



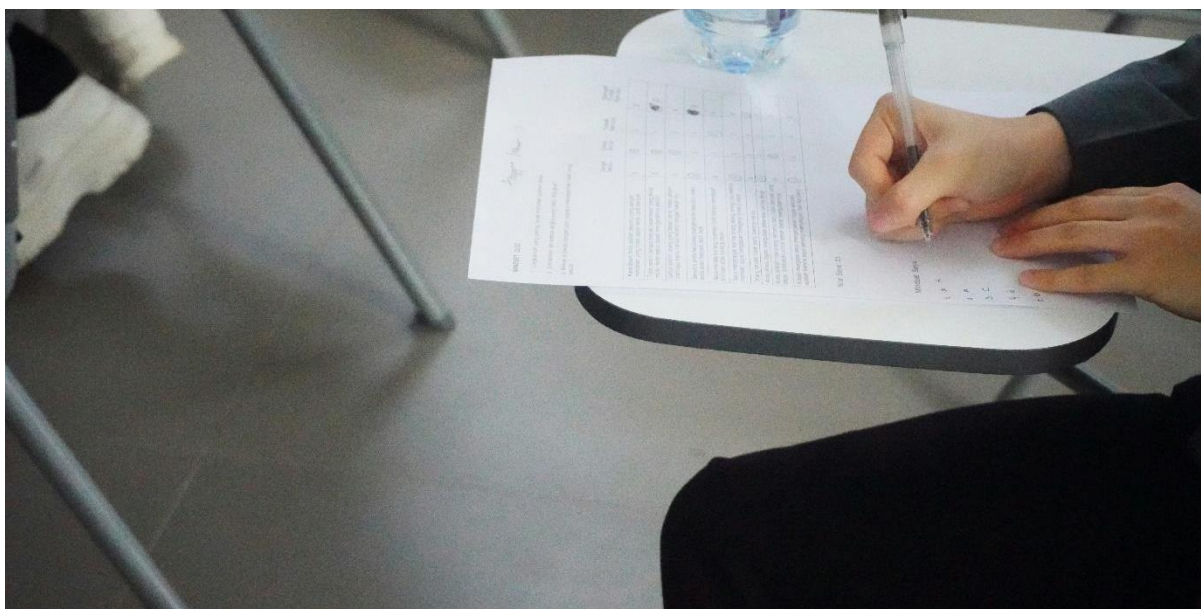
AGFORWEB



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**Result: Report No.6 - Quality Assurance Report**



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<b>Author/s of the deliverable</b>	Martina Kičić, Dijana Vuletić
<b>Contact</b>	Dijana Vuletić, PhD - Croatian Forest Research Institute, Cvjetno naselje 41, 10450 Jastrebarsko, Croatia - e-mail: <a href="mailto:dijanav@sumins.hr">dijanav@sumins.hr</a>  Martina Kičić, PhD - Croatian Forest Research Institute, Cvjetno naselje 41, 10450 Jastrebarsko, Croatia - e-mail: <a href="mailto:martinak@sumins.hr">martinak@sumins.hr</a>
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## ACRONYMS / ABBREVIATIONS

QA - Quality Assurance

CFRI - Croatian Forest Research Institute

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## OBJECTIVES AND SCOPE OF ACTIVITY

### **Overall objective**

The overall objective of the Quality Assurance (QA) Report is to provide a quality assessment of the activities carried out during the AGFORWEB project. This report will be presented in accordance with the pre-assessment and Quality Assurance documents developed for the AGFORWEB project, where the QA committee defined quality standards, methods for quality assessment, and methods for identifying and correcting the problems encountered during the project implementation, which were followed throughout the project. Through the implementation of this activity, internal and external monitoring was used to ensure project efficiency, progress, and continuous improvement following the defined standards and schedule.

### **Objectives of the report**

The report aims to provide an overview and results of the quality assessment of the AGFORWEB project's activities. It thoroughly analyzes the external quality assessment of study visits, guest lectures, workshops with the local community, new curricula, new materials, and the website. At the end of this document, the final evaluation of the project results from a quality assurance point of view is presented.

## 1. INTRODUCTION

Quality assurance (QA) is a quality management process that establishes standards, guidelines, and procedures to prevent quality issues and maintain a product's or service's integrity throughout its development.

The Quality Assurance Plan [1] is developed as the first AGFORWEB project output to define the main procedures to be followed by the partners to ensure the optimal quality of the project activities, results, and management in line with the AGFORWEB project Grant Agreement, the Partnership Agreements and Guidelines for the Use of the Grant. This document defines different means that will be used to assess the quality of produced materials and implemented project activities.

The AGFORWEB project QA Plan defines quality standards, quality assessment methods, and methods for identifying and correcting problems encountered during the project implementation. Internal and external monitoring of the AGFORWEB project was used to ensure project efficiency, progress, and continuous improvement in accordance with the defined standards and schedule. The document also defined the obligation for continuous analysis of quality assessment reports and specified that, if needed, actions and corrective measures would be applied.

One of the quality assessment methods used within the AGFORWEB project is collecting feedback with tailored questionnaires from external evaluators. External evaluators for this project were target groups that each of the project results targeted, i.e., students, local community, faculty personnel, project partners, and website visitors. Based on the QA document, it was defined that all questionnaires that will be developed for quality assessment will consist of three sets of questions:

- a) Set of questions describing reader/participant: age, employment status, organization, educational level, etc.

- b) Set of questions on expectations from the material/event: reasons to participate, expectations from the event, level of fulfillment of the expectations from the event, current knowledge on agroforestry, etc.
- c) Set of questions to assess the quality of the material/event: venue, organization, presentations, presenters, teachers, technical quality, material provided, etc.

