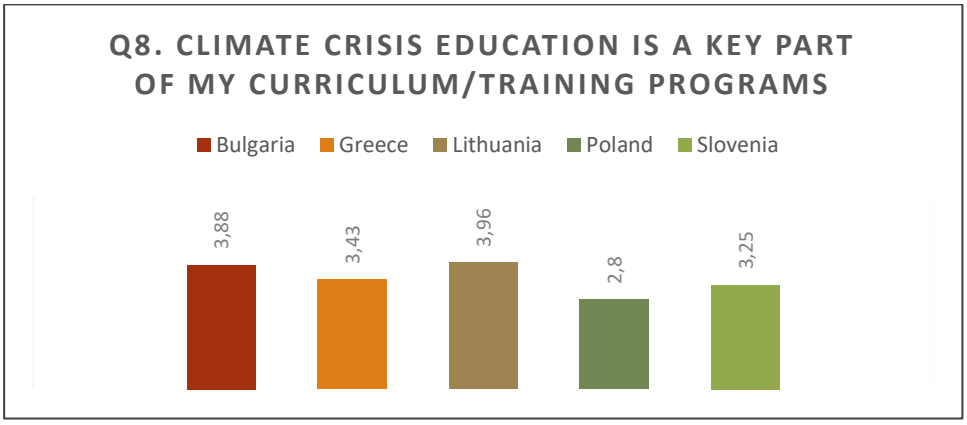

Fig. 7. Distribution of responses regarding a key part of training programs.

Highest rating: Lithuania – 3.96

Lowest rating: Poland – 2.80

Average rating: 3.45

Conclusion: The responses indicate that the integration of the climate crisis into teaching programs is most advanced in Lithuania and Bulgaria and least advanced in Poland.

Q9. I feel confident in teaching about climate crisis and its impact on agriculture

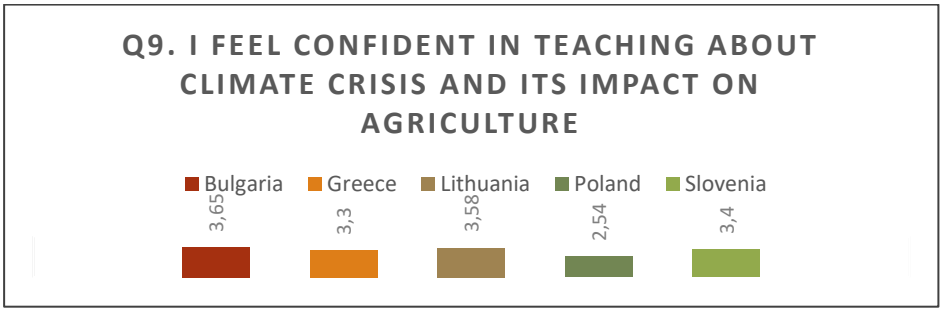

Fig. 8. Distribution of responses regarding confidentiality in teaching about climate crisis.

Highest rating: Bulgaria – 3.65

Lowest rating: Poland – 2.54

Average rating: 3.26

Conclusion: Respondents rate their preparedness for teaching about climate change impacts on agriculture as moderate; it should be noted that the rating in Poland is significantly lower than in the other countries.

Q10. There are sufficient teaching materials available to support climate education in agriculture

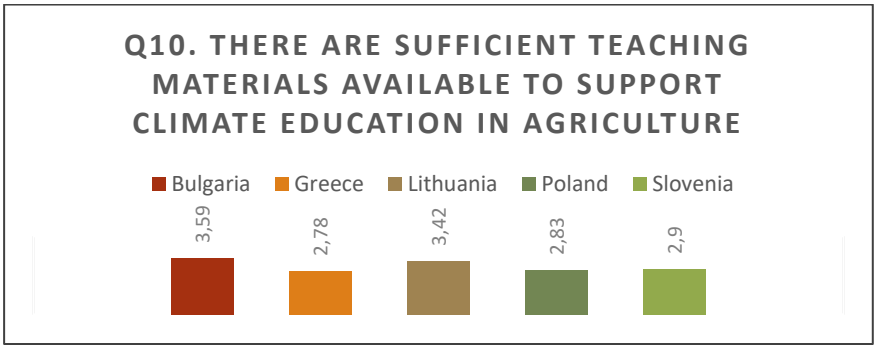

Fig. 9. Distribution of responses regarding sufficiency of teaching materials.

Highest rating: Bulgaria – 3.59

Lowest rating: Greece – 2.78

Average: 3.09

Conclusion: The availability of teaching materials on the impact of climate change on agriculture is rated as moderate, with relatively low ratings in Greece.

Q11. I collaborate with farmers and industry stakeholders to understand real-world agricultural challenges

Fig. 10. Distribution of responses regarding the collaboration with farmers and industry.

Highest rating: Bulgaria – 4.15

Lowest rating: Poland – 3.23

Average rating: 3.59

Conclusion: The average rating for this statement is the highest compared to the responses to other questions in the questionnaire, indicating that, in the opinion of educators in the countries participating in the project, there is strong practical cooperation between educators, farmers, and industry stakeholders, which allows them to understand existing challenges in agriculture and take them into account in the teaching process.

Q12. My institution provides adequate support for professional development on climate-related topics

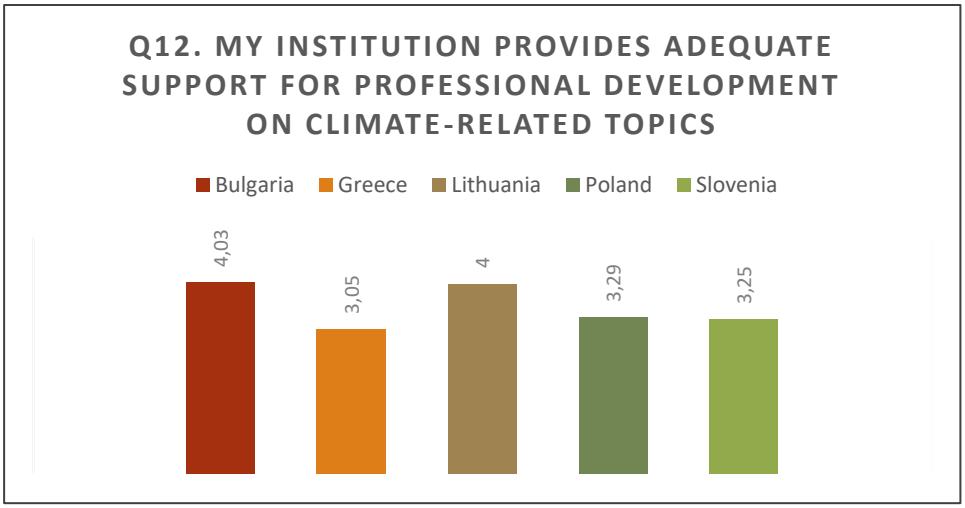

Fig. 11. Distribution of responses regarding the support.

Highest rating: Bulgaria – 4.05

Lowest rating: Greece – 3.05

Average rating: 3.50

Conclusion: Institutional support for professional development on climate-related topics is rated very highly in Bulgaria and Lithuania, while in other countries the rating is lower.

Q13. Learners show a strong interest in sustainable farming and climate resilience

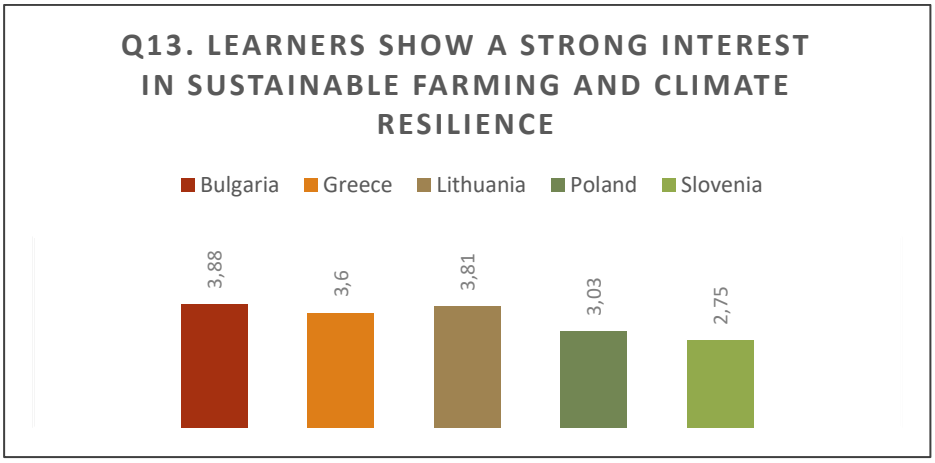

Fig. 12. Distribution of responses regarding the interest in sustainable farming.

Highest rating: Bulgaria – 3.88

Lowest rating: Slovenia – 2.75

Average rating: 3.46

Conclusion: Overall, educators generally rate students' interest in sustainable farming and climate resilience as high, especially in Bulgaria and Lithuania, indicating that this is indeed a relevant topic in agriculture, although the rating is lower in Slovenia.

Q14. Government policies support the integration of climate crisis topics into agricultural education

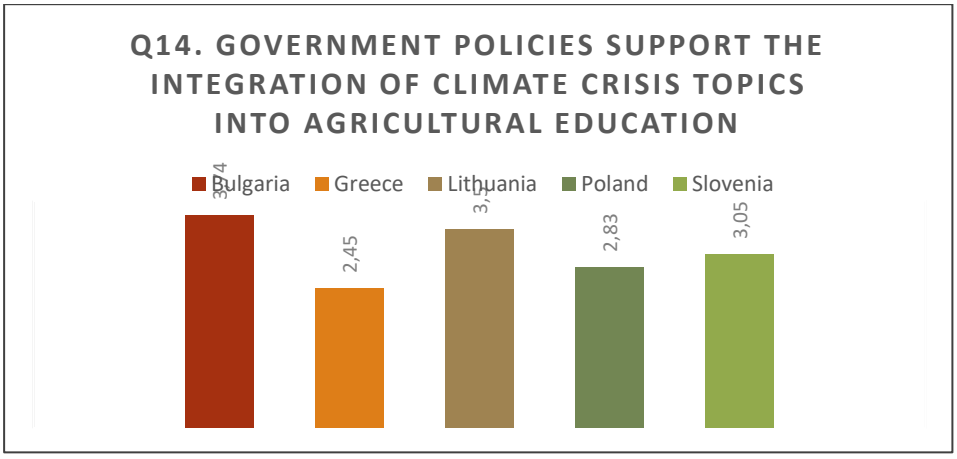

Fig. 13. Distribution of responses regarding the government policies.

Highest rating: Bulgaria – 3.74

Lowest rating: Greece – 2.45

Average rating: 3.07

Conclusion: The support provided by government policies for the integration of climate crisis topics into agricultural education is rated lower than for other topics, with particularly critical evaluations in Greece.

Q15. There is enough practical, hands-on training to teach effective climate adaptation strategies

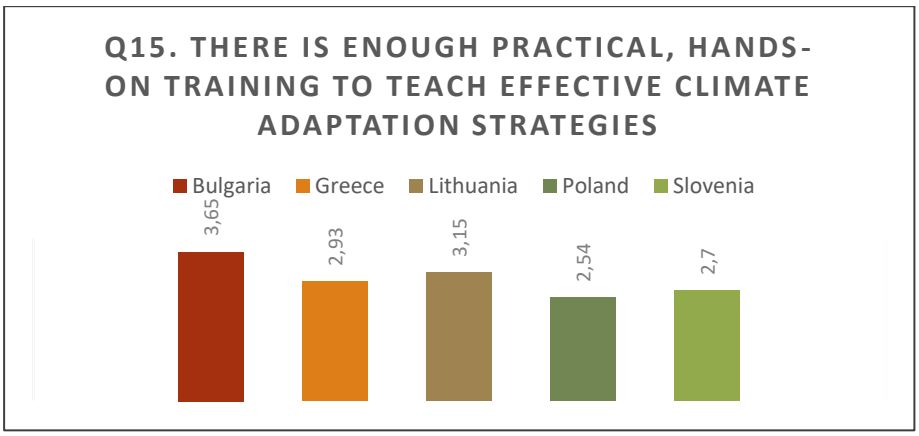

Fig. 14. Distribution of responses regarding the practical training.

Highest rating: Bulgaria – 3.65

Lowest rating: Poland – 2.54

Average rating: 3.01 (lowest overall average)

Conclusion: The lack of practical training on effective climate adaptation strategies in agriculture is a common challenge across all countries.

Q16. On-farm demonstrations or field visits to showcase climate-smart practices are an important part of my training

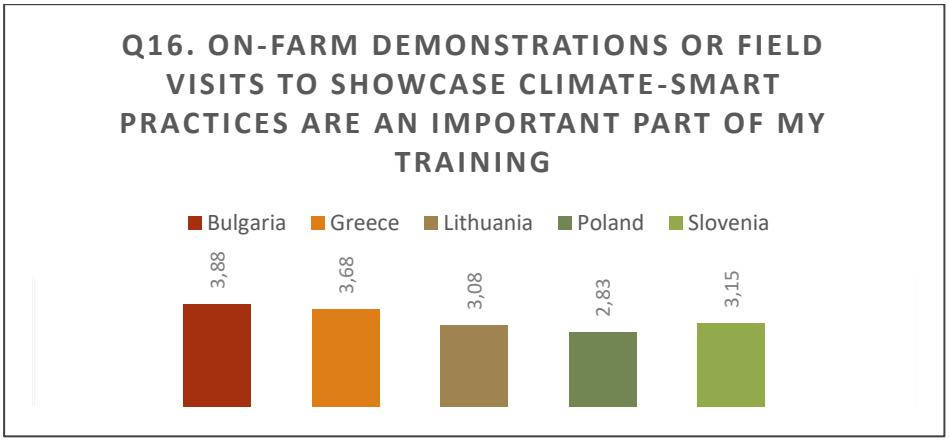

Fig. 15. Distribution of responses regarding the on-farm demonstrations.

Highest rating: Bulgaria – 3.88

Lowest rating: Poland – 2.83

Average rating: 3.32

Conclusion: Attitudes towards practical demonstrations or field visits vary quite a lot, with Bulgaria placing greater emphasis on them, while Poland integrates them less into training programs.

Q17. I assess participants' understanding of climate crisis and sustainable practices before designing my training modules

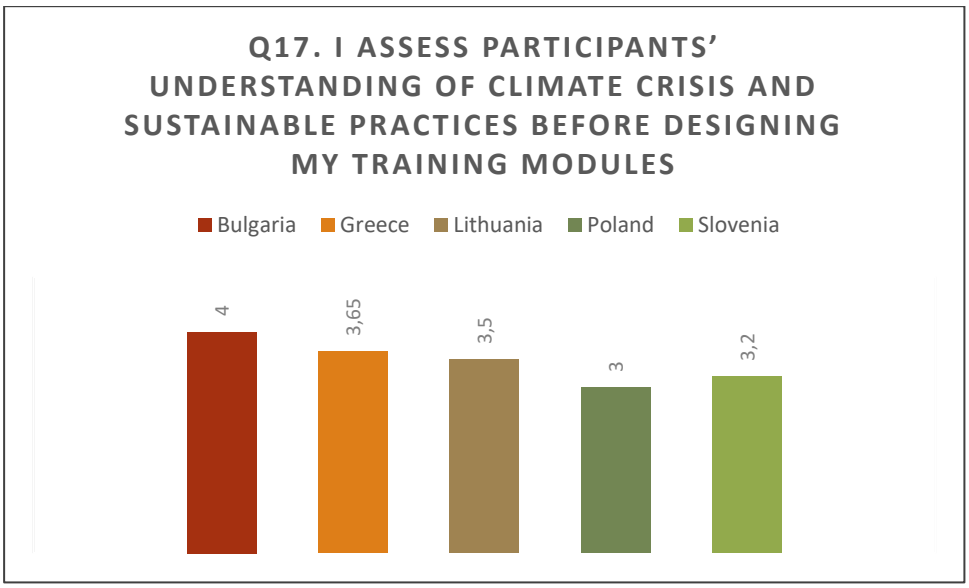

Fig. 16. Distribution of responses regarding the assessment of participants' understanding.

Highest rating: Bulgaria – 4.00

Lowest rating: Poland – 3.00

Average rating: 3.50

Conclusion: Assessing participants knowledge of climate crisis and sustainable practices prior to training is a fairly common practice, especially in Bulgaria.

Q18. I frequently engage with local, national or international agricultural bodies to update my training content on climate resilience

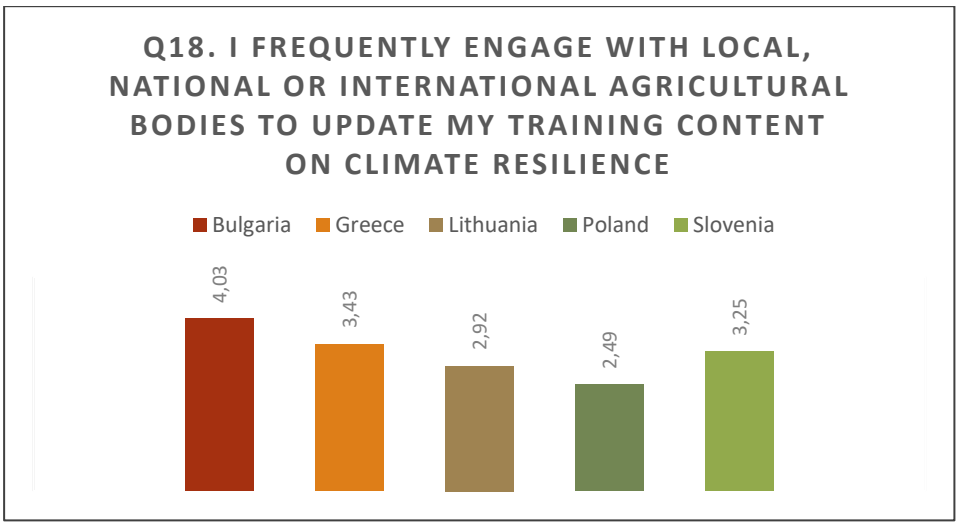

Fig. 17. Distribution of responses regarding the engagement in updating training content.

Highest rating: Bulgaria – 4.03

Lowest rating: Poland – 2.49

Average rating: 3.24

Conclusion: The level of cooperation with local, national or international agricultural bodies varies considerably, ranging from very high in Bulgaria to low in Poland.

Q19. I use digital platforms or technologies (e.g., satellite data, precision farming apps) to illustrate climate crisis impacts or adaptation strategies

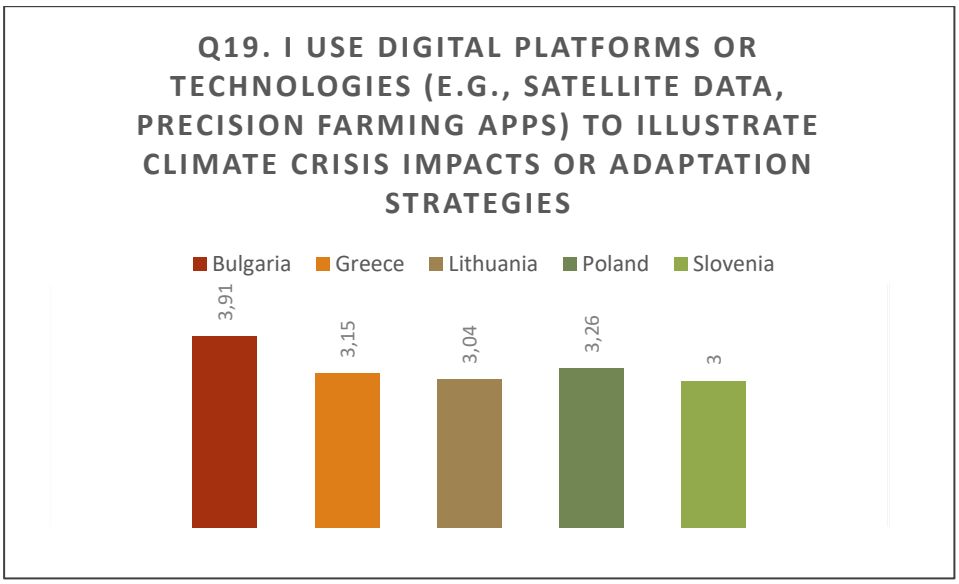

Fig. 18. Distribution of responses regarding usage of digital instruments.

Highest rating: Bulgaria – 3.91

Lowest rating: Slovenia – 3.00

Average rating: 3.27

Conclusion: The use of digital tools varies greatly between countries, with Slovenia having the lowest score.

Q20. I am aware of policy incentives or grants that encourage farmers to adopt climate-smart practices

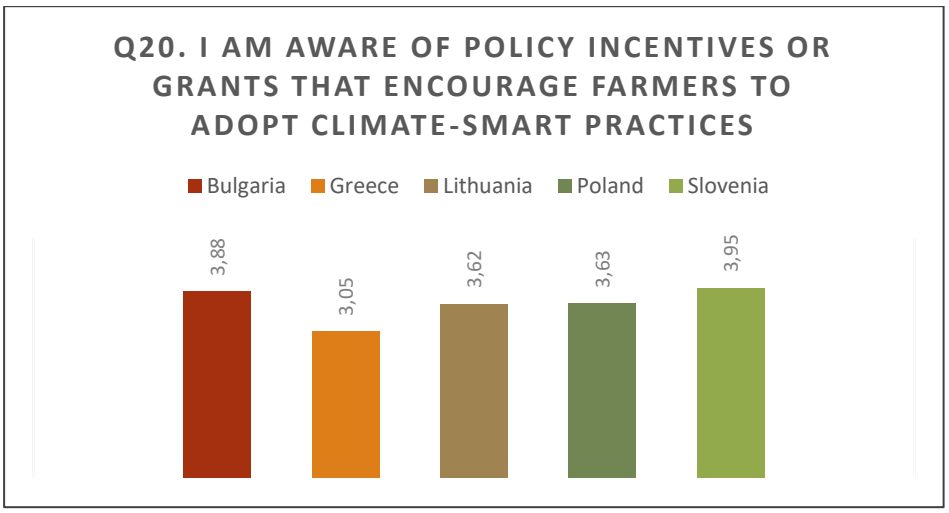

Fig. 19. Distribution of responses regarding the awareness of policy incentives.

Highest rating: Slovenia – 3.95

Lowest rating: Greece – 3.05

Average rating: 3.57

Conclusion: Awareness of policy incentives or grants that encourage farmers to adopt climate-smart practices is relatively high, particularly in Slovenia. General trends in responses to questions Q7–Q20

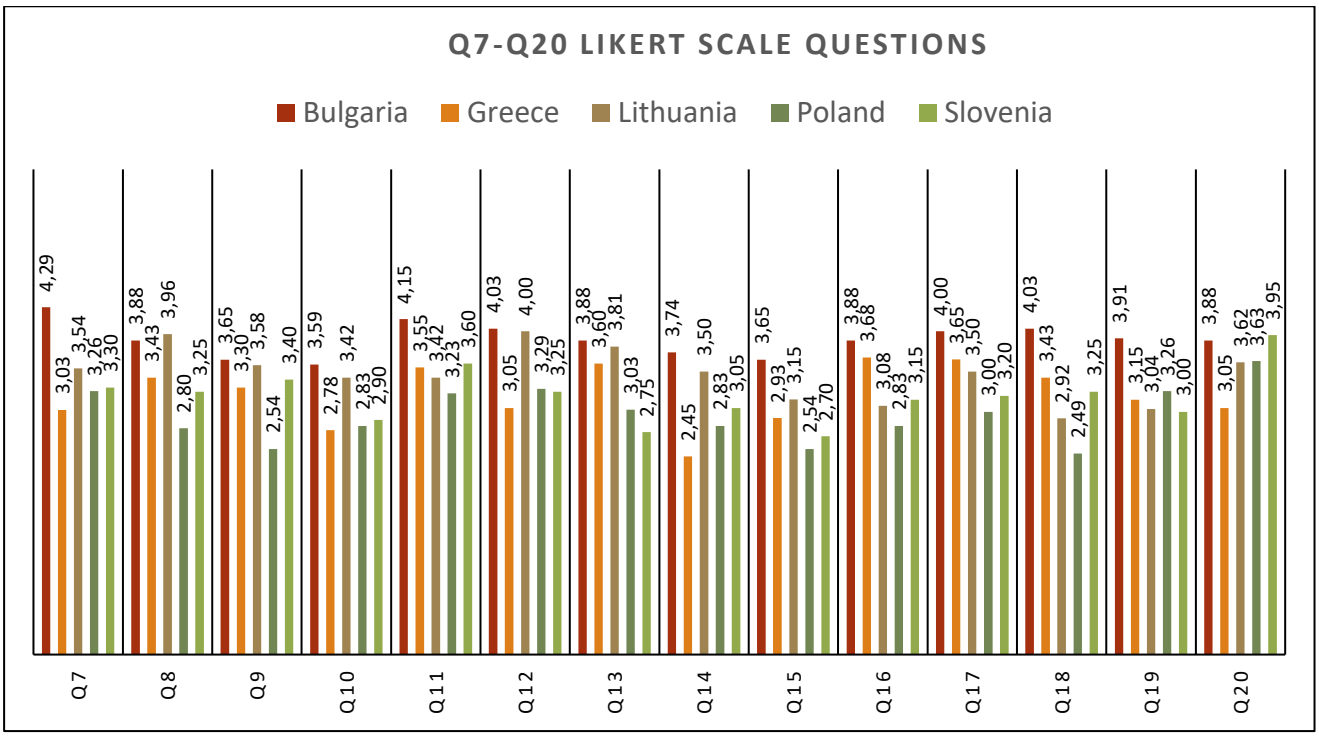

Fig. 20. Distribution of responses according to Likert scale questions.

The highest overall average is Q11 (3.59), indicating strong collaboration with industry representatives.

The lowest overall average is Q15 (3.01), indicating a lack of practical training on effective climate adaptation strategies in agriculture.

Bulgaria often receives the highest ratings, particularly in the areas of practical collaboration, resources, and knowledge assessment.

Educators in Poland and Greece generally provide lower ratings than those in other countries across most questions.

The overall average for most questionnaire items ranges between 3.0 and 3.6, reflecting a moderately positive assessment, but with room for improvement.

Q21. The most important aspects that need to be addressed more closely when it comes to climate-resilient agriculture with less negative environmental impacts

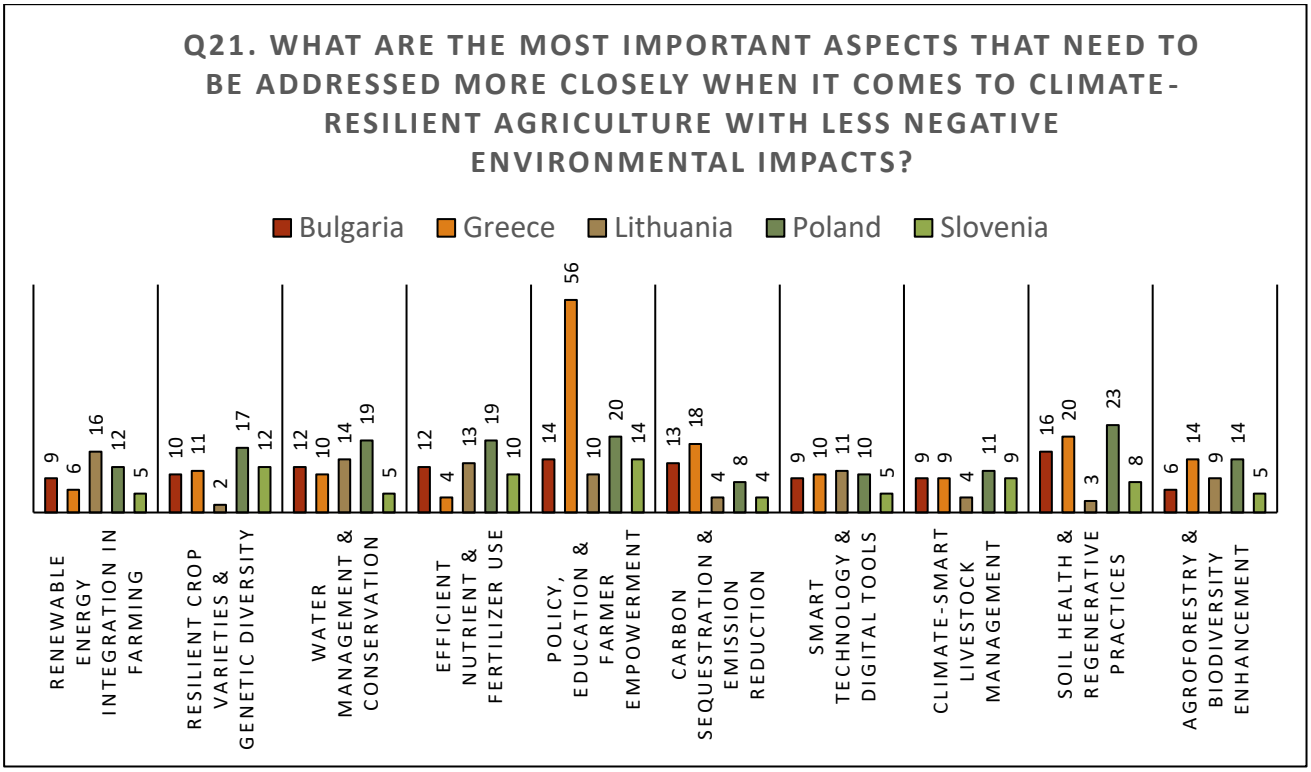

Fig. 21. Distribution of responses regarding the most important aspects.

Bulgaria: Soil health & regenerative practices (14.5%) and Policy, education & farmer empowerment (12.7%) are the most frequently mentioned.

Greece: Policy, education & farmer empowerment (35.4%) stands out prominently, while other aspects are considerably less emphasized.

Lithuania: The focus is primarily on Renewable energy integration in farming (18.6%) and Water management & conservation (16.3%).

Poland: Soil health & regenerative practices (15%) and Resilient crop varieties & genetic diversity (11.1%) are most frequently mentioned.

Slovenia: Policy, education & farmer empowerment (18.2%) and Resilient crop varieties & genetic diversity (15.6%) are the most frequently highlighted aspects.

Conclusion:

Across all countries, Policy, education & farmer empowerment (19.5%) and Soil health & regenerative practices (12%) are the most emphasized.

The least mentioned aspects are Climate-smart livestock management (7.2%) and Smart technology & digital tools (7.7%).

Different countries prioritize different areas: Greece – Policy, education & farmer empowerment; Lithuania – Renewable energy integration in farming; Poland – Soil health & Resilient crop varieties & genetic diversity.

Q22. Areas in which teachers would you like more in-depth training

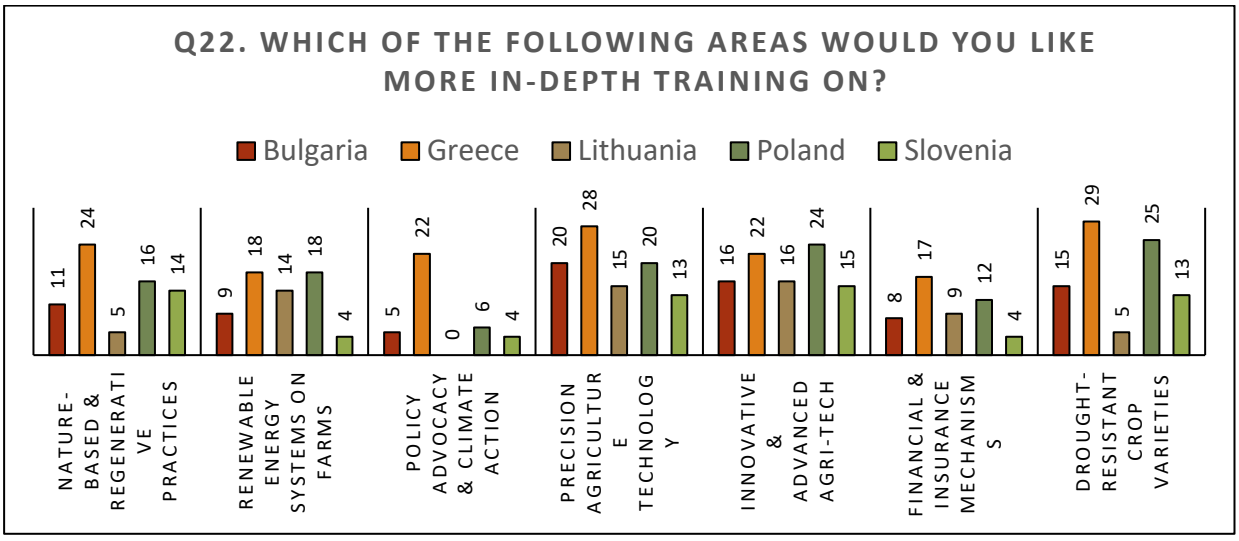

Fig. 22. Distribution of responses regarding the in-depth training.

Bulgaria: The most requested training topics are precision agriculture technology (23.8%) and innovative and advanced agri-tech (19%), as well as drought-resistant crop varieties (17.9%).

Greece: The greatest interest is in drought-resistant crop varieties (18.1%), precision agriculture technology (17.5%) and nature-based and regenerative practices (15%).

Lithuania: Innovative and advanced agriculture technology (25%) and precision agriculture technology (23.4%) are the leading topics, followed by strong interest in renewable energy systems on farms (21.9%).

Poland: The most popular training areas are drought-resistant crop varieties (20.7%), innovative and advanced agriculture technology (19.8%) and precision agriculture technology (16.5%).

Slovenia: Innovative and advanced agriculture technology leads (22.4%), with drought-resistant crop varieties and precision agriculture technology equally popular (19.4% each).

Conclusion:

Overall, training on precision agriculture technology (19.4%) and innovative and advanced agriculture technology (18.8%) is most in demand.

The least interest was observed in policy advocacy and climate action (7.5%) and financial and insurance mechanisms (10.1%).

Technological topics—precision agriculture and innovative agriculture technology — clearly dominate across all countries, while socio-political themes receive significantly less attention.

Q23. Additional resources which would most enhance ability to teach climate-smart agriculture

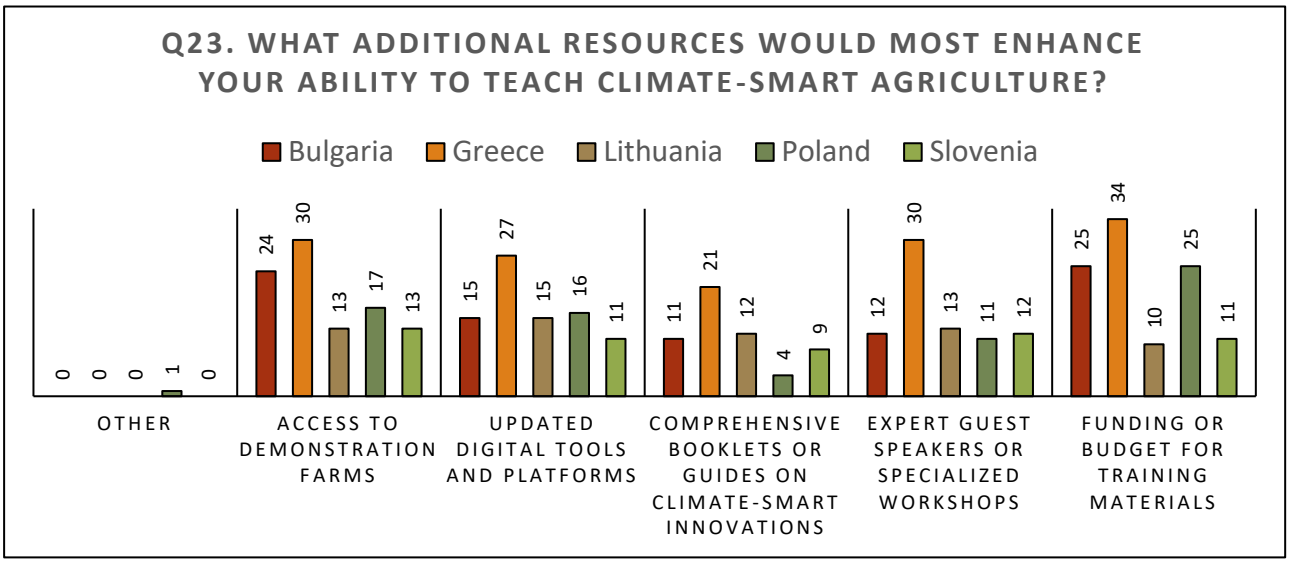

Fig. 23. Distribution of responses regarding the additional resources.

Bulgaria: The most frequently mentioned needs are funding or budget for training materials (28.7%) and access to demonstration farms (27.6%).

Greece: The most requested are funding (23.9%) and expert guest speakers or specialized workshops (21.1%), as well as access to demonstration farms (21.1%).

Lithuania: Updated digital tools and platforms dominate (23.8%), followed by access to demonstration farms and expert workshops (20.6% each).

Poland: The most prominent needs are funding (33.8%) and access to demonstration farms (23%).

Slovenia: Access to demonstration farms (23.2%) and expert workshops (21.4%) are the most frequently mentioned.

Conclusion:

Overall, the most common needs are funding or budget for training materials (24.9%) and access to demonstration farms (23%).

Technological resources, such as updated digital tools and platforms, also represent a significant share of answers (19.9%).

Open questions and answers (Q24–Q26) – summary and highlights

Q24. Main challenges teachers face in teaching climate crisis and resilience farming practices, and resources which would help

Main themes (dominant trends):

Lack of practice and localization: there is a shortage of local examples, demonstration farms, step-by-step guides, and adapted (language/region) tools.

Economics and risk: uncertainty about the payoff of sustainable practices; fear of yield/income losses during the transition period.

Resources and technology: limited access to modern equipment, digital tools, sensors, as well as financing.

Knowledge gaps: lack of up-to-date, easily understandable materials; audience has different knowledge levels; lack of time.

Complexity: the climate topic is interdisciplinary and rapidly changing; it is difficult to connect scientific knowledge with real farm practices.

By country (highlights):

Bulgaria: particular emphasis on economic risks, lack of confidence in innovations, shortage of localized materials and demonstrations, and access to water/irrigation technologies.

Greece: lack of Greek practical, accessible materials, heterogeneous groups, time constraints, and challenges in translating theory into practice for smaller farms; need for demonstration farms and interactive platforms.

Lithuania: shortage of information and structured resources, financial constraints, need for clear and simple tools, live demonstrations, and digital tools.

Poland: frequent mentions of habits and mentality, lack of profitability and time, and knowledge gaps.

Slovenia: need for practical demonstrations, interactive tools, finances and distrust of new technologies are mentioned.

Q25. Biggest barrier preventing farmers from adopting climate-resilient techniques, and how might training address this

Main themes:

Financial risk and initial costs (the most common barrier in all countries).

Lack of knowledge or trust, and uncertain economic outcomes.

Attachment to traditional practices and fear of crop loss.

Limited access to technology, advisory services, and simple implementation steps.

Bureaucracy and complexity of financial instruments (especially mentioned in Bulgaria, Greece, and Poland).

By country:

Bulgaria: distrust and uncertainty about economic effects; clear financial models and examples are needed.

Greece: cost and financial uncertainty, lack of awareness of support; success stories and simple, step-by-step guidance are requested.

Lithuania: lack of knowledge and financial resources; more training and practical exercises are needed.

Poland: financial constraints plus limited knowledge and time, changing requirements; economic analysis would help decision-making.

Slovenia: financial constraints, attachment to established practices, and lack of information.

What should be done in training, based on the responses:

Demonstrations and peer learning, step-by-step guides, clear cost-benefit calculations, information on support programs, loans, insurance, and post-training mentoring.

Q26. New or emerging climate challenges which anticipate needing to address in agricultural training looking 10 years ahead

Main themes (dominant trends):

Extreme events (droughts, heat waves, floods, hail, winds) and production instability.

Water scarcity and management, irrigation, water retention.

Changes in the spread of pests and diseases.

Shifts in crop varieties/calendars, and changes in agroecological zones.

Digitalization/precision agriculture, AI, real-time monitoring.

Soil health, erosion, regenerative practices, carbon farming/CO_2 accounting.

Heat stress in livestock, farm infrastructure resilience.

Market and financial volatility (insurance, risk management).

By country:

Bulgaria: extreme weather, water, heat stress, carbon farming, digital tools.

Greece: prolonged droughts/heat waves, water/energy management, AI and precision technologies, new pests/diseases.

Lithuania: water scarcity, soil fertility and erosion, pests/diseases, digitalization.

Poland: water scarcity, pest damage, irrigation infrastructure, drought-resistant varieties.

Slovenia: droughts, floods, heat waves, adapted varieties and new systems (agroforestry, cover crops), local adaptation of solutions.

Q24–Q26 summary:

Shift the focus to practice and localization: demonstration farms, field days, local success stories.

Economics to the forefront: for each technique – cost-benefit analyses, payback scenarios, financing and insurance guidelines.

Water and risk management – a core module for all countries: retention, efficient irrigation, farm infrastructure resilience, extreme events planning.

Soil health and regenerative practices: responding to pest/disease and yield challenges.

Digital skills: from sensors and data collection to AI-assisted decision-making; provide opportunities to test tools.

Ongoing support after training: mentoring, peer networks, Q&A sessions – this increases confidence and adoption.

2.1. Summary and Conclusions – Educators' Survey

The survey of 155 educators across Bulgaria, Greece, Lithuania, Poland, and Slovenia provides a comprehensive overview of agricultural education in the context of climate resilience and sustainability. Respondents primarily work in VET schools and universities, with most having 5–10 or more than 20 years of experience. Over half have already received training related to climate crisis adaptation and mitigation, though notable disparities exist between countries.

Overall, the responses suggest a moderately positive assessment of climate-related agricultural education, with average Likert-scale ratings mostly ranging between 3.0 and 3.6. Educators report strong collaboration with farmers and industry representatives, particularly in Bulgaria, but highlight a shortage of practical, hands-on training and insufficient teaching materials, especially in Poland and Greece. Institutional support and learner interest in sustainable farming are generally high, though government policy support is perceived as limited.

Key training needs identified include precision agriculture technologies and innovative agri-tech, indicating that educators view digitalization and technological advancement as crucial for the future of agricultural training. However, there is less demand for socio-political or financial topics such as policy advocacy or insurance mechanisms. Funding and access to demonstration farms are the most requested resources to enhance teaching effectiveness.

Open-ended responses reinforce these findings: educators face challenges related to financial risks, lack of localized materials, insufficient access to modern tools, and the complexity of integrating scientific knowledge into practice. The main barriers for farmers adopting climate-resilient practices include high initial costs, limited knowledge, and attachment to traditional methods. Looking ahead, respondents foresee emerging challenges from extreme weather, water scarcity, pest and disease shifts, and the need for digital skills and soil health management.

In summary, the results highlight strong motivation among educators to strengthen climate-resilient agricultural training but emphasize the urgent need for practical demonstration, economic feasibility tools, localized content, and continuous professional development to achieve meaningful transformation in agricultural education.

2. Results of the Learners' (Agriculture Students, Trainees) Survey

Q1. Distribution of learners according to the country

Bulgaria: 42 participants

Greece: 65 participants

Lithuania: 22 participants

Poland: 35 participants

Slovenia: 22 participants

A total of 186 learners from five partner countries participated in the survey.

Q2. Current level of study or training

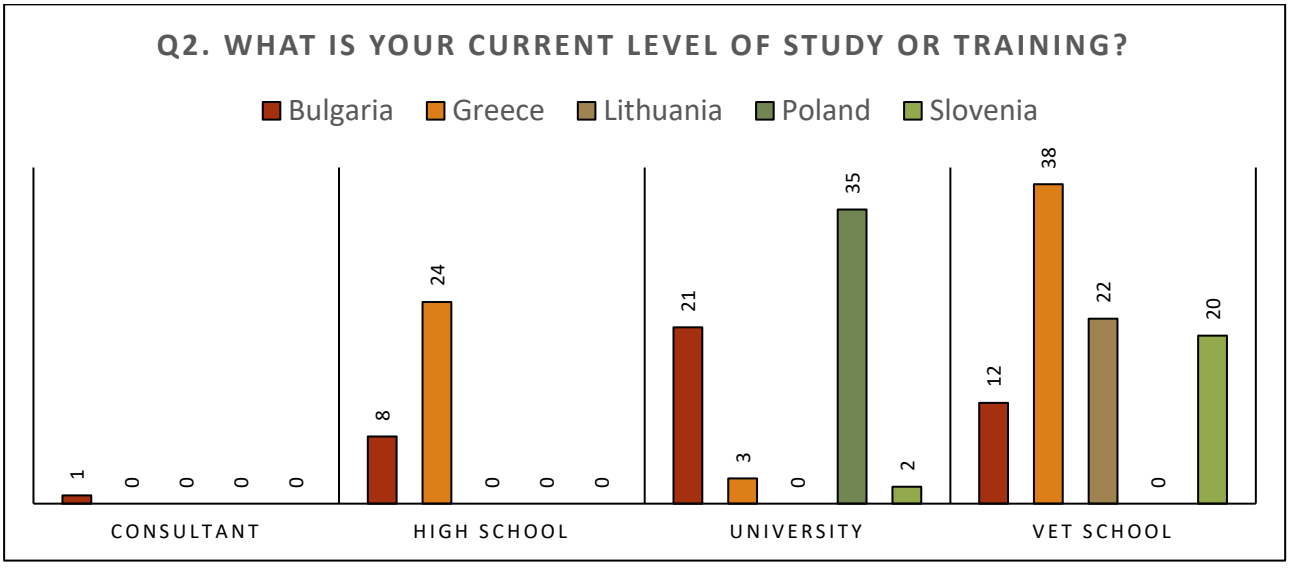

Fig. 24. Distribution of responses regarding the current level of study or training.

Bulgaria: Mostly university (50%), followed by vocational schools (VET) (28.6%) and secondary schools (19%); consultants – 2.4%.

Greece: VET dominates (58.5%), followed by secondary schools (36.9%); university – 4.6%.

Lithuania: All respondents study in VET schools (100%).

Poland: All respondents study at university (100%).

Slovenia: Most are in VET schools (90.9%), the rest at university (9.1%).

Conclusion: Overall, most learners are in VET schools (49.5%), followed by universities (32.8%) and secondary schools (17.2%); consultants are minimal (0.5%).

Q3. Main field of study or interest in agriculture

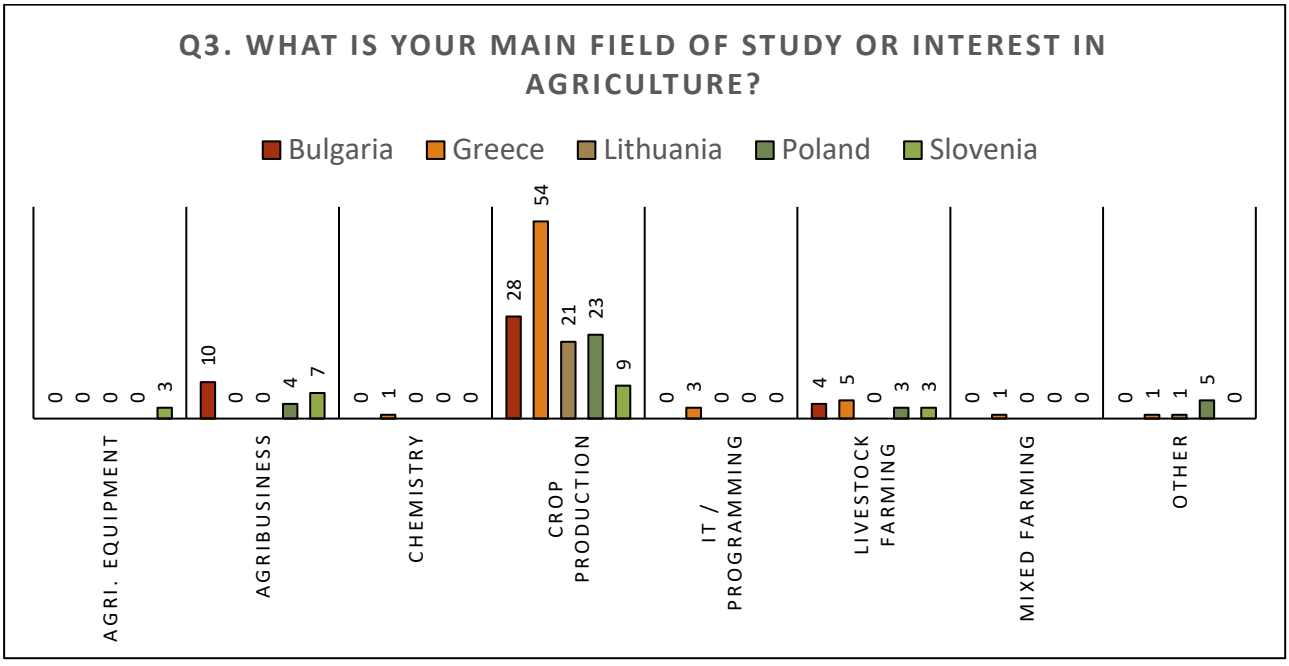

Fig. 25. Distribution of responses regarding the main field of study or interest.

Bulgaria: Crop production dominates (66.7%), followed by agribusiness (23.8%) and livestock farming (9.5%).

Greece: Crop production is clearly dominant (83.1%), followed by livestock farming (7.7%), IT/programming (4.6%), and other fields (1.5% each).

Lithuania: Almost all respondents focus on crop production (95.5%), with a small proportion in other fields (4.5%).

Poland: Crop production leads (65.7%), followed by agribusiness (11.4%), livestock farming (8.6%), and a relatively larger other category (14.3%).

Slovenia: More diverse distribution – crop production (40.9%), agribusiness (31.8%), agricultural equipment (13.6%) and livestock farming (13.6%).

Conclusion: Overall, the majority of learners focus on crop production (72.6%). Other areas include agribusiness (11.3%) and livestock farming (8.1%); IT/programming and agricultural equipment account for 1.6% each, chemistry and mixed farming for 0.5% each, and other fields for 3.8%. Lithuania and Greece are the most concentrated on crop production, while Slovenia shows the most diverse distribution across fields.

Q4. Have you had any prior education about climate crisis and its impact on agriculture?

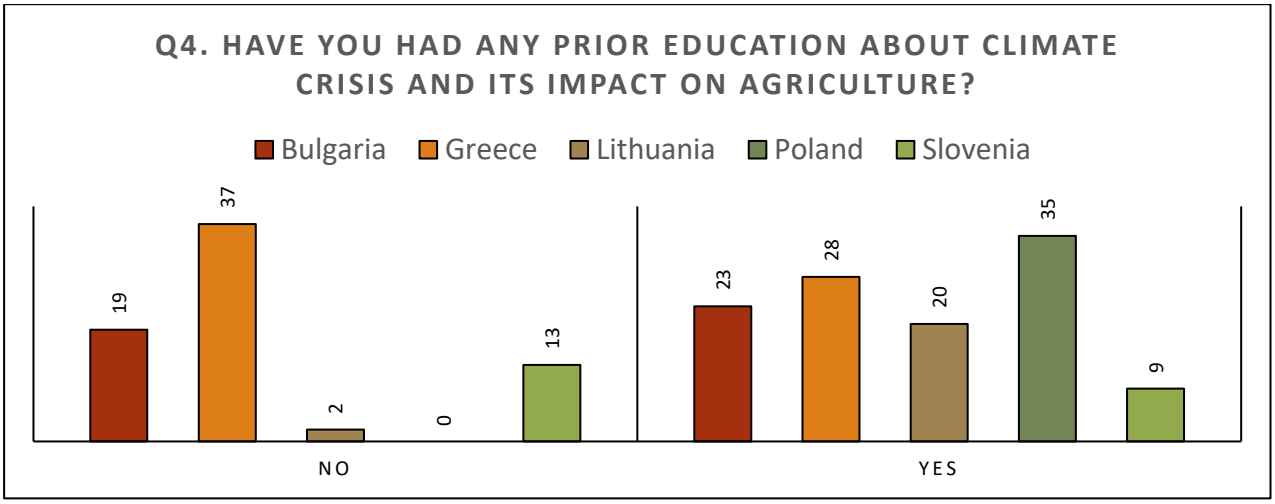

Fig. 26. Distribution of responses regarding the prior education.

Bulgaria: More yes (54.8%), no – 45.2%.

Greece: More no (56.9%), yes – 43.1%.

Lithuania: Clear majority yes (90.9%).

Poland: All respondents answered yes (100%).

Slovenia: More no (59.1%), yes – 40.9%.

Conclusion: Overall, 61.8% of learners have already received education related to the climate crisis, while 38.2% have not. Poland (100% “yes”) and Lithuania (90.9% “yes”) stand out, whereas in Greece and Slovenia the majority has not received such education yet.

Q5. Do you plan to work in the agriculture sector after your studies?

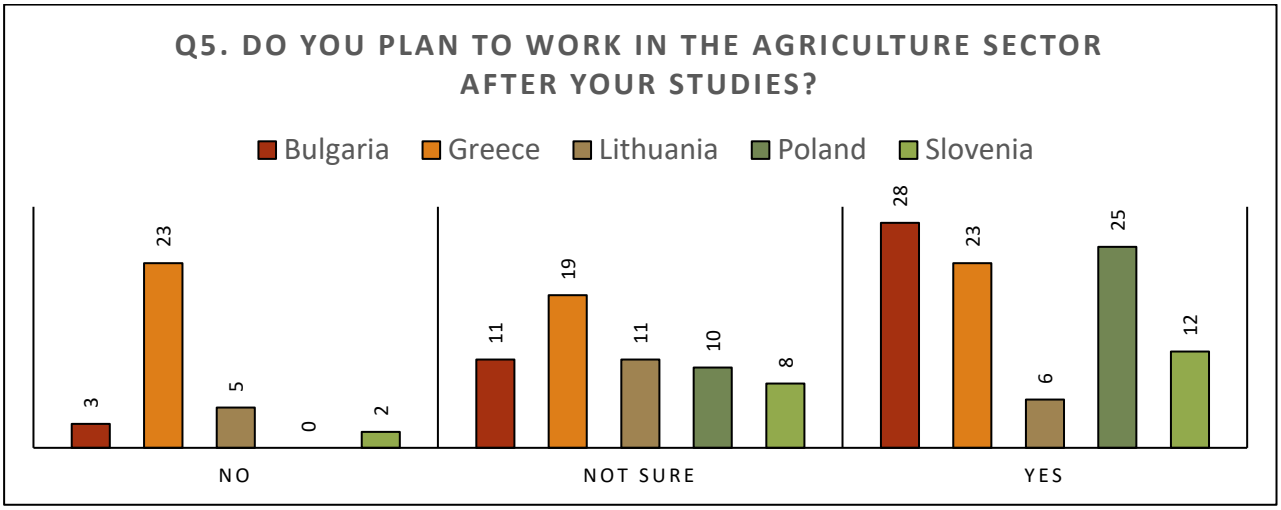

Fig. 27. Distribution of responses regarding the plan to work in the agriculture sector.

Bulgaria: The majority answered yes (66.7%); not sure – 26.2%, no – 7.1%.

Greece: Distribution is roughly equal – yes and no at 35.4% each, not sure – 29.2%.

Lithuania: Not sure dominates (50%); yes – 27.3%, no – 22.7%.

Poland: A clear majority answered yes (71.4%); not sure – 28.6%, no – 0%.

Slovenia: The majority answered yes (54.5%); not sure – 36.4%, no – 9.1%.

Conclusion: Overall, 50.5% of respondents plan to work in the agriculture sector, 31.7% are not sure, and 17.7% do not plan to. The strongest motivation is in Poland, with a clear majority also in Bulgaria and Slovenia; indecision dominates in Lithuania, while opinions in Greece are evenly split.

Questions Q6–Q14 are rated on a Likert scale from 1 – strongly disagree to 5 – strongly agree. Minimum, maximum, and average values for each question are presented below.

Q6. I feel aware of emerging climate threats (e.g., extreme weather events, new pests/diseases) that might affect future farming

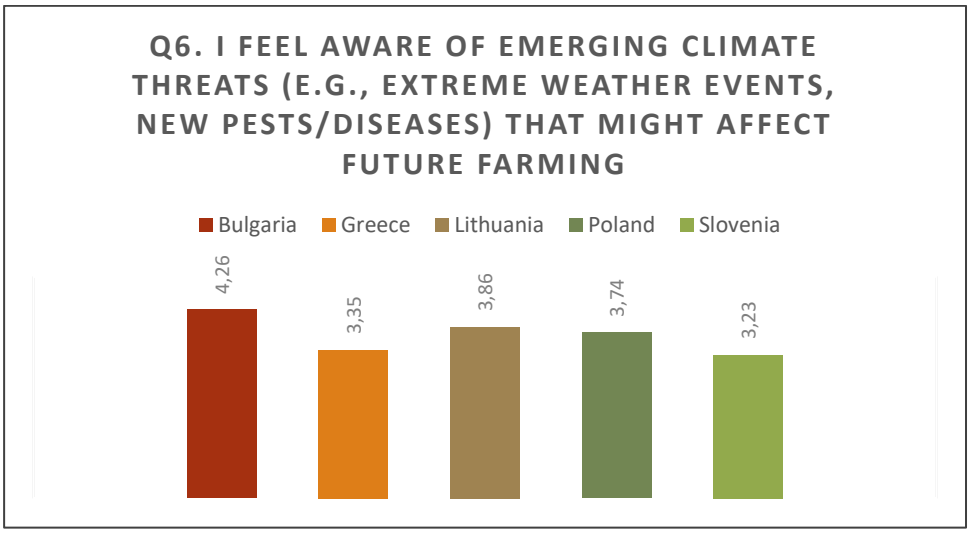

Fig. 28. Distribution of responses regarding the awareness of climate threats.

Highest rating: Bulgaria 4.26

Lowest rating: Slovenia 3.23

Average rating: 3.68

Conclusion: Awareness of emerging climate threats is generally high, with Bulgaria standing out and Slovenia scoring the lowest.

Q7. My training provides me with a strong understanding of climate crisis impacts on agriculture

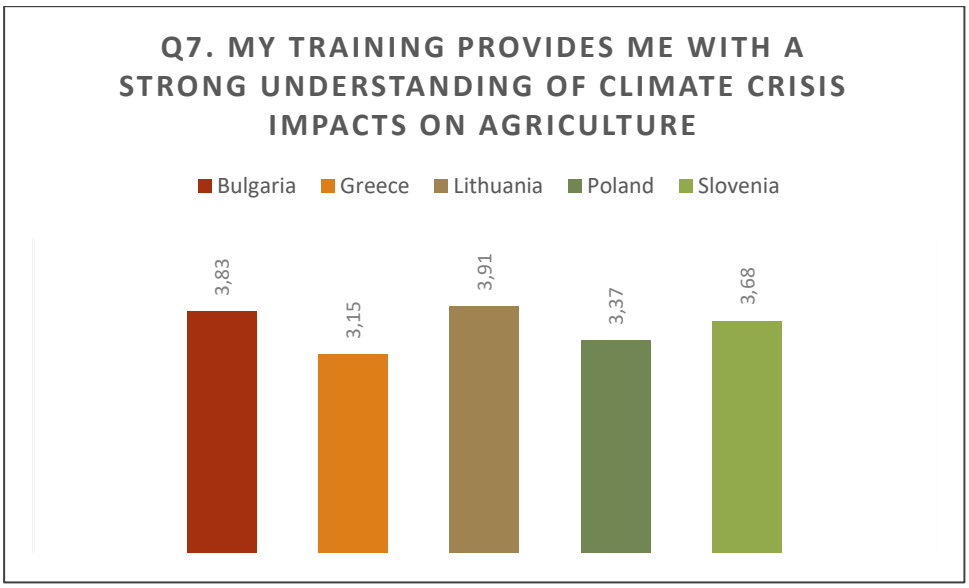

Fig. 29. Distribution of responses regarding the training provision of understanding.

Highest rating: Lithuania 3.91

Lowest rating: Greece 3.15

Average rating: 3.50

Conclusion: Theoretical understanding is moderately good, but a clear gap is evident in Greece.

Q8. My training includes practical skills to help address climate challenges in farming

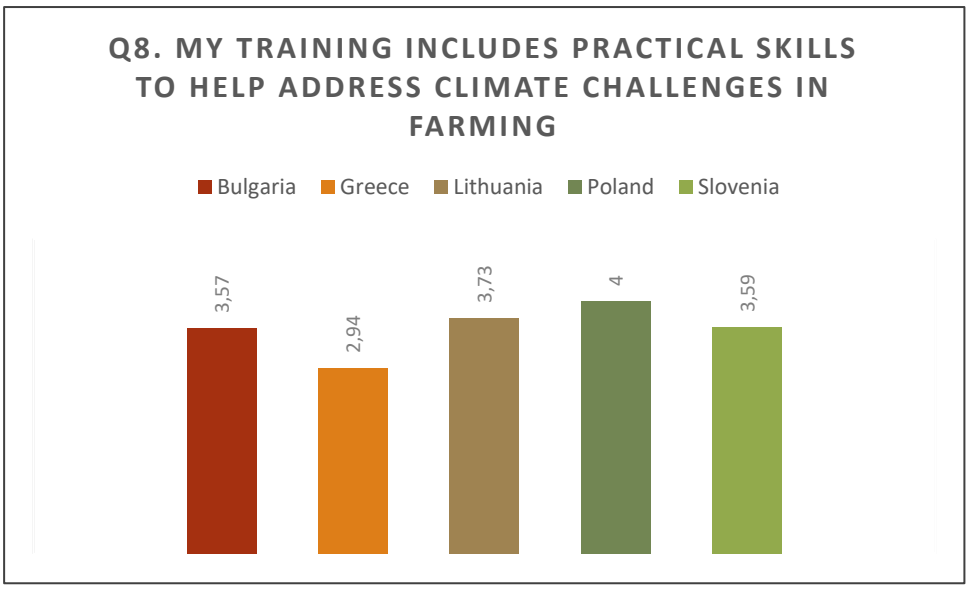

Fig. 30. Distribution of responses regarding the inclusion of practical skills into training.

Highest rating: Poland 4.00

Lowest rating: Greece 2.94

Average rating: 3.45

Conclusion: The practical component is generally good, but noticeably weaker in Greece.

Q9. I am interested in learning more about climate-resilient farming techniques

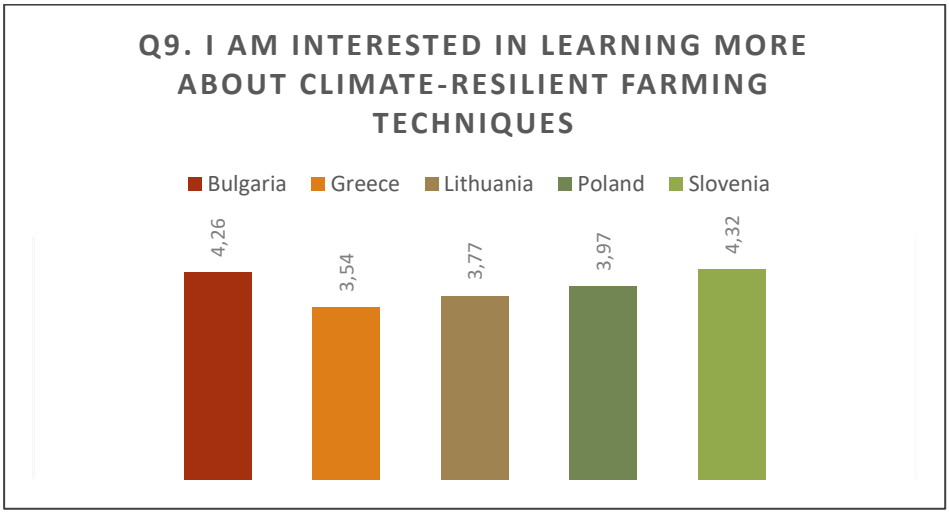

Fig. 31. Distribution of responses regarding the interest in learning more.

Highest rating: Slovenia 4.32

Lowest rating: Greece 3.54

Average rating: 3.90 (highest overall average score)

Conclusion: Motivation to learn more about climate-resilient farming techniques is very high across all countries, particularly in Slovenia and Bulgaria.

Q10. There is sufficient focus on sustainable and adaptive farming methods in my coursework

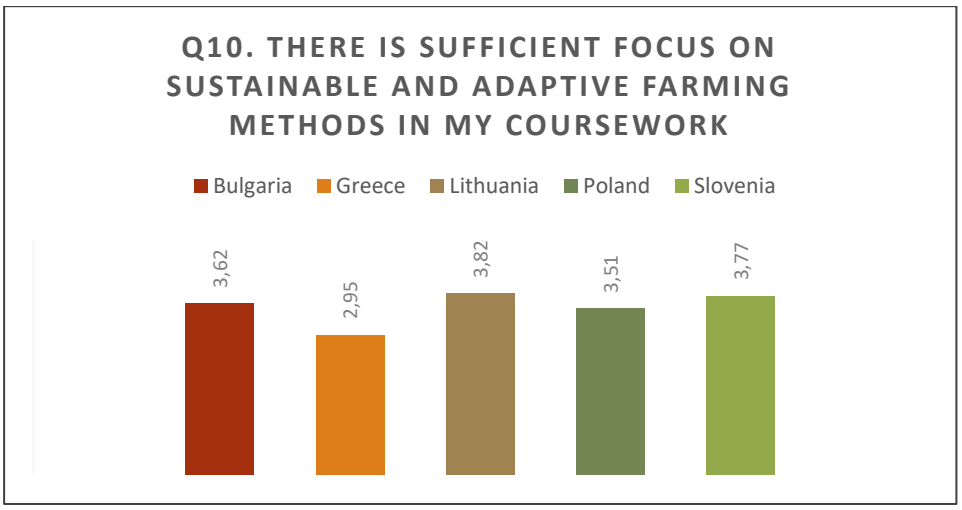

Fig. 32. Distribution of responses regarding the focus in coursework.

Highest rating: Lithuania 3.82

Lowest rating: Greece 2.95

Average rating: 3.41

Conclusion: Coverage of sustainable and adaptive methods is not consistent; Lithuania scores are the highest, while Greece shows less attention to this aspect in coursework.

Q11. My instructors/trainers are well-equipped to teach about climate crisis in agriculture

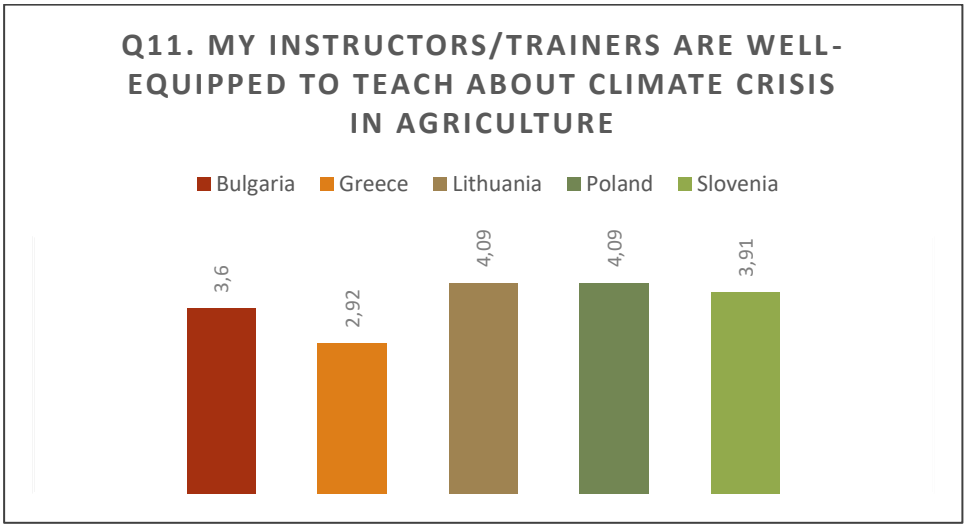

Fig. 33. Distribution of responses regarding the instructors equipment for teaching.

Highest rating: Lithuania 4.09 and Poland 4.09

Lowest rating: Greece 2.92

Average rating: 3.55

Conclusion: Students in Lithuania and Poland have the highest confidence in their teachers' competence, while students in Greece have the lowest.

Q12. I believe that agricultural education includes enough real-world examples of adaptation to climate crisis

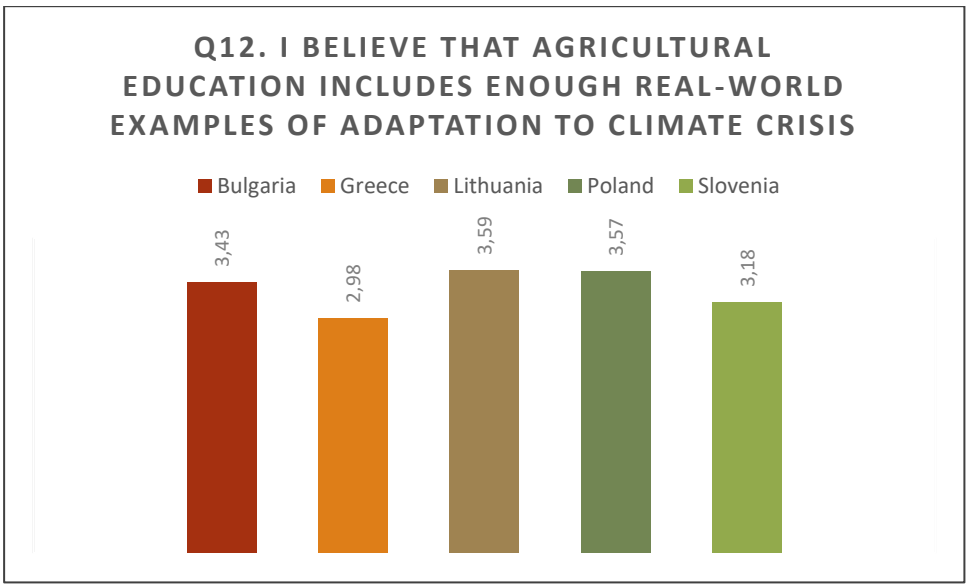

Fig. 34. Distribution of responses regarding the real-world examples in agricultural education.

Highest rating: Lithuania 3.59

Lowest rating: Greece 2.98

Average rating: 3.29 (lowest overall average score)

Conclusion: Students' responses indicate a lack of real-world examples, particularly in Greece.

Q13. I am confident that my education has prepared me to tackle climate-related agricultural challenges

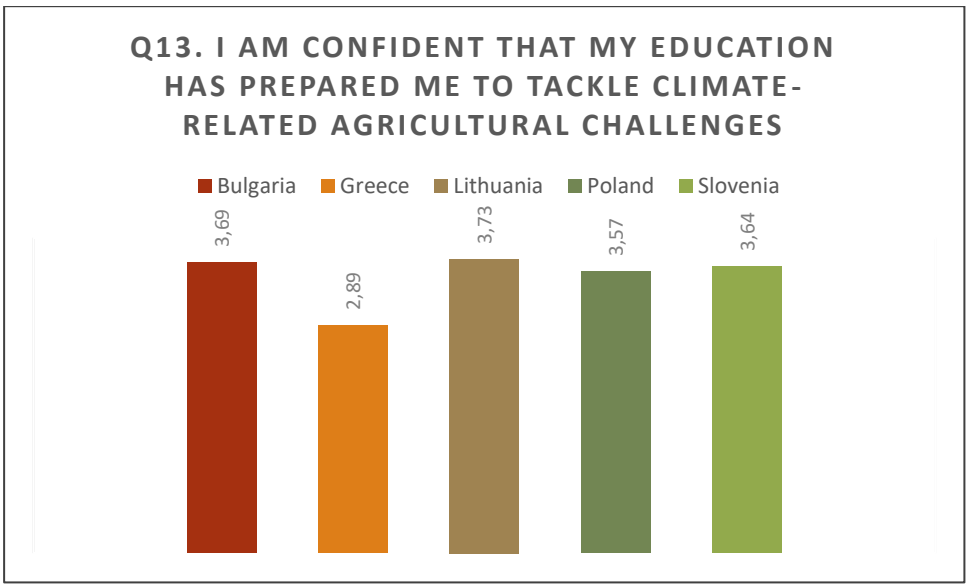

Fig. 35. Distribution of responses regarding the confidentiality in preparation for challenges.

Highest rating: Lithuania 3.73

Lowest rating: Greece 2.89

Average rating: 3.39

Conclusion: Confidence in learners' preparedness is moderate; the score of Lithuania is higher than of other countries, while Greece score is the lowest.

Q14. I would participate in additional training programs focused on climate resilience in agriculture

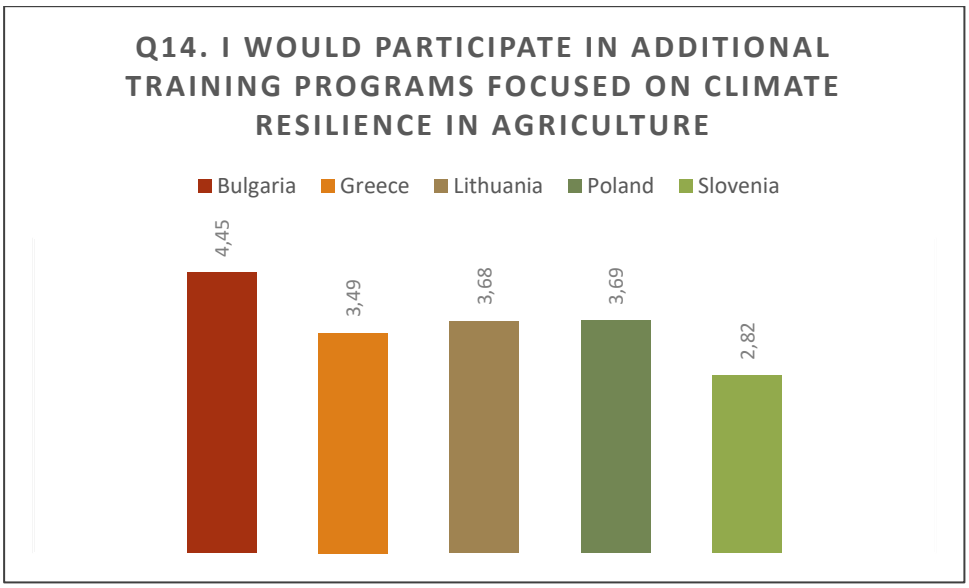

Fig. 36. Distribution of responses regarding the willingness to participate in additional training.

Highest rating: Bulgaria 4.45

Lowest rating: Slovenia 2.82

Average rating: 3.69

Conclusion: Willingness to continue training is generally high, especially in Bulgaria, but Slovenia's result contrasts with their high interest (Q9), suggesting possible practical barriers (e.g., time or financial constraints).

General trends in responses to questions Q6–Q14

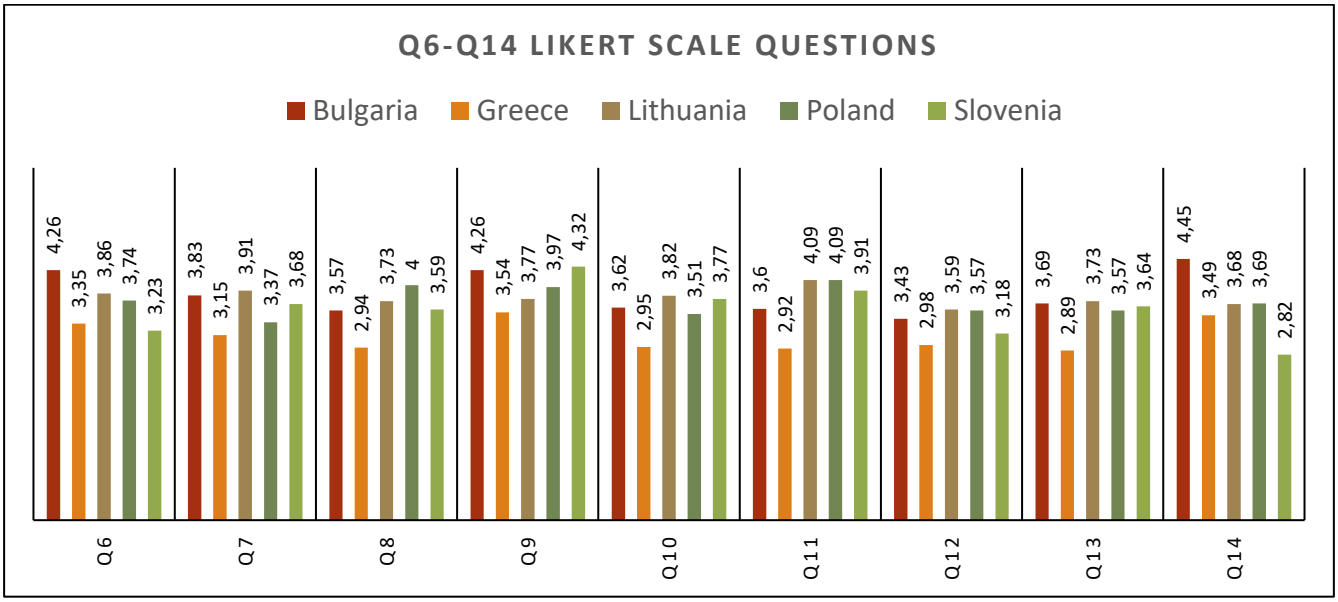

Fig. 37. Distribution of responses according to Likert scale questions.

Strengths: very high interest in further learning (Q9) and good assessment of teachers' preparation (Q11) in Lithuania and Poland.

Weaknesses: lack of real-life practice and examples (Q12 – the lowest average), especially in Greece; also lack of practical skills in Greece (Q8).

Profiles of each country:

Bulgaria – high awareness (Q6) and motivation to participate in additional training (Q14).

Greece – consistently lower scores on many questions; practice, examples and financial/organizational solutions are needed.

Lithuania – the highest ratings for understanding, teachers' competence and content focus (Q7, Q10–Q11, Q13).

Poland – the strongest practical skills (Q8) and positive assessment of teachers.

Slovenia – very high interest (Q9) but the lowest readiness to participate in additional training (Q14) – barriers worth investigating.

Recommendations: more demonstration farms and real-life cases, structured step-by-step practices, cost-benefit examples (especially Greece), and accessible further training for the Slovenian audience (logistics, finances, formats).

Q15. What are the most important aspects that need to be addressed more closely when it comes to climate-resilient agriculture with less negative environmental impacts?

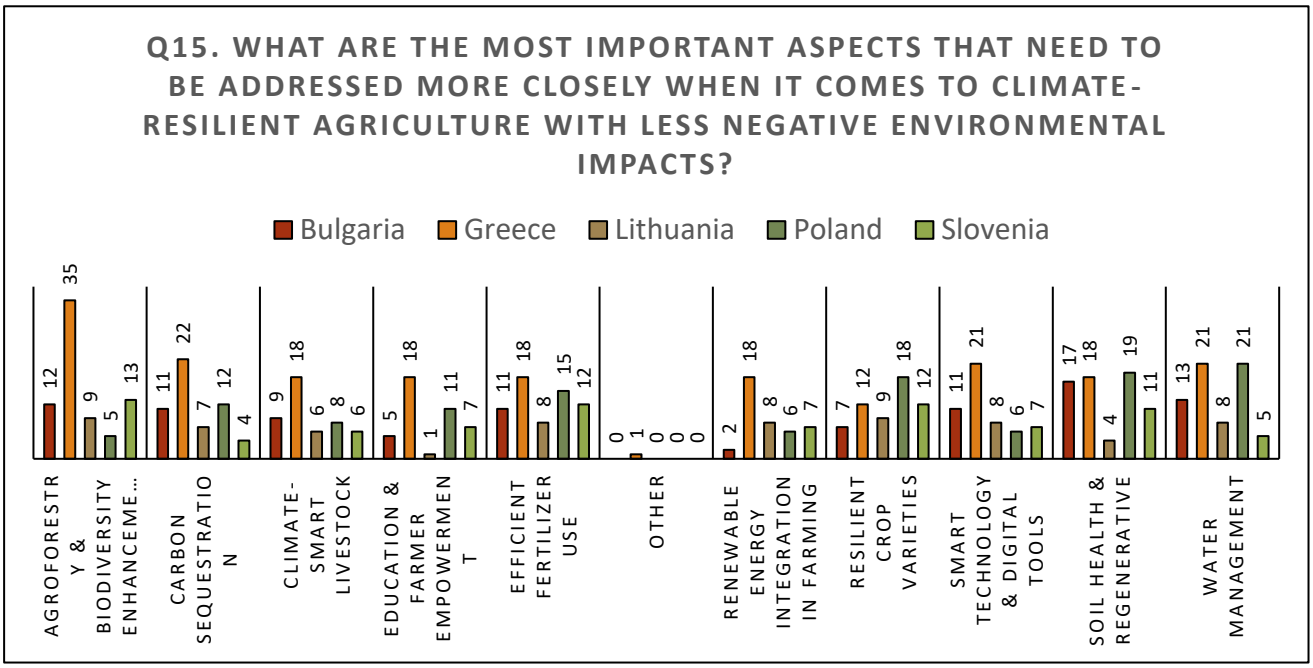

Fig. 38. Distribution of responses regarding the most important aspects that need to be addressed.

Bulgaria: soil health and regenerative practices (17.3%) and water management (13.3%) are the top priorities, followed by agroforestry and biodiversity enhancement (12.2%). The least important are education/farmer empowerment (5.1%) and renewable energy integration (2%).

Greece: agroforestry and biodiversity enhancement are the most prominent (17.3%), followed by carbon sequestration (10.9%), smart technologies, and water management (10.4% each). Other areas (0.5%) are the least prioritized.

Lithuania: priorities are fairly balanced; agroforestry and resilient crop varieties are highest (13.2% each), followed by renewable energy, efficient fertilizer use, smart technologies, and water management (11.8% each). The lowest priorities are education/farmer empowerment (1.5%) and soil (5.9%).

Poland: emphasis is on water management (17.4%) and soil health (15.7%), as well as resilient crop varieties (14.9%). The lowest priorities are agroforestry (4.1%) and smart technologies/renewable energy (~5% each).

Slovenia: agroforestry (15.5%) and resilient crop varieties and fertilizer efficiency (14.3% each) are the most important; the lowest are carbon sequestration (4.8%) and water management (6%).

The highest-rated aspects:

Agroforestry and biodiversity enhancement – 12.46% (the highest category),

soil health and regenerative practices – 12.18%,

water management and conservation – 11.78%,

efficient fertilizer use – 11.72%,

resilient crop varieties and genetic diversity – 11.08%.

The lowest-rated aspects:

Education and farmer empowerment – 6.58%,

renewable energy – 7.2%,

climate-resilient livestock farming – 8.12%.

Conclusion:

Students' priorities clearly lean towards nature- and regeneration-focused solutions: agroforestry, soil, water, along with resilient crop varieties and fertilizer efficiency.

Technology (smart tools) is rated moderately (9.34%), but water and soil consistently rank among the most important aspects across almost all countries.

Country-specific aspects: Greece – agroforestry; Poland – water and soil; Bulgaria – soil and water; Lithuania – balanced, with priority for resilient varieties and agroforestry; Slovenia – agroforestry and resilient varieties.

Implications for training: it is recommended to strengthen modules on regenerative agriculture (soil, biodiversity, agroforestry) and water management, supplemented with practical case studies and step-by-step "how-to" guidance, while integrating technological solutions as tools to implement these priorities.

Q16. Which formats do you find most effective for learning about climate-smart agriculture?

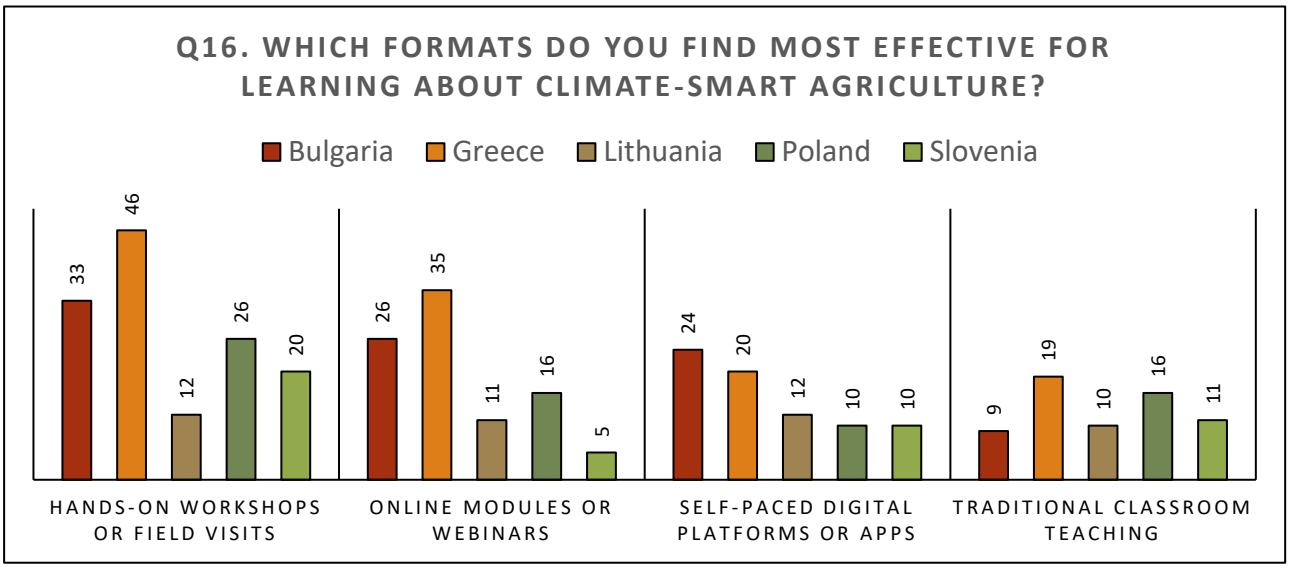

Fig. 39. Distribution of responses regarding the most effective formats.

Bulgaria: first place – hands-on workshops or field visits (35.9%), followed by online modules or webinars (28.3%) and self-paced digital platforms/apps (26.1%); traditional classroom teaching – least preferred (9.8%).

Greece: dominated by hands-on workshops or field visits (38%), followed by online modules or webinars (29.2%), self-paced platforms/apps (16.7%), and traditional classroom teaching (15.8%).

Lithuania: fairly even distribution – hands-on workshops or field visits and self-paced platforms/apps each 26.7%, online modules or webinars 24.4%, traditional classroom teaching 22.2%.

Poland: led by hands-on workshops or field visits (38.2%); traditional classroom teaching and online modules or webinars each 23.5%; self-paced platforms/apps 14.7%.

Slovenia: clear leader is hands-on workshops or field visits (43.5%), followed by traditional classroom teaching 23.9%, digital platforms/apps 21.7%; online modules or webinars least preferred (10.9%).

The highest-rated formats:

Hands-on workshops or field visits – 36.36% (the highest category)

Online modules/webinars – 23.26%

Self-paced digital platforms/apps – 21.18%

Traditional classroom teaching – 19.04% (the lowest category)

Conclusion:

Students clearly prioritize practical studies (field visits, demonstrations).

Online modules are suitable as a second support, while traditional classroom teaching should be supplementary rather than primary.

Country nuances: Slovenia and Poland – particularly strong demand for practical learning; Lithuania – mixed, flexible, independent formats work well; Greece – relatively high online training acceptance; Bulgaria – traditional classroom learning is the least preferred.

Q17. Which of the following areas would you like more in-depth training on?

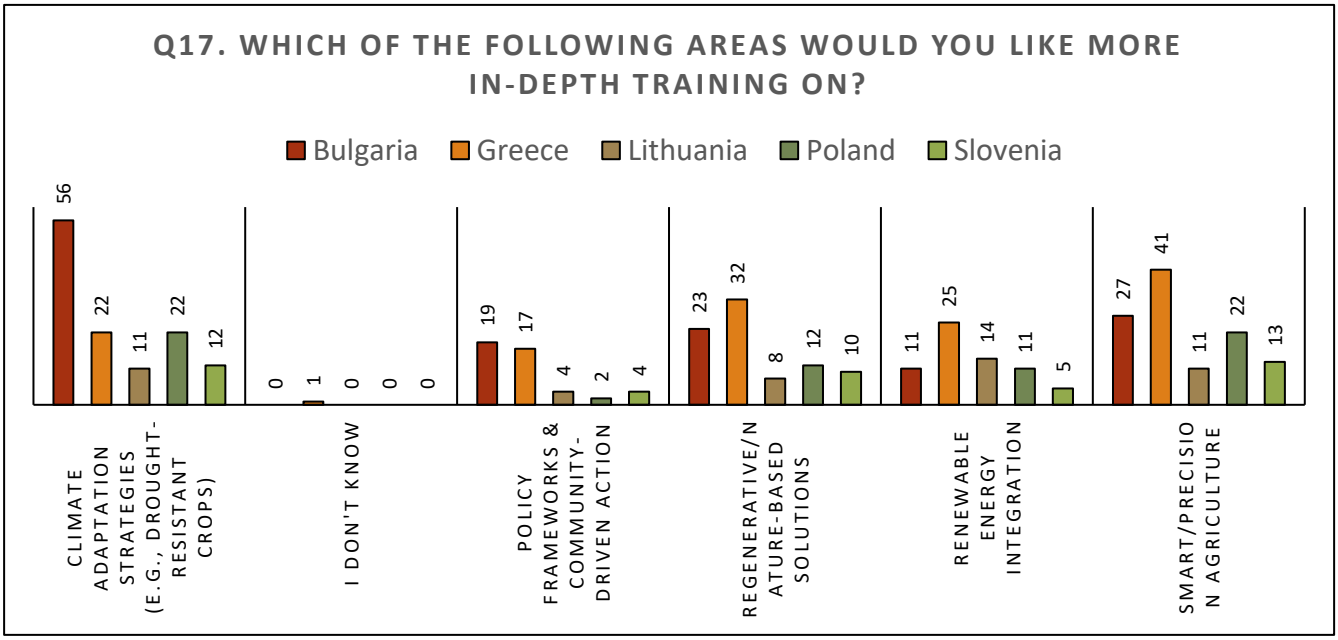

Fig. 40. Distribution of responses regarding the more in-depth training.

Bulgaria: learners are most interested in climate adaptation strategies (41.2%), followed by smart/precision agriculture (19.9%) and natural/regenerative practices (16.9%). The least interest is in renewable energy integration (8.1%).

Greece: smart/precision agriculture leads (29.7%), followed by natural/regenerative practices (23.2%) and renewable energy integration (18.1%). Policy frameworks and community actions receive the least attention (12.3%), followed by "I don't know" (0.7%).

Lithuania: renewable energy integration is clearly the top priority (29.2%), followed by climate adaptation and smart/precision agriculture (22.9% each) and regenerative practices (16.7%). Policy/public actions are least popular (8.3%).

Poland: climate adaptation and smart/precision agriculture are equally prioritized (31.9% each), followed by regenerative practices (17.4%) and renewable energy integration (15.9%). Policy is the least prioritized (2.9%).

Slovenia: smart/precision agriculture (29.5%) and climate adaptation strategies (27.3%) are the most popular, followed by regenerative practices (22.7%). Policy frameworks receive the least attention (9.1%).

The highest-rated areas:

Climate adaptation strategies – 27.8% (the highest category)

Smart/precision agriculture – 26.78%

Natural/regenerative practices – 19.38%

Renewable energy integration – 16.54%

Policy frameworks and community action – 9.32%

Conclusion:

Students are mostly interested in practical, applied content on climate adaptation and precision agriculture. Renewable energy is particularly relevant in Lithuania, technology and regenerative practices in Greece, adaptation and precision agriculture are equally prioritized in Poland, adaptation dominates in Bulgaria, and precision agriculture and adaptation in Slovenia. Policy and society topics receive the least attention, so they should be integrated through specific, economically grounded modules, while the main focus should remain on technology and practical adaptation measures.

Open questions and answers (Q18–Q21) – summary and highlights

Q18. Which skills or knowledge are missing in your training that would better prepare you for climate-resilient agriculture?

Main themes:

Practical experience and localization. Participants request real demonstrations, field days, and examples tailored to local conditions and specific sectors (greenhouses, livestock, rice, mushrooms, medicinal plants).

Water management, soil health, and agroecology. Irrigation/conservation, mulching, soil regeneration, and biodiversity maintenance.

Integrated crop protection, pest, and disease management under changing climatic conditions.

Digital tools and precision agriculture. Sensors, GIS, drones, and interpretation of weather and remote sensing data.

Finance, risk management, and carbon accounting. Subsidies, insurance, return on investment, and carbon credits.

Systems thinking and climate risk analysis.

Country-specific highlights:

Bulgaria: very specific needs, e.g., greenhouse microclimate, livestock adaptation, precision agriculture, and finance.

Greece: more practical training and modern technologies; some responses were vague or “I don’t know.”

Lithuania: requests for digital solutions, practical examples, and renewable energy; some participants consider their knowledge sufficient.

Poland: practical skills, drought-resistant varieties, water retention/irrigation, and plant protection.

Slovenia: more practice, precision agriculture, irrigation, understanding of financial support, and pest prevention.

Q19. What are the biggest obstacles to learning or adopting climate-smart farming techniques?

Main themes:

Financial costs and limited access to equipment/technology.

Lack of practical experience and local evidence; weak advisory/extension support.

Habits and resistance to change, uncertainty, and fear of risks.

Time constraints; bureaucracy and policy signals are not always favorable.

Information is not always applicable to specific agricultural sectors or is too theoretical.

By country:

Bulgaria: lack of practical training, financial resources, institutional support; entrenched habits.

Greece: limited practice and equipment, financial difficulties; quite a few responses “I don’t know.”

Lithuania: shortage of information and funds; some report low motivation.

Poland: time and financial constraints, limited awareness; some mention “green course” or bureaucratic burden.

Slovenia: insufficient practice; difficulty adapting to rapid changes; some report low interest.

Q20. What suggestions do you have for your institution or training program to improve climate-related agricultural education?

Main themes:

More practical training: demonstration farms, field exercises, farmer-to-farmer training.

Modules according to branches/crops and regional conditions.

Integrate digital tools, precision farming, weather/remote data.

Topics related to finance, risk, support, and subsidies (how to obtain and use them).

Mentoring and ongoing consultation, closer partnerships with science/business.

Flexible formats: short courses, online modules, clear, simple language.

By country:

Bulgaria: sector-specific modules, demo farms, risk management, digital solutions, exchange of experience, access to finance.

Greece: workshops and visits, experts, simple language, internships.

Lithuania: more practical training, farm examples, information on financial support; visits to advanced farms.

Poland: practical lessons, funding for irrigation, certified courses; presentations of relevant practices.

Slovenia: more fieldwork, seminars, farm visits; courses on support/projects, scenario simulations.

Q21. Where do you see yourself in 5-10 years regarding climate-smart agriculture? (e.g., working on a sustainable farm, pursuing advanced research, being an advocate for regenerative practices, etc.)

Dominant trends:

Working on sustainable/regenerative farms (some on their own farms).

Implementing precision technologies; using digital farming.

Consulting/training; community leadership.

Advanced research (varieties, low emissions, climate modeling).

A few – engineering/technical roles (especially in Slovenia) or undecided; a few plan to leave agriculture if policy/bureaucracy do not become easier (Poland).

By country:

Bulgaria: many aim to manage modern, climate-resilient farms; to be consultants/educators; working with science and carbon sequestration projects.

Greece: mixed – some associate themselves with implementing sustainable practices or research, but quite a few are undecided/neutral.

Lithuania: some see themselves on sustainable farms with the latest technologies, but quite a few state they do not plan to work in agriculture.

Poland: mostly sustainable/modern farms or research; a few critical comments about policy/bureaucracy.

Slovenia: sustainable or precision farming, as well as a significant number in technical/mechanical fields; consulting/forestry roles are mentioned.

Summary:

One clear signal prevails across all open questions – “less theory, more practical application” to move toward real climate-smart farming.

3.1. Summary and Conclusions – Learners' Survey

The survey of 186 learners from Bulgaria, Greece, Lithuania, Poland, and Slovenia reveals valuable insights into students' awareness, motivation, and expectations regarding climate-resilient agriculture. Most respondents study in VET schools (49.5%) or universities (32.8%), and a majority (61.8%) have already received some form of education about the climate crisis and its agricultural implications. Roughly half (50.5%) plan to work in the agricultural sector after their studies, while about one-third remain undecided.

Overall, learners demonstrate **high awareness and motivation** toward climate-resilient farming, reflected in strong ratings for interest in further learning (average 3.90) and willingness to participate in additional training (3.69). However, they report **gaps in practical training** and a lack of real-world examples. Greece consistently records the lowest average ratings, indicating weaker integration of climate-related topics in curricula, while Lithuania and Poland achieve the highest results, with learners expressing strong confidence in their teachers and the quality of training. The main weaknesses identified include insufficient hands-on experience and limited focus on applied adaptation measures.

Students' thematic priorities emphasize **agroforestry, soil health, water management, and resilient crop varieties**, showing clear alignment with nature-based and regenerative solutions. Technology and smart tools are valued as enablers, but socio-political topics such as policy or advocacy receive much less attention. Learners also express a clear preference for **hands-on workshops and field visits (36%)**, followed by online modules and self-paced platforms, indicating that practical and flexible learning approaches are most effective.

Open-ended responses further reinforce the call for **"less theory, more practice"**. Key gaps include localized demonstrations, water and soil management, digital and precision farming skills, and financial knowledge (cost-benefit, insurance, subsidies).

Financial barriers, limited equipment, and lack of applied training are the most cited obstacles. Learners envision their future in sustainable or precision farming, applied research, and advisory roles—highlighting both optimism and a desire for modern, practice-oriented agricultural education.

In summary, the findings underscore strong student motivation but call for **more experiential learning, digital integration, and economic realism** in agricultural education to effectively prepare the next generation for climate-smart and sustainable farming.

3.Results of Stakeholder Organisations Survey

Q1. Distribution of stakeholders according to the country

Bulgaria: 21 participants

Greece: 39 participants

Lithuania: 14 participants

Poland: 34 participants

Slovenia: 26 participants

In total, 134 stakeholder representatives from five partner countries participated in the survey.

Q2. Type of organization

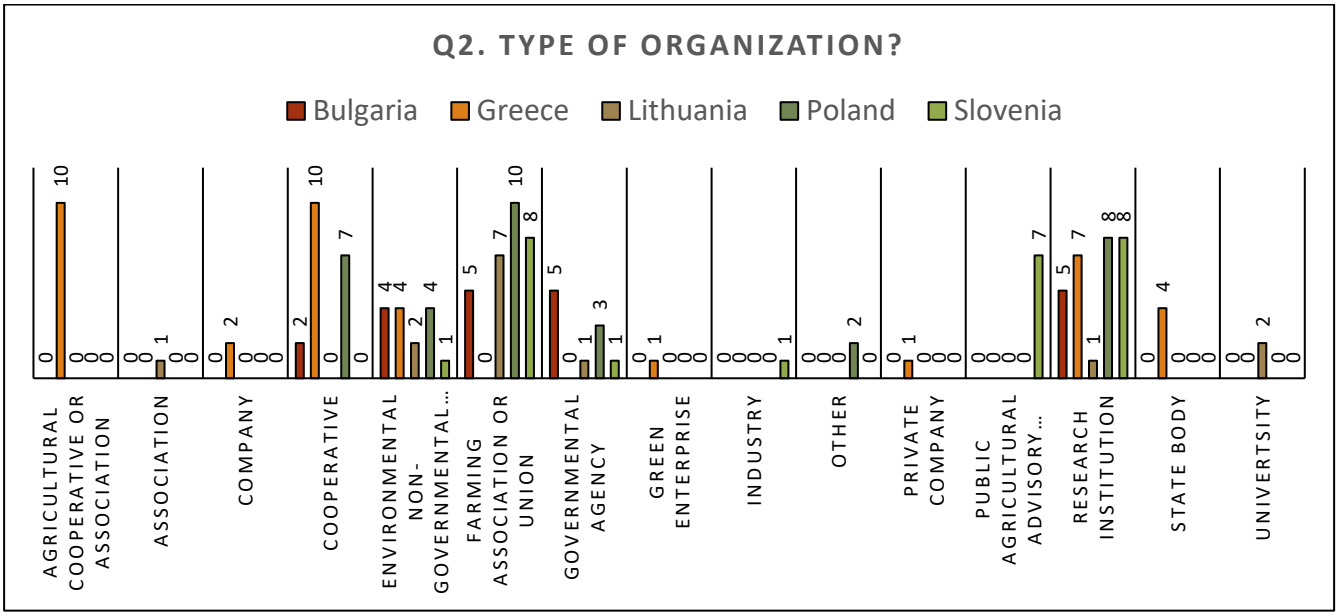

Fig. 41. Distribution of responses regarding the type of organization.

Bulgaria: Most respondents are from farming associations or unions (23.8%), followed by governmental agencies (23.8%) and research institutions (23.8%). A notable share also comes from environmental NGOs (19%).

Greece: Agricultural cooperatives or organizations (25.6%) and cooperatives (25.6%) dominate. A significant share belongs to research institutions (17.9%) and governmental agencies (10.3%).

Lithuania: Farming associations or unions clearly stand out (50%). There are also representatives from environmental NGOs (14.3%), governmental agencies (7.1%), research institutions (7.1%), and universities (14.3%).

Poland: The main categories are farming associations or unions (29.4%) and research institutions (23.5%). A considerable share also comes from cooperatives (20.6%), environmental NGOs (11.8%), and governmental agencies (8.8%). A smaller share falls into the “Other” category (5.9%).

Slovenia: Farming associations or unions (30.8%) and research institutions (30.8%) dominate. A significant share represents the public agricultural advisory service (26.9%). There are also individual representatives from environmental NGOs (3.8%), governmental agencies (3.8%), and the industry sector (3.8%).

Conclusion: Most respondents across countries belong to farming associations or unions (22.4%) and research institutions (21.6%). Cooperatives (14.2%) and environmental NGOs (11.2%) follow. Other types of organizations—governmental agencies, agricultural associations, and public advisory services—represent smaller but still notable shares.

Q3. Years of organizations activity in agriculture or environmental field

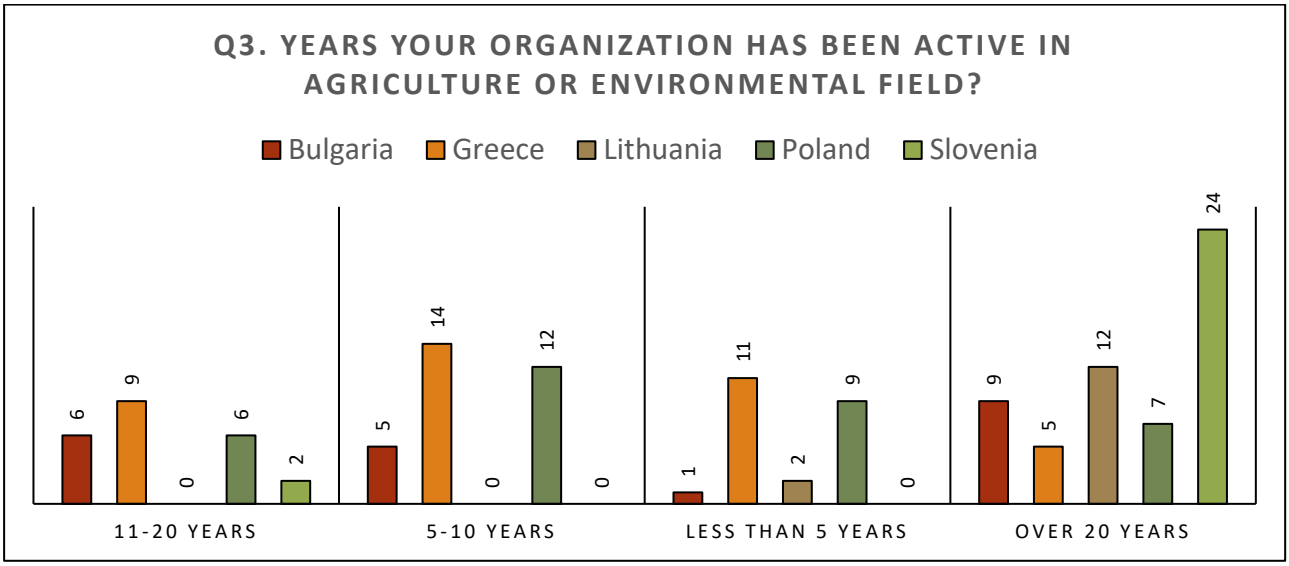

Fig. 42. Distribution of responses regarding the years of organizations activity in agriculture.

Bulgaria: Most organizations have more than 20 years of experience (42.9%). A significant share has been active for 11–20 years (28.6%) and 5–10 years (23.8%). Only a small share (4.8%) has been operating for less than 5 years.

Greece: Organizations active for 5–10 years dominate (35.9%), and there are also quite a few newer ones (28.2%, up to 5 years). Slightly fewer have been active for 11–20 years (23.1%), while the longest-established ones (over 20 years) account for only 12.8%.

Lithuania: Long-established organizations clearly dominate – as many as 85.7% have more than 20 years of experience. The remaining 14.3% are newer, operating for less than 5 years.

Poland: Most organizations have 5–10 years of experience (35.3%). A notable share has been active for up to 5 years (26.5%) and 11–20 years (17.6%), while 20.6% have more than 20 years of experience.

Slovenia: Almost all organizations (92.3%) have more than 20 years of experience. Only a few are 11–20 years old (7.7%), with no organizations falling into the other categories.

Conclusion: Most respondents represent organizations that have been active for more than 20 years (42.5%). The second-largest group consists of organizations with 5–10 years of experience (23.1%), followed by those operating for 11–20 years and less than 5 years (17.2% each). This shows that the survey was dominated by long-established institutions, although in some countries (particularly Greece and Poland) the participation of younger organizations is more noticeable.

Q4. Does your organization offer or engage in training related to climate crisis and resilient agriculture?

Fig. 43. Distribution of responses regarding the training related to climate crisis.

Bulgaria: Most organizations offer or participate in such training (76.2%), while a smaller share (23.8%) do not.

Greece: The situation is the opposite – most organizations (69.2%) do not engage in such training, with only 30.8% responding positively.

Lithuania: Organizations participating in such activities clearly dominate (78.6%), with only a minority (21.4%) not offering or participating in training.

Poland: The distribution is completely even – half of the organizations participate, and half do not (50% / 50%).

Slovenia: Almost all organizations (92.3%) offer or participate in such training, with only a very small share (7.7%) not doing so.

Conclusion: The majority of respondents (59.7%) indicated that their organization offers or participates in training related to the climate crisis and climate-resilient agriculture. However, significant differences can be observed between countries: negative responses prevail in Greece, while positive engagement clearly dominates in Slovenia, Lithuania, and Bulgaria. In Poland, the situation is evenly balanced.

Questions Q5–Q13 are based on a Likert scale from 1 – *strongly disagree* to 5 – *strongly agree*. The minimum, maximum, and average values for each question are presented below.

Q5. Climate crisis has significantly impacted agricultural productivity in the regions we work in

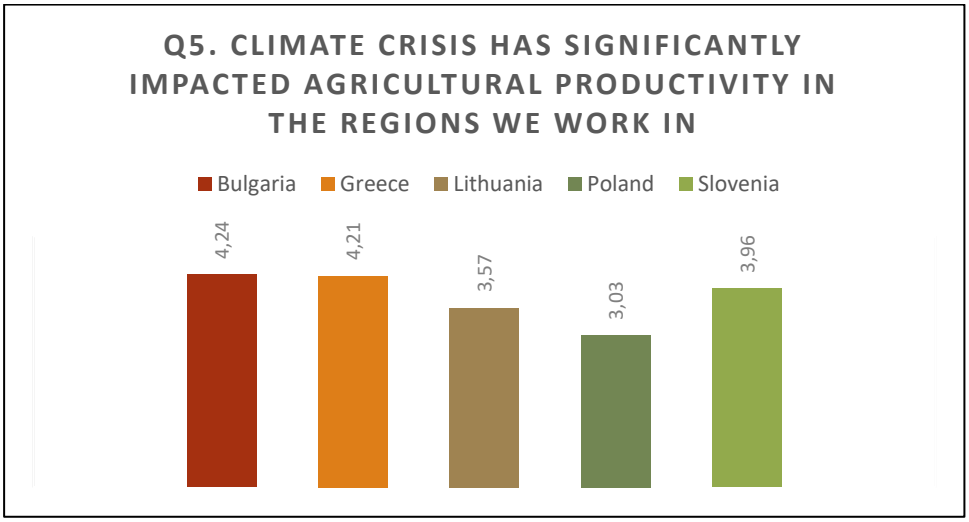

Fig. 44. Distribution of responses regarding the impact of climate crisis.

Highest rating: Bulgaria 4.24

Lowest rating: Poland 3.03

Average: 3.80

Conclusion: The impact of the climate crisis on productivity is recognized across all countries; Bulgaria and Greece perceive it most clearly, while Poland sees it the least.

Q6. Our organization is well-informed about climate crisis and its implications for agriculture

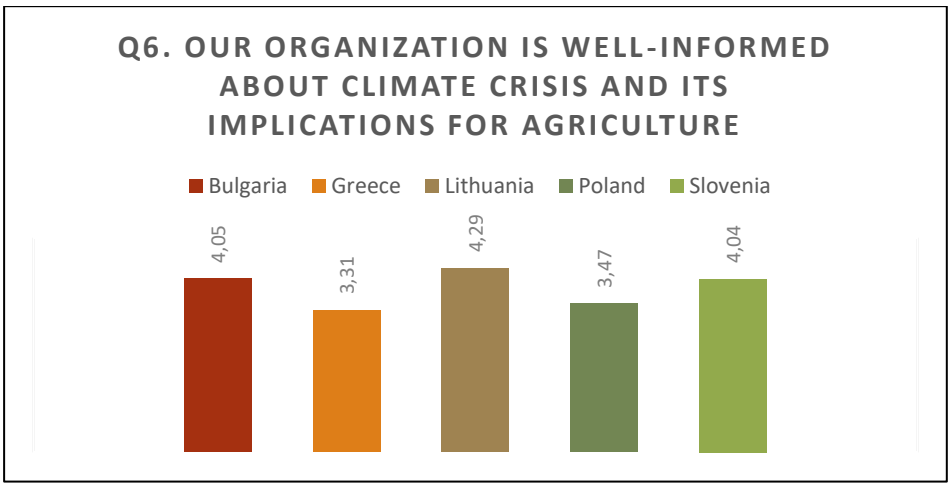

Fig. 45. Distribution of responses regarding being informed about climate crisis.

Highest rating: Lithuania 4.29

Lowest rating: Greece 3.31

Average: 3.71

Conclusion: Overall awareness is quite high, though Greece stands out with a noticeably lower level.

Q7. We actively support or implement climate adaptation strategies in agricultural systems

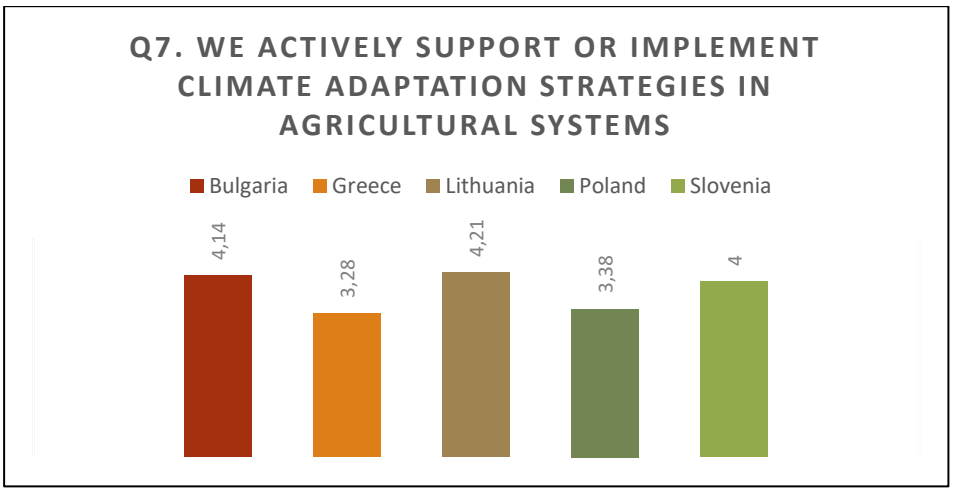

Fig. 46. Distribution of responses regarding the support or implementation of strategies.

Highest rating: Lithuania 4.21

Lowest rating: Greece 3.28

Average rating: 3.68

Conclusion: Lithuania demonstrates the highest level of engagement, while adaptation activities in Greece are on a smaller scale.

Q8. We have access to or provide sufficient resources and training to support resilience in farming communities

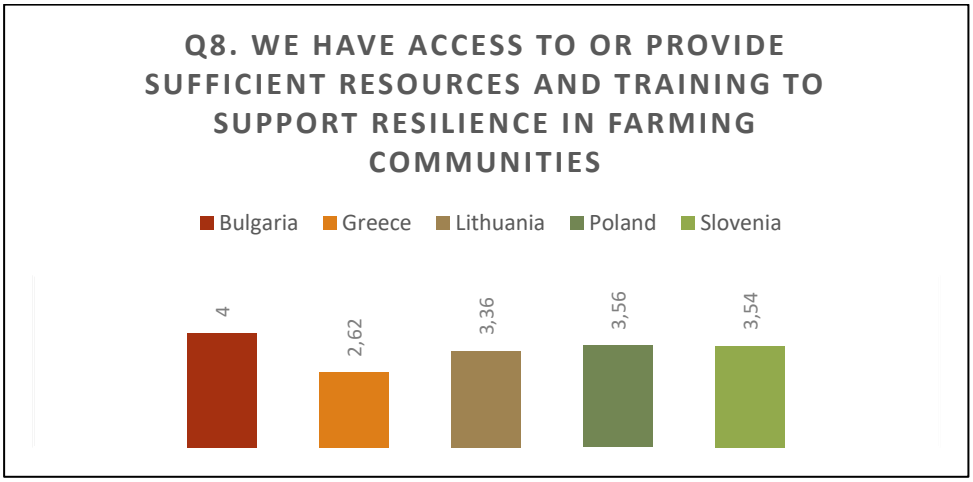

Fig. 47. Distribution of responses regarding the access to sufficient resources.

Highest rating: Bulgaria 4.00

Lowest rating: Greece 2.62

Average rating: 3.33

Conclusion: Resource availability is limited across all countries, with Greece facing the greatest shortage.

Q9. Current government policies and support systems are adequate to help farmers face climate challenges

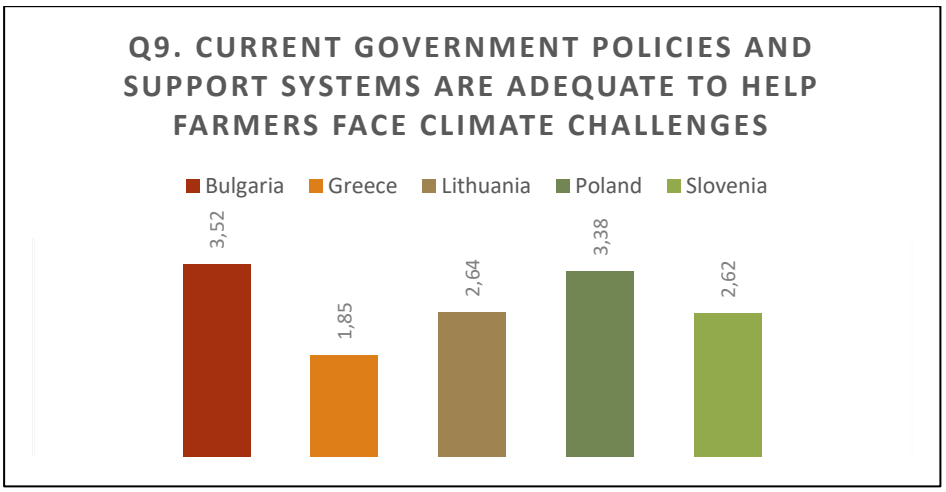

Fig. 48. Distribution of responses regarding the government policies and support systems.

Highest rating: Bulgaria 3.52

Lowest rating: Greece 1.85

Average rating: 2.73 (lowest overall indicator)

Conclusion: The adequacy of policy measures and support systems is viewed critically, especially in Greece.

Q10. We observe increasing stress on crop/animal health due to climate crisis

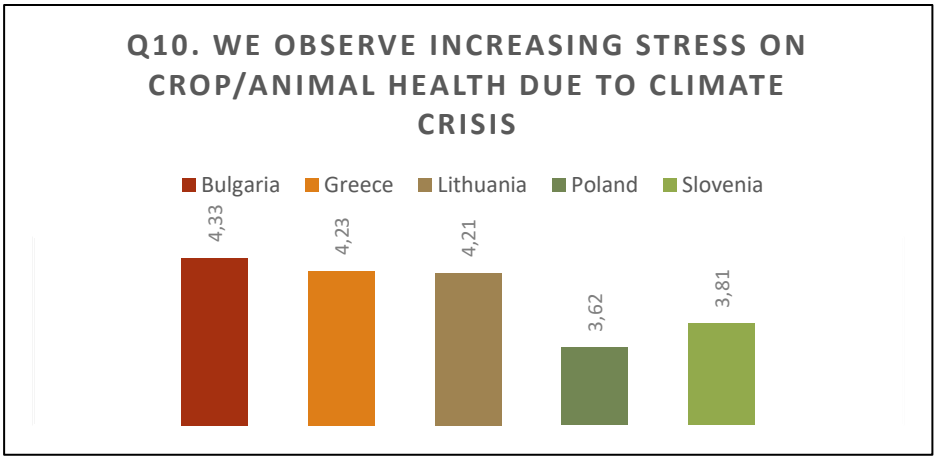

Fig. 49. Distribution of responses regarding the stress on crop/animal health.

Highest rating: Bulgaria 4.33

Lowest rating: Poland 3.62

Average rating: 4.01

Conclusion: The impact of the climate crisis on health is clearly recognized across all countries; Bulgaria and Greece stand out most strongly.

Q11. Our organization advocates for or assists in adopting innovative farming techniques to mitigate climate impacts

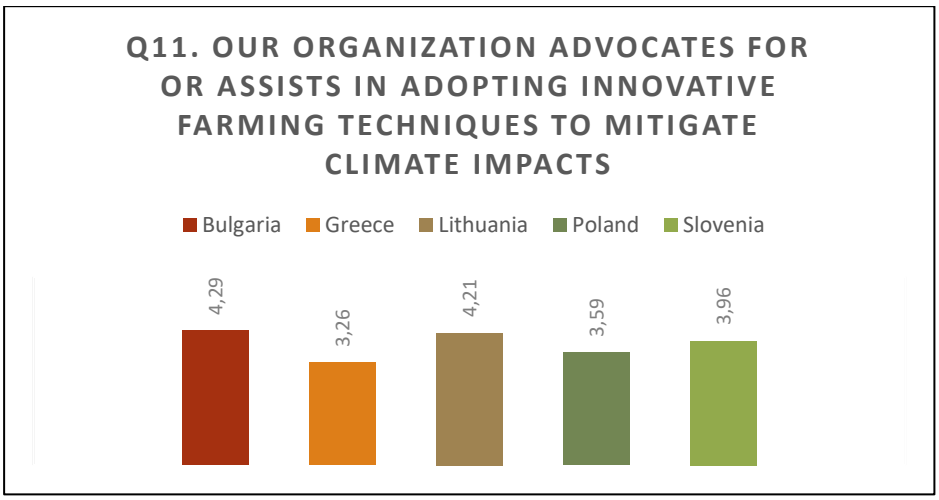

Fig. 50. Distribution of responses regarding the advocacy or assistance.

Highest rating: Lithuania 4.21 and Bulgaria 4.29

Lowest rating: Greece 3.26

Average: 3.74

Conclusion: Lithuania and Bulgaria demonstrate the strongest promotion of innovation, while this aspect is weakest in Greece.

Q12. We promote or use digital tools (e.g., remote sensing, monitoring apps, early warning systems) for climate adaptation

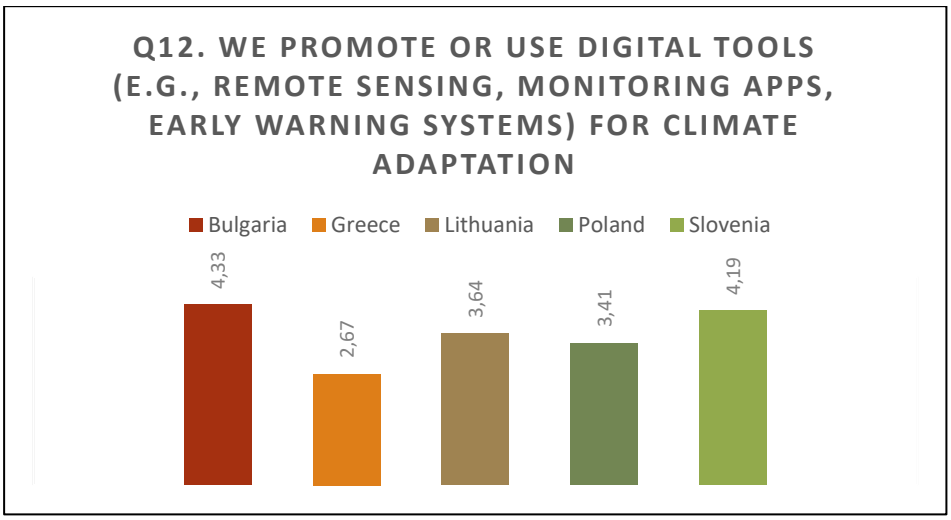

Fig. 51. Distribution of responses regarding the promotion or usage of digital tools.

Highest rating: Bulgaria 4.33

Lowest rating: Greece 2.67

Average rating: 3.51

Conclusion: The use of digital tools is quite wll spread in Bulgaria and Slovenia, however Greece lagging behind in particular.

Q13. Collaboration between farmers, researchers, policymakers, and civil society is essential to address climate change in agriculture

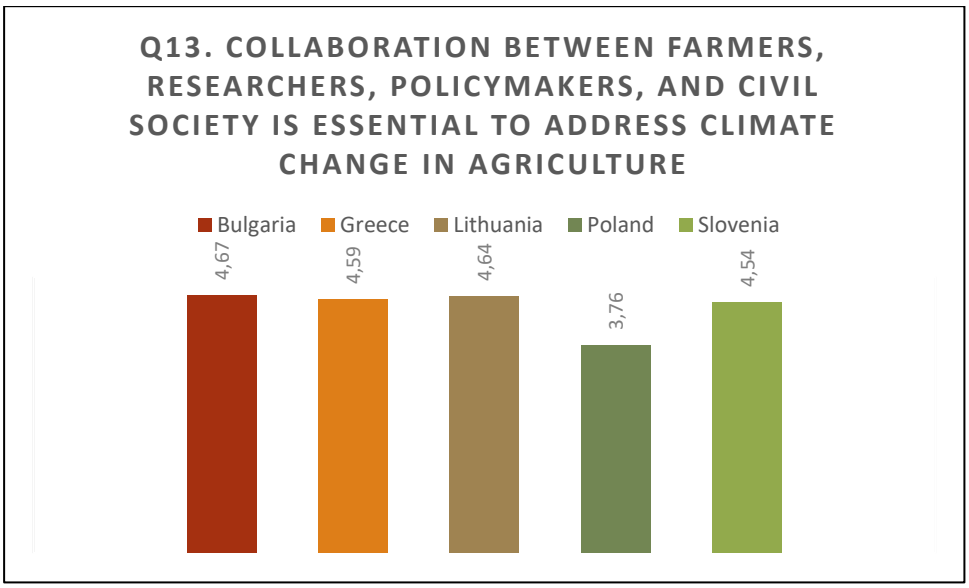

Fig. 52. Distribution of responses regarding the collaboration.

Highest rating: Bulgaria 4.67

Lowest rating: Poland 3.76

Average: 4.39 (highest overall score)

Conclusion: The importance of collaboration is universally recognized in all countries, with the highest ratings in Bulgaria, Greece, and Lithuania.

Overall conclusions for Q5–Q13

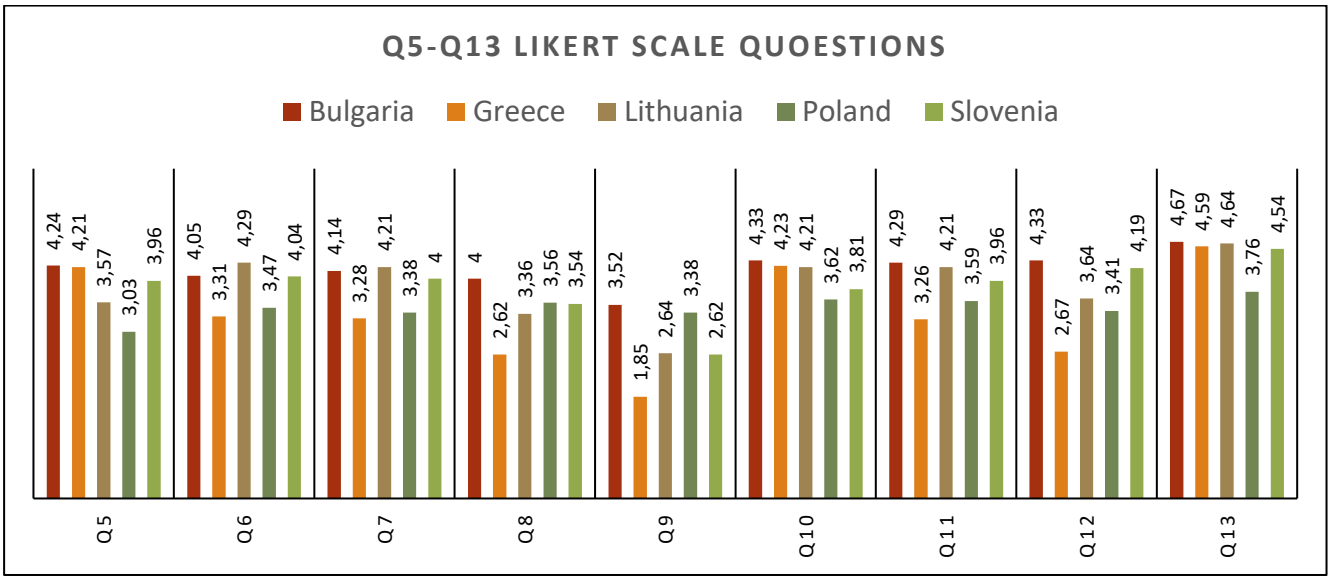

Fig. 53. Distribution of responses according to Likert scale questions.

Strengths: High value is placed on the need for cooperation (Q13), recognition of the impact of the climate crisis (Q5, Q10), and the application of innovation in some countries (Q11).

Weaknesses: Government policies and support systems (Q9 – lowest average) are rated least positively, as well as limited resource availability (Q8) and the use of digital technologies (Q12).

Profiles of the countries:

Bulgaria: high scores for climate crisis recognition and cooperation.

Greece: consistently lower ratings in most areas, particularly Q8, Q9, and Q12.

Lithuania: stands out with the highest awareness and promotion of innovation.

Poland: moderate ratings overall, but relatively critical in Q5 and Q9.

Slovenia: high ratings for cooperation and innovation, but average evaluations for policy and resource availability.

Q14. What aspects need more attention to promote climate-resilient, environmentally sustainable agriculture?

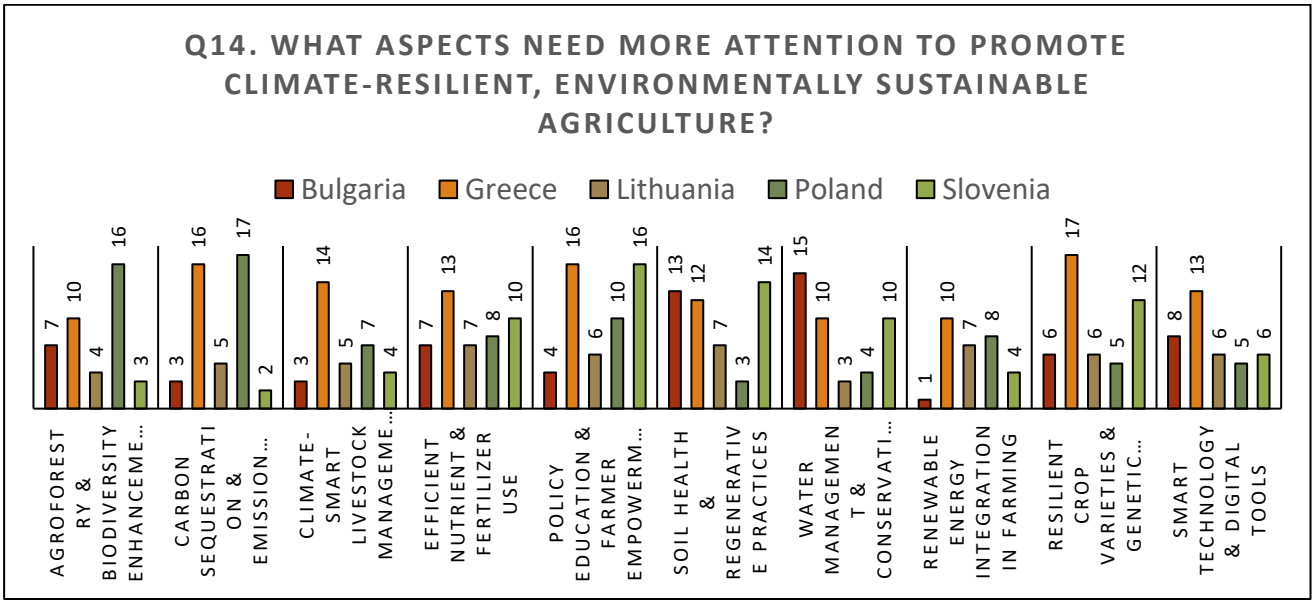

Fig. 54. Distribution of responses regarding the attention to promote climate-resilient, environmentally sustainable agriculture.

Bulgaria: According to respondents, the most attention should be given to water management and protection (22.4%) and soil health and regenerative practices (19.4%). Other important aspects include agroforestry and biodiversity enhancement, as well as efficient fertilizer use (10.4% each).

Greece: The most frequently highlighted aspects are resilient crop varieties and genetic diversity (13%), as well as policy, education and farmer empowerment, and

carbon sequestration and emission reduction (12.2% each). A significant proportion also emphasize climate-resilient livestock farming (10.7%).

Lithuania: Three equally important priorities stand out – efficient fertilizer use, soil health, and renewable energy integration on farms (12.5% each). Resilient crop varieties and digital technologies are also highlighted (10.7% each).

Poland: Carbon sequestration and emission reduction (20.5%) and agroforestry (19.3%) clearly dominate. A significant share also focuses on policy, education, and farmer empowerment (12%), while other areas receive much less attention.

Slovenia: Policy, education, and farmer empowerment (19.8%) and soil health (17.3%) stand out the most. Resilient crop varieties (14.8%) and water management (12.3%) are also important.

Conclusion:
Across all countries, the following areas are identified as top priorities:

Policy, education, and farmer empowerment (11.9%)

Soil health and regenerative practices (11.8%)

Efficient fertilizer use (10.8%)

Water management and protection (10.5%)

Carbon sequestration and emission reduction (10.3%) and resilient crops (10.3%).

Slightly less prominent are agroforestry (9.6%), digital technologies (9.2%), climate-resilient livestock farming (7.9%), and renewable energy integration on farms (7.2%).

Q15. In which areas should more stakeholder capacity building or farmer training be offered?

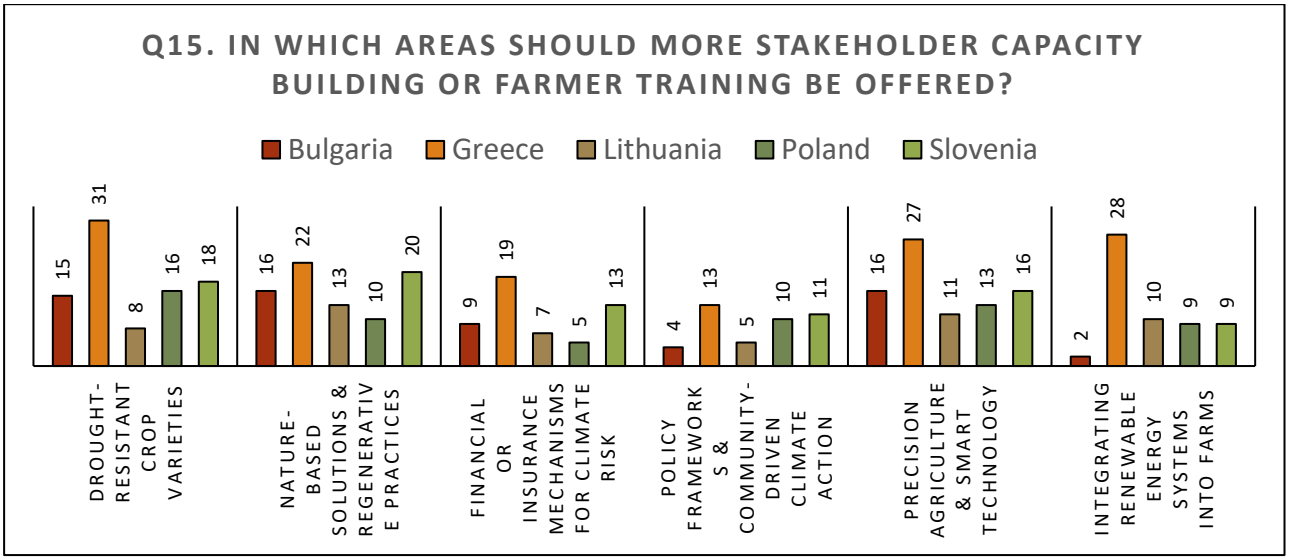

Fig. 55. Distribution of responses regarding the areas requiring more attention.

Bulgaria: Nature-based and regenerative practices (25.8%) and drought-resistant crop varieties (24.2%) were the most frequently chosen, along with precision agriculture and smart technologies (25.8%). Other areas received less attention.

Greece: The greatest emphasis is on the introduction of drought-resistant crop varieties (22.1%), followed by the integration of renewable energy systems on farms (20%) and precision agriculture (19.3%).

Lithuania: Nature-based and regenerative practices (24.1%) and precision agriculture (20.4%) dominate. A considerable share also highlighted renewable energy integration (18.5%) and drought-resistant varieties (14.8%).

Poland: Drought-resistant crop varieties (25.4%) and precision agriculture (20.6%) were the most common selections. Slightly more attention was also paid to policy frameworks and community-driven climate action (15.9%).

Slovenia: Nature-based and regenerative practices (23%) and drought-resistant varieties (20.7%) dominate. A significant share also selected precision agriculture (18.4%).

Conclusion:

Across all countries, the following areas are identified as priorities for capacity building and training:

Drought-resistant crop varieties (21.6%)

Nature-based and regenerative practices (20%)

Precision agriculture and smart technologies (20.4%)

Slightly less emphasis was placed on integrating renewable energy systems into farms (14.3%) and financial or insurance mechanisms for climate risk management (13%). The least emphasized area was policy frameworks and community-driven climate action (10.6%).

Q16. Preferred training formats for outreach or collaboration

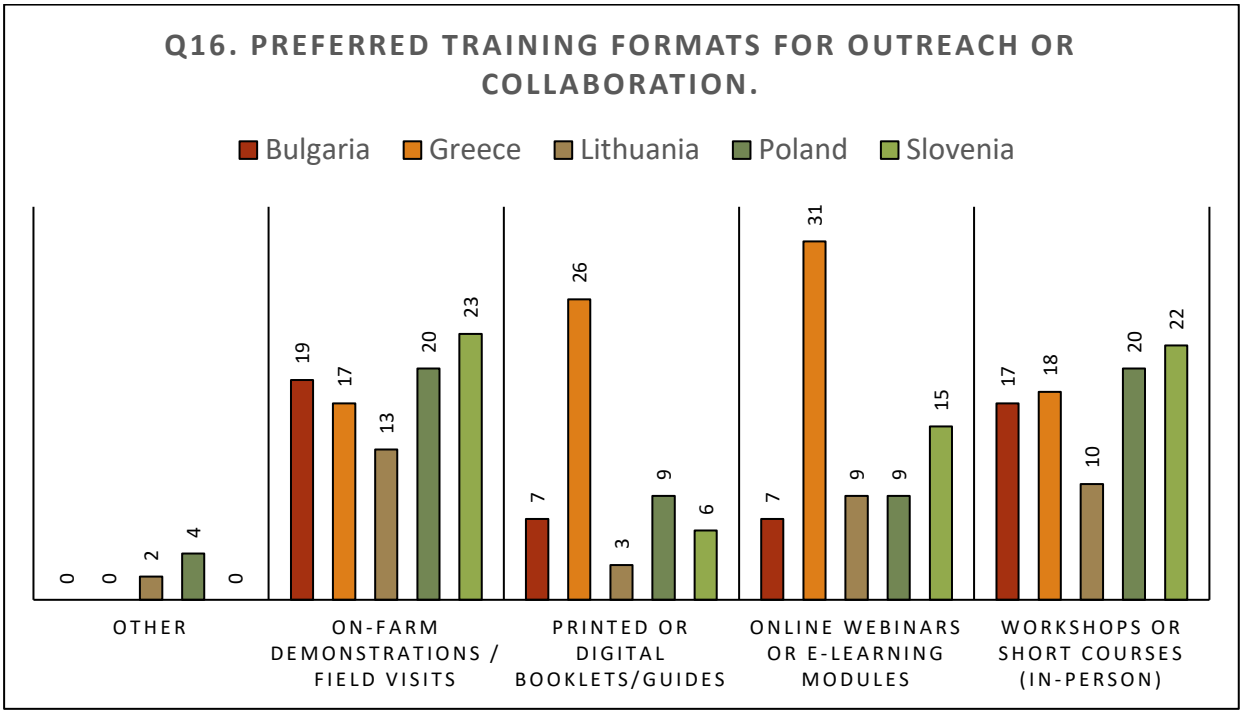

Fig. 56. Distribution of responses regarding the preferred training formats.

Bulgaria: Farm demonstrations/field visits (38%) and practical workshops or short in-person courses (34%) are the most frequently chosen. Less popular are printed or digital materials (14%) and online or distance learning (14%).

Greece: The focus is mainly on online webinars or e-learning modules (33.7%) and printed or digital booklets/guides (28.3%). Farm demonstrations (18.5%) and practical workshops (19.6%) are less commonly selected.

Lithuania: Farm demonstrations (35.1%) and practical workshops (27%) dominate. Online training (24.3%) is chosen less often, and printed or digital materials (8.1%) are the least preferred.

Poland: Practical workshops or short courses (32.3%) and farm demonstrations (32.3%) received the most support. Printed materials (14.5%) and online learning (14.5%) are mentioned less frequently.

Slovenia: The most popular formats are practical workshops/courses (33.3%) and farm demonstrations (34.8%). Less preferred are online learning (22.7%) and printed/digital materials (9.1%).

Conclusion:
Across all countries, the most popular training formats are:

Farm demonstrations and field visits (30%)

Practical workshops and short in-person courses (28.4%)

Online webinars or e-learning modules (23.1%)

Printed or digital booklets/guides are less popular (16.7%).

Q17. Which support resources would enhance climate resilience across farming systems?

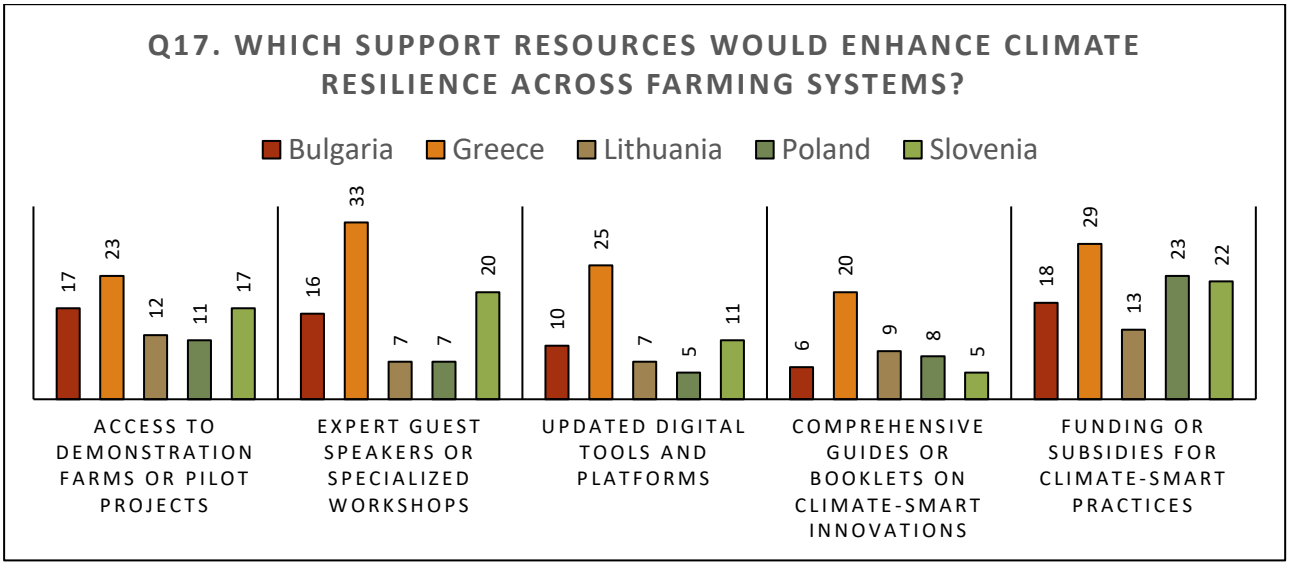

Fig. 57. Distribution of responses regarding the support resources.

Bulgaria: The need for support or subsidies (26.9%) and access to demonstration farms or pilot projects (25.4%) are most emphasized. Slightly less important are expert seminars and specialized workshops (23.9%). The least valued are digital tools (14.9%) and comprehensive guides (9%).

Greece: The most frequently mentioned are expert seminars and specialized workshops (25.3%) and the need for support/subsidies (22.3%). A significant proportion also highlight digital tools and platforms (19.2%), while comprehensive guides (15.4%) are mentioned least often.

Lithuania: Support and subsidy mechanisms (27.1%) and demonstration farms (25%) receive the most attention. Comprehensive guides (18.8%) are mentioned less frequently, while expert seminars (14.6%) and digital tools (14.6%) remain lower priorities.

Poland: The need for financial support or subsidies clearly dominates (42.6%). Other areas lag significantly behind – demonstration farms (20.4%) and comprehensive guides (14.8%). Digital tools (9.3%) are the least selected.

Slovenia: The main priorities are financial support/subsidies (29.3%) and expert workshops (26.7%). A significant proportion also emphasize demonstration farms (22.7%). Comprehensive guides (6.7%) are the least chosen.

Conclusion:
Overall, across all countries, the most important support resources are:

Financial support or subsidies (28.1%)

Expert seminars and specialized workshops (22.2%)

Access to demonstration farms or pilot projects (21.4%)

Updated digital tools and platforms (15.5%)

Comprehensive guides or booklets on climate-smart innovations (12.8%) are considered less important.

Open questions (Q18–Q21) – summary and highlights

Q18. What are the biggest challenges your organization sees in helping farmers adapt to climate change?

Common across all countries:

Finance and risk. High initial investments, limited access to credit/subsidies, weak insurance markets; smaller farms are particularly vulnerable.

Lack of practice and localized information. Few field-tested examples, weak advisory services, and difficulties applying scientific knowledge.

Water and soil. Droughts, water shortages, erosion, and the need for modern irrigation systems and soil regeneration.

Institutional barriers. Bureaucracy, fragmented policies, and slow access to support.

Social factors. Habitual inertia, distrust of innovation and digitalization, lack of time.

By country – in brief:

Bulgaria: Lack of financing and fragmented policy instruments; specific sectors (greenhouses, beekeeping) emphasize energy prices, microclimate management, and new pests.

Greece: Low level of practical experience, little reliable local data and examples; lack of digital skills and equipment.

Lithuania: Funding limitations, excessive bureaucracy, and a lack of motivation or resistance to change among some farmers.

Poland: Extreme weather events, knowledge gaps, and limited funding; frequent mentions of inadequate infrastructure and the administrative burden of the “green course.”

Slovenia: Lack of time and practice, insufficient funding and advisory support; deep-rooted habits on farms, and threats to water and soil resources.

Q19. What types of support or collaboration (e.g., policy reform, training programs, funding, networking) would help address these challenges?

Common across all countries:

Financial instruments: grants, microcredits, low-interest loans, climate risk insurance, and faster, simpler procedures.

Practical training and mentoring: field days, training of trainers, and continuous consultations.

Policy and governance improvement: clearer policy signals, reduced bureaucracy, cross-sectoral coordination, and better local data systems.

Digitalization: reliable weather and early-warning platforms, sensors, GIS, mobile or app-based advisory tools, and access in regional languages.

By country – in brief:

Bulgaria: Policy reforms (CAP with a stronger focus on sustainability), accessible financing, regional bioeconomy hubs, and networking.

Greece: Regional innovation and advisory hubs, cooperation with research institutions and start-ups.

Lithuania: State support combined with capacity building, clearer information on subsidies, and stronger networking between science and municipalities.

Poland: Training and financing (for irrigation and storage), joint projects, and cooperative initiatives.

Slovenia: Internships abroad, mandatory training courses, systemic (non-project-based) solutions, and faster access to funding.

Q20. Has your organization supported or observed any successful adaptation methods or technologies?

Common directions of success:

Irrigation and water management: drip systems, water retention, and modernization of drainage and irrigation infrastructure.

Soil and agroecology: mulching, cover or green crops, and reduced tillage (no-till/strip-till).

Crop breeding and livestock solutions: more resilient plant varieties and, in beekeeping, hardier bee strains.

Digitalization and precision farming: sensors, remote monitoring, and automated greenhouse microclimate control.

Energy: solar and biogas solutions, particularly in greenhouse production.

By country – in brief:

Bulgaria: Agroforestry, mulching, greenhouse automation, beekeeping innovations, precision agriculture; in some cases limited by costs or administrative barriers.

Greece: Precision technologies, sensor-based irrigation, and effective combinations of theoretical training with field demonstrations.

Lithuania: No-till technologies, cover and mixed crops; success often linked to financial incentives.

Poland: Drought-resistant varieties, smart farming, water retention systems; investment costs remain a barrier.

Slovenia: Anti-hail and frost protection systems, minimal tillage, and widespread use of cover crops.

Q21. Looking ahed, what new climate-related risks or opportunities do you foresee in agriculture over the next 5–10 years?

General trends

Risks: more frequent extreme events (droughts, heatwaves, heavy rains/frosts), water shortages, new pests and diseases, market and policy uncertainty.

Possible directions: digitalization and precision technologies, more resilient varieties and agroecological practices, carbon markets, energy independence, and shorter supply chains.

Career trajectories: sustainable or regenerative farming (often self-managed), consulting and education, and research.

By country – in brief

Bulgaria: focus on extreme weather, water and soil protection, digitalization; sector-specific visions (greenhouses, beekeeping, rose cultivation).

Greece: water scarcity, transition to less carbon-intensive crops; potential for digital solutions.

Lithuania: need for meteorological infrastructure, resilient crops, irrigation and drainage systems.

Poland: droughts and heatwaves, soil acidification, new pests; opportunities in new technologies and ecosystem restoration.

Slovenia: increasing frequency of extreme events, water and soil stress, growing digitalization and AI, but also risks related to structural changes in farming.

General insights and quick recommendations

"Less theory – more fieldwork." Establish targeted demonstration farms, sector- and region-specific modules, and mandatory qualifications for trainers and agricultural advisors.

Finance as leverage. Develop faster and simpler microfinance and insurance schemes; introduce tiered grants for equipment (sensors, drip systems, renewable energy).

Data ecosystem. Set up local weather and early-warning stations, apps in local languages, and open data systems for farm-level decision-making.

Water and soil – priority #1. Implement national programs for water harvesting and storage, precision irrigation infrastructure, and regenerative practices.

Collaboration platforms. Build continuous farmer–science–policy networks and sector-specific working groups (e.g., greenhouses, beekeeping).

Career pathways for youth. Promote internships, dual (practice + theory) training programs, and digital skills packages to turn Q21 visions into real career opportunities.

3.1. Summary and Conclusions – Stakeholders' Survey

The survey of 134 stakeholder representatives from Bulgaria, Greece, Lithuania, Poland, and Slovenia highlights the perspectives of key agricultural organizations—including farming associations, research institutions, cooperatives, and NGOs—on climate-resilient agriculture. Most respondents come from farming and research sectors, and nearly half represent organizations with more than 20 years of experience, confirming strong institutional expertise. A majority (59.7%) already engage in climate-related training, though participation varies widely by country—very high in Slovenia, Lithuania, and Bulgaria, but limited in Greece.

Overall, stakeholders recognize the strong and growing impact of the climate crisis on agricultural productivity, with an average agreement score of 3.8. They emphasize the importance of collaboration between farmers, researchers, policymakers, and civil society (average 4.39, the highest overall indicator). However, government support and policy adequacy receive the lowest ratings (average 2.73), reflecting a shared perception that public measures remain insufficient. Lithuania and Bulgaria stand out for innovation and digital tool use, while Greece consistently records lower values across multiple dimensions, including resources and technological access.

Priority areas identified for strengthening climate-resilient agriculture include policy, education, and farmer empowerment, soil health and regenerative practices, and efficient fertilizer and water management. Stakeholders call for increased capacity building in drought-resistant crops, regenerative agriculture, and precision technologies, highlighting the need for practical, science-based, and scalable solutions. Preferred training formats are farm demonstrations (30%) and practical workshops (28%), underscoring the demand for hands-on approaches over theoretical instruction.

Open-ended responses emphasize persistent financial barriers, limited access to localized data and demonstration farms, and bureaucratic complexity as key obstacles

to adaptation. Stakeholders call for simplified funding schemes, microfinance, and climate insurance, as well as digital infrastructure for early-warning systems and localized advisory tools. Water and soil management remain top priorities for future resilience.

In conclusion, the survey reveals that stakeholders possess high awareness and willingness to cooperate but face systemic barriers—mainly financial and institutional. Future strategies should therefore focus on bridging policy with practice, strengthening demonstration-based and digital learning, and ensuring coordinated financing and advisory mechanisms to accelerate climate adaptation across Europe's farming systems.

4. Conclusions on Focus Groups

Conclusions by the country (Focus group)

6 focus groups we organised by the project partners.

BULGARIA

Bulgarian farmers are clearly experiencing the effects of climate change – from drought and unpredictable rainfall to crop diseases, pests, and feed shortages. They are actively seeking solutions and applying various practices (no-till, agroecology, drip irrigation, solar energy), but progress is limited by several factors: lack of funding, bureaucratic support schemes, poorly adapted training programs, and insufficient dissemination of practical knowledge. Farmers emphasized that support measures need to be more flexible and better adapted to different types and sizes of farms. There is also a strong need for practical training adapted to local conditions and closer cooperation with scientific and educational institutions.

GREECE (Group #1)

The focus group revealed that farmers in Aliartos, Viotia, are highly aware of the growing risks posed by climate change and are already taking steps—within their means—to adapt. Their lived experiences reflect the broader challenges of farming in Central Greece, where extreme weather, prolonged drought, and shifting seasonal patterns are no longer occasional disruptions but recurring realities.

Despite their motivation and openness to innovation, the pace of adaptation remains limited by structural barriers. Financial constraints, complex and inflexible policy frameworks, and a lack of accessible advisory services hinder wider adoption of climate-resilient practices. Moreover, current public support measures often fail to meet the needs of small and diversified farms, which form the backbone of agriculture in regions like Viotia.

Nevertheless, these farmers demonstrate a strong appetite for practical, peer-based learning and a willingness to engage with researchers, educators, and policymakers, if those collaborations are built on respect, local relevance, and continuity.

Going forward, there is a clear need for:

- Simplified and inclusive support schemes tailored to smaller farms;

- Localized training and demonstration projects co-designed with farmers;

Flexible, participatory policy-making processes that integrate the voices of rural practitioners from the outset.

In conclusion, empowering these farmers means not just transferring knowledge, but also building the right enabling environment, one that supports innovation, reduces bureaucracy, and puts farmers at the center of the green transition in Greek agriculture.

GREECE (Group #2)

Overall, the focus group paints a consistent picture: farmers in Kavala and Drama are already experiencing the effects of climate change (hotter and drier summers interspersed with intense storms, the spread of pests and diseases, and higher pumping costs), and are making small, pragmatic adaptations (such as tighter irrigation scheduling, cover crops and residue retention, canopy adjustments, selective drip irrigation and modest varietal shifts). However, broader uptake is hindered by a three-part bottleneck: cost (up-front investment and energy bills), complexity (bureaucracy and shifting policy targets) and capability (scarce, localised, practical advice). The farmers request hands-on seasonal training based on local demonstration plots, short blended follow-ups, simple decision-making tools and micro-grants for 'small but high-impact' equipment such as moisture probes, weather stations and shade/drip systems. They also want durable regional collaboration with

open local data and continuity beyond pilots. For the Handbook, this translates into highly contextualised, step-by-step guidance that links field-tested practices with clear cost–benefit information, quick-start protocols and navigable funding pathways, making adoption feel feasible rather than risky.

LITHUANIA

Lithuanian farmers emphasized the growing impact of climate change: extreme weather, unpredictable seasons, new pests, and diseases are making farms less predictable and less profitable. Farmers are quite conservative and cautious about new technologies, but there are attempts to switch to low-input farming, solar energy, and ecological measures. The main obstacles are financial barriers, the complexity of support schemes, lack of knowledge, and poor access to practical advice. Discussions highlighted the need for closer cooperation between farmers, scientists, and government institutions, as well as training focused on practical examples and the experiences of other farmers. Smaller farms feel insufficiently included in support systems, which poses a risk to their future resilience.

POLAND

The focus group demonstrated that farmers are highly aware of climate-related risks and are actively exploring ways to adapt. However, the pace of adoption is slowed by financial, institutional, and information-related barriers.

Participants are eager to engage in practical learning, collaborative innovation, and policy development, provided that support mechanisms become simpler, fairer, and better aligned with real farm needs.

SLOVENIA

Slovenian farmers face similar climate change challenges – droughts, frosts, heat waves, feed shortages, and declining livestock productivity. Some are already implementing adaptation measures (cover nets, green cover, no-till farming, new plant and animal breeds), but emphasize that many measures would not be possible without subsidies. The biggest barriers are finances, traditional habits, and bureaucracy. Farmers are critical of many projects and programs because the real benefits are often negligible and the eligibility criteria are not adapted to smaller farms. They advocate practical, region-specific solutions developed in collaboration with scientists and consultants, as well as a closer integration of theory and practice in national agricultural policy.

4.1. Summary of results of the focus groups

Farmers in all five countries are clearly experiencing the effects of climate change, which directly impact their income, planning, and long-term farm sustainability. Although some adaptation practices (drip irrigation, no-till farming, solar energy, agroecology) are already being implemented, their expansion is limited by four common factors:

- Financial barriers – high initial investments, and support schemes are often inaccessible to smaller farms.
- Bureaucracy and politics – support measures are too complex, inflexible, and often geared towards large farms.
- Lack of knowledge – farmers lack practical training tailored to local conditions; traditional seminars are often too theoretical.
- Habits and social factors – fear of changing established practices, especially among older farmers.

In the context of vocational education and training, this means that it is necessary to:

- Develop practical training programs adapted to local conditions, covering both the integration of traditional knowledge and the application of modern technologies;
- Encourage cooperation and learning among farmers (model farms, field days, visits);
- Ensure that training is accessible to farms of different sizes, especially small ones;

Strengthen cooperation between farmers, scientists, vocational training institutions, and authorities in order to not only transfer knowledge, but also to jointly develop and test solutions.

The overall picture shows that farmers are motivated to learn and adapt, but they need a clearer, less bureaucratic support system and more practical vocational training to turn the challenges of climate change into opportunities for sustainable farming.

5. Summary and Recommendations

5.1. Overview

The combined findings from surveys and focus groups conducted among *educators*, *learners*, *stakeholders*, and *farmers* in five partner countries—**Bulgaria, Greece, Lithuania, Poland, and Slovenia**—reveal a consistent and convergent understanding of climate change as a growing challenge to agricultural sustainability. Across all groups, there is a strong awareness of climate risks and a shared motivation to build resilience through **education, innovation, and collaboration**. However, the transition from awareness to action remains hindered by limited resources, bureaucratic complexity, and insufficient practical training.

5.2. Educators

Educators demonstrate moderate confidence and preparedness to teach about the climate crisis, with particularly strong cooperation networks in Bulgaria and Lithuania. However, many face shortages of **practical materials, digital resources, and institutional support**. They call for more **field-based learning, demonstration farms, and hands-on teaching tools** that connect theory to real farm practices. Greater alignment between educational content, policy priorities, and farmers' needs is required to make climate education more relevant and impactful.

5.3. Learners

Agriculture students and trainees show **high motivation and openness** to climate-resilient farming. While theoretical understanding is generally good, learners stress a lack of **practical experience and real-life examples**. They prefer **hands-on workshops, farm visits, and blended online learning** over traditional lectures. The most desired

training areas include **precision agriculture, climate adaptation strategies, and regenerative practices**. Learners envision their future in sustainable or technology-driven farming but request more **localized, accessible, and economically realistic** training programs.

5.4. Stakeholders

Organizations representing farmers, cooperatives, research institutions, and NGOs acknowledge the **clear and growing impact of climate change on productivity and animal health**. They emphasize the importance of **collaboration among farmers, researchers, and policymakers**, while highlighting that **bureaucratic and fragmented policies** remain key barriers to progress. Stakeholders recommend **financial incentives, simplified grant procedures, and capacity building** in drought-resistant crops, precision technologies, and nature-based farming. Digital innovation is advancing, but needs broader support and coordination.

5.5. Focus Groups

Farmers across all partner countries are already **experiencing direct impacts of climate change**—droughts, heatwaves, floods, and new pests—affecting both productivity and income. Many have adopted adaptive practices such as **no-till farming, drip irrigation, and solar energy**, yet the expansion of these measures is slowed by **financial, institutional, and informational barriers**.

Farmers demand **simple, inclusive support schemes**, **localized training**, and **peer learning networks** that promote shared experience and trust. Small farms, in particular, require targeted support to remain resilient and competitive.

5.6. Common Priorities

Across all groups, five key priorities clearly emerge:

1. **Practical, localized training** integrated into vocational education and lifelong learning.
2. **Simplified financial and policy frameworks** to reduce bureaucracy and improve access to funding.
3. **Strong cooperation networks** linking farmers, educators, researchers, and policymakers.
4. **Digital tools and data-driven innovation** to support decision-making and adaptation.
5. **Soil health, water management, and regenerative practices** as core pillars of resilience.

5.7. Final Recommendation

The findings collectively point to a single strategic direction: Europe's agricultural transition toward climate resilience will succeed only if **knowledge becomes action**. This requires transforming education, training, and policy into **hands-on, cooperative, and financially accessible systems** that empower farmers, educators, and learners alike. Building a culture of continuous learning, innovation, and collaboration will be essential to turning the challenges of climate change into sustainable opportunities for the agricultural sector.

6. Annex

Questions for Survey for Educators (Trainers, VET Providers)

General Questions:

1. **Please select your country:**
   - ○ Lithuania
   - ○ Greece
   - ○ Slovenia
   - ○ Poland
   - ○ Bulgaria
   - ○ Other (please specify)

2. **What is your primary role in education?**
   - ○ Trainer
   - ○ Teacher
   - ○ Consultant
   - ○ Other (please specify)

3. **How many years have you been involved in agricultural education/training?**
   - ○ Less than 5 years
   - ○ 5-10 years
   - ○ 11-20 years
   - ○ Over 20 years

4. **Have you received training in climate crisis adaptation/mitigation related to agriculture?**
   - ○ Yes
   - ○ No

5. **What type of educational institution do you work for?**
   - ○ VET school
   - ○ University
   - ○ Independent training
   - ○ Other (please specify)

6. **Training format(s) you mostly use (please select all that apply):**
   - ☐ Classroom-based (in-person)
   - ☐ Online courses
   - ☐ Field demonstrations / on-farm visits
   - ☐ Blended learning (mix of in-person and online)
   - ☐ Other (please specify)

Current situation (Likert Scale 1 = Strongly Disagree, 5 = Strongly Agree):

7. **Agricultural training programs adequately cover sustainable farming practices and addresses climate resilience.**
   ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

8. **Climate crisis education is a key part of my curriculum/training programs.**
   ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

9. **I feel confident in teaching about climate crisis and its impact on agriculture.**
   ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

10. **There are sufficient teaching materials available to support climate education in agriculture.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

11. **I collaborate with farmers and industry stakeholders to understand real-world agricultural challenges.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

12. **My institution provides adequate support for professional development on climate-related topics.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

13. **Learners show a strong interest in sustainable farming and climate resilience.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

14. **Government policies support the integration of climate crisis topics into agricultural education.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

15. **There is enough practical, hands-on training to teach effective climate adaptation strategies.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

16. **On-farm demonstrations or field visits to showcase climate-smart practices are an important part of my training.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

17. **I assess participants' understanding of climate crisis and sustainable practices before designing my training modules.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

18. **I frequently engage with local, national or international agricultural bodies to update my training content on climate resilience.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

19. **I use digital platforms or technologies (e.g., satellite data, precision farming apps) to illustrate climate crisis impacts or adaptation strategies.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

20. **I am aware of policy incentives or grants that encourage farmers to adopt climate-smart practices.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

<u>Fields to Improve/Need for Improvement:</u>

21. **What are the most important aspects that need to be addressed more closely when it comes to climate-resilient agriculture with less negative environmental impacts? (Please select the 3 you consider most important.)**
    - ☐ Agroforestry & Biodiversity Enhancement
    - ☐ Carbon Sequestration & Emission Reduction
    - ☐ Climate-Smart Livestock Management
    - ☐ Efficient Nutrient & Fertilizer Use
    - ☐ Policy, Education & Farmer Empowerment
    - ☐ Renewable Energy Integration in Farming
    - ☐ Resilient Crop Varieties & Genetic Diversity
    - ☐ Smart Technology & Digital Tools
    - ☐ Soil Health & Regenerative Practices
    - ☐ Water Management & Conservation
    - ☐ Other (please specify)

22. **Which of the following areas would you like more in-depth training on? (Please select all that apply.)**

- ☐ Drought-resistant crop varieties
- ☐ Precision agriculture technology
- ☐ Nature-based solutions and regenerative practices
- ☐ Integrating renewable energy systems into farms
- ☐ Innovative tools & advanced agricultural technologies
- ☐ Policy advocacy & community-driven climate action
- ☐ Financial or insurance mechanisms for climate risk
- ☐ Other (please specify)

23. What additional resources would most enhance your ability to teach climate-smart agriculture? (Please select all that apply.)

- ☐ Funding or budget for training materials
- ☐ Access to demonstration farms
- ☐ Expert guest speakers or specialized workshops
- ☐ Updated digital tools and platforms
- ☐ Comprehensive booklets or guides on climate-smart innovations
- ☐ Other (please specify)

Challenges & Reflections:

24. What are the main challenges you face in teaching climate crisis and resilience farming practices, and what resources would help?

Max 2000 symbols

25. What do you see as the biggest barrier preventing farmers from adopting climate-resilient techniques, and how might training address this?

Max 2000 symbols

26. Looking ahead 10 years, what new or emerging climate challenges do you anticipate needing to address in agricultural training?

Max 2000 symbols

Remarks.

☐ - Checkbox. Can be selected multiple times in the same question.

○ - Radio button. Can only be selected once in the same question.

	- Space for text.

Questions for Survey for Learners (Agriculture Students, Trainees)

General Questions:

1. **Please select your country:**
   - ○ Lithuania
   - ○ Greece
   - ○ Slovenia
   - ○ Poland
   - ○ Bulgaria
   - ○ Other (please specify)

2. **What is your current level of study or training?**
   - ○ High school
   - ○ VET school
   - ○ University
   - ○ Other (please specify)

3. **What is your main field of study or interest in agriculture?**
   - ○ Crop production
   - ○ Livestock farming
   - ○ Agribusiness
   - ○ Mixed farming (crops & livestock)
   - ○ Other (please specify)

4. **Have you had any prior education about climate crisis and its impact on agriculture?**
   - ○ Yes
   - ○ No

5. **Do you plan to work in the agriculture sector after your studies?**
   - ○ Yes
   - ○ No
   - ○ Not sure

Current situation (Likert Scale 1 = Strongly Disagree, 5 = Strongly Agree):

6. **How aware are you feel about emerging climate threats (e.g., extreme weather events, new pests/diseases) that might affect future farming?**
   ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

7. **My training provides me with a strong understanding of climate crisis impacts on agriculture.**
   ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

8. **My training includes practical skills to help address climate challenges in farming.**
   ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

9. **I am interested in learning more about climate-resilient farming techniques.**
   ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

10. **There is sufficient focus on sustainable and adaptive farming methods in my coursework.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

11. **My instructors/trainers are well-equipped to teach about climate crisis in agriculture.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

12. **I believe that agricultural education includes enough real-world examples of adaptation to climate crisis.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

13. **I am confident that my education has prepared me to tackle climate-related agricultural challenges.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

14. **I would participate in additional training programs focused on climate resilience in agriculture.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

Fields to Improve/Need for Improvement:

15. **What are the most important aspects that need to be addressed more closely when it comes to climate-resilient agriculture with less negative environmental impacts? (select the 3 you consider most important)**
    - ☐ Agroforestry & Biodiversity Enhancement
    - ☐ Carbon Sequestration & Emission Reduction
    - ☐ Climate-Smart Livestock Management
    - ☐ Efficient Nutrient & Fertilizer Use
    - ☐ Policy, Education & Farmer Empowerment
    - ☐ Renewable Energy Integration in Farming
    - ☐ Resilient Crop Varieties & Genetic Diversity
    - ☐ Smart Technology & Digital Tools
    - ☐ Soil Health & Regenerative Practices
    - ☐ Water Management & Conservation
    - ☐ Other (specify)

16. **Which formats do you find most effective for learning about climate-smart agriculture? (Please select all that apply.)**
    - ☐ Hands-on workshops or field visits
    - ☐ Online modules or webinars
    - ☐ Traditional classroom lectures
    - ☐ Self-paced digital platforms or app
    - ☐ Other (please specify)

17. **Which of the following areas would you like more in-depth training on? (Please select all that apply.)**
    - ☐ Precision agriculture & smart technologies
    - ☐ Regenerative farming or nature-based solutions
    - ☐ Renewable energy integration
    - ☐ Policy frameworks & community-driven action
    - ☐ Climate adaptation strategies (e.g., drought-resistant crops)
    - ☐ Other (please specify)

Challenges & Reflections:

18. **What skills or knowledge do you think are missing in your training that would better prepare you for climate-resilient agriculture?**

Max 2000 symbols

19. **In your experience, what are the biggest obstacles to learning or adopting climate-smart farming techniques?**

Max 2000 symbols

20. **What suggestions do you have for your institution or training program to improve climate-related agricultural education?**

Max 2000 symbols

21. **Where do you see yourself in 5-10 years regarding climate-smart agriculture? (e.g., working on a sustainable farm, pursuing advanced research, being an advocate for regenerative practices, etc.)**

Max 2000 symbols

Remarks.
☐ - Checkbox. Can be selected multiple times in the same question.
○ - Radio button. Can only be selected once in the same question.
- Space

Questions for Survey for Stakeholder Organizations

General Questions:

1. **Please select your country of operation:**
   - ○ Lithuania
   - ○ Greece
   - ○ Slovenia
   - ○ Poland
   - ○ Bulgaria
   - ○ Other (please specify)

2. **Type of organization?**
   - ○ Environmental Non-Governmental Organization
   - ○ Farming association or union
   - ○ Research institution
   - ○ Governmental agency
   - ○ Cooperative
   - ○ Other (please specify)

3. **Years your organization has been active in agriculture or environmental field?**
   - ○ Less than 5 years
   - ○ 5-10 years
   - ○ 11-20 years
   - ○ Over 20 years

4. **Does your organization offer or engage in training related to climate crisis and resilient agriculture?**
   - ○ Yes
   - ○ No

Current situation (Likert Scale 1 = Strongly Disagree, 5 = Strongly Agree):

5. **Climate crisis has significantly impacted agricultural productivity in the regions we work in.**
   ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

6. **Our organization is well-informed about climate crisis and its implications for agriculture.**
   ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

7. **We actively support or implement climate adaptation strategies in agricultural systems.**
   ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

8. **We have access to or provide sufficient resources and training to support resilience in farming communities.**
   ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

9. **Current government policies and support systems are adequate to help farmers face climate challenges.**
   ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

10. **We observe increasing stress on crop/animal health due to climate crisis.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

11. **Our organization advocates for or assists in adopting innovative farming techniques to mitigate climate impacts.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

12. **We promote or use digital tools (e.g., remote sensing, monitoring apps, early warning systems) for climate adaptation.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

13. **Collaboration between farmers, researchers, policymakers, and civil society is essential to address climate change in agriculture.**
    ○ 1, ○ 2, ○ 3, ○ 4, ○ 5

Fields to Improve/Need for Improvement:

14. **What aspects need more attention to promote climate-resilient, environmentally sustainable agriculture? (Please select the 3 you consider most important.)**
    □ Agroforestry & Biodiversity Enhancement
    □ Carbon Sequestration & Emission Reduction
    □ Climate-Smart Livestock Management
    □ Efficient Nutrient & Fertilizer Use
    □ Policy, Education & Farmer Empowerment
    □ Renewable Energy Integration in Farming

☐ Resilient Crop Varieties & Genetic Diversity
☐ Smart Technology & Digital Tools
☐ Soil Health & Regenerative Practices
☐ Water Management & Conservation
☐ Other (please specify)

15. **In which areas should more stakeholder capacity building or farmer training be offered? (Please select all that apply.)**
☐ Drought-resistant crop varieties
☐ Precision agriculture & smart technology
☐ Nature-based solutions & regenerative practices
☐ Integrating renewable energy systems into farms
☐ Financial or insurance mechanisms for climate risk
☐ Policy frameworks & community-driven climate action
☐ Other (please specify)

16. **Preferred training formats for outreach or collaboration. (Please select all that apply.)**
☐ On-farm demonstrations / field visits
☐ Workshops or short courses (in-person)
☐ Online webinars or e-learning modules
☐ Printed or digital booklets/guides
☐ Other (please specify)

17. **Which support resources would enhance climate resilience across farming systems? (Please select all that apply.)**
☐ Funding or subsidies for climate-smart practices
☐ Access to demonstration farms or pilot projects
☐ Expert guest speakers or specialized workshops
☐ Updated digital tools and platforms
☐ Comprehensive guides or booklets on climate-smart innovations
☐ Other (please specify)

Challenges & Reflections:

18. What are the biggest challenges your organization sees in helping farmers adapt to climate change

Max 2000 symbols

19. What types of support or collaboration (e.g., policy reform, training programs, funding, networking) would help address these challenges?

Mx 2000 symbols

20. Has your organization supported or observed any successful adaptation methods or technologies? If so, please share what worked (or didn't) and why.

Mx 2000 symbols

21. Looking ahead, what new climate-related risks or opportunities do you foresee in agriculture over the next 5–10 years?

Mx 2000 symbols

Remarks.
☐ - Checkbox. Can be selected multiple times in the same question.
○ - Radio button. Can only be selected once in the same question.

- Space

Questions for Focus group (Farmers)

1. How do you perceive the impact of climate change on agriculture in your region? Do you feel real changes on your farm and which?

2. What climate-resilient farming practices (if any) have you already tried? What technological or natural solutions (e.g. precision agriculture, renewable energy, agroecology) do you see as promising on your farm? What were the results?

3. What do you think are the biggest obstacles for farmers in adopting climate resilient practices? (e.g. lack of knowledge, finances, habits, politics)

4. What type of training or support would you most benefit from? How would you like to receive information (e.g. field days, online courses, visits to other farms)?

5. Are the existing support measures, subsidies or policy programs that promote climate change mitigation in agriculture accessible and effective for you?

6. What do you think good collaboration between farmers, scientists, educational institutions and government authorities should look like to achieve climate resilience?