All except the questionnaire placed on a website followed this structure. The reason for not including all categories in the website quality assessment questionnaire was to respect visitors' privacy since people on the Internet usually care a lot about sharing personal information (a) and to keep the survey as short and informative as possible because these kinds of self-administered surveys usually do not have a high response rate.

Following the proposed structure, six questionnaires were developed and used to assess the quality of new curricula, guest lectures, study visits, workshops with the local community, new learning materials, and the project's website. Examples of the used questionnaires are provided in the appendix to this report. Partners had access to digital copies of the questionnaires through the shared Google Drive folder. The original versions of all questionnaires were developed in English. However, partners could translate the questionnaire into the local language where necessary. Often partners had to adapt the script used in the questionnaires, as Cyrillic is the standard script in some project partner countries (Serbia and Bulgaria). When carrying out evaluations, partners could also choose whether to send a digital copy of the questionnaire to their participants and/or pupils or to print the document and give the paper version of the questionnaire to their participants and/or students. Project partners shared appropriate questionnaires with the participants after every completed activity. They mentioned that filling in the questionnaire was not obligatory, and if someone does not want to participate in the external evaluation, he does not have to.

The Croatian Forest Research Institute (CFRI) was responsible for WP5 (Quality Assurance and Dissemination). They developed a digital database to collect and store answers to the questionnaires.



One structured database was created for each questionnaire. The project partners agreed that the CFRI would manage all the digital databases. Scans or physical copies of the questionnaires were delivered to the CFRI team after evaluation. Then, one of the CFRI project team members entered the collected answers into the relevant digital database. This activity was regularly performed throughout the project implementation after every externally evaluated activity. CFRI regularly updated project partners on the results of external evaluations during project meetings.

Descriptive statistics were used on collected datasets to explore and describe results, objectively evaluating project activities and results. R statistical software with RStudio was used to calculate the descriptive statistics and produce the graphs presented in this Report.

## 2. OVERVIEW OF AGFORWEB PROJECT'S EXTERNAL EVALUATION

### RESULTS

#### 2.1 Guest lectures

Within the framework of Work Package 3 (WP3), Task 3.4 was designed to facilitate knowledge transfer and collaboration among partner institutions through guest lectures. These lectures provided opportunities for students and faculty to gain insights into agroforestry practices from different regions, showcasing the unique approaches adopted by each partner country. The lectures aimed to address the specific challenges and opportunities associated with agroforestry, thus fostering a deeper understanding and encouraging innovative thinking. The guest lectures offered an invaluable platform for academic exchange. Students gained exposure to diverse methodologies and practical insights while teaching staff enhanced their competencies by sharing their experiences and exploring potential collaborations.

In total, all 25 Guest lectures were organized within the AGFORWEB project activities. Table 1 presents the full list of organized guest lectures, including the lecturer's name, affiliation, topic, date when the lecture was conducted, and the host institution.

Table 1 - The complete list of organized and conducted guest lectures

No.	Lecturer/s	Affiliation	Topic	Date	Host Institution
1	Snežana Belanović Simić	University of Belgrade, Faculty of Forestry	Soil quality and agroforestry practice	26 October 2023	Josip Juraj Strossmayer University of Osijek, Faculty of Agrobiotechnical Sciences

2	Jelena Lazarević,	University of Montenegro, Biotechnical Faculty	Katuns in Montenegro (Part I - organization and concepts of Katuns)	26 October 2023	Josip Juraj Strossmayer University of Osijek, Faculty of Agrobiotechnical Sciences
3	Milena Đokić	University of Montenegro, Biotechnical Faculty	Katuns in Montenegro (Part II - animal husbandry in Katuns)	26 October 2023	Josip Juraj Strossmayer University of Osijek, Faculty of Agrobiotechnical Sciences
4	Sara Lukić	University of Belgrade, Faculty of Forestry	The potential of protective forest belts in climate changes	1 December 2023	University of Montenegro, Biotechnical Faculty
5	Milić Čurović	University of Montenegro, Biotechnical Faculty	Forest ecosystems and agroforestry practices in Montenegro	24 April 2024	Croatian Forest Research Institute
6	Predrag Miljković	University of Belgrade, Faculty of Forestry	Qfield as a tool for collecting data on agroforestry systems and creating a database in the field	24 April 2024	Croatian Forest Research Institute
7	Vladimir Ivezić	Josip Juraj Strossmayer University of Osijek, Faculty of Agrobiotechnical Sciences	Alley cropping systems	24 April 2024	Croatian Forest Research Institute

8	Jelena Beloica	University of Belgrade, Faculty of Forestry	Supporting biodiversity outside protected areas the role of traditional agro-ecosystems	24 June 2024	University of Forestry, Sofia
9	Anton Brenko	Croatian Forest Research Institute	Truffles – from seedlings to orchard	24 June 2024	University of Forestry, Sofia
10	Ivana Zegnal	Croatian Forest Research Institute	Mycorrhizal colonization	24 June 2024	University of Forestry, Sofia
11	Anton Brenko	Croatian Forest Research Institute	Truffle sector in Croatia – a case study	24 June 2024	University of Forestry, Sofia
12	Aleksandar Baumgertel	University of Belgrade, Faculty of Forestry	GIS application in agroforestry	24 June 2024	University of Forestry, Sofia
13	Monika Tkalec Kojić	Josip Juraj Strossmayer University of Osijek, Faculty of Agrobiotechnical Sciences	Medicinal plants under forest canopy in Croatia	24 June 2024	University of Forestry, Sofia
14	Georgi Kostov	University of Forestry, Sofia	Resilient landscapes, through integrated management	3 October 2024	University of Belgrade, Faculty of Forestry
15	Vladimir Zebec	Josip Juraj Strossmayer University of Osijek, Faculty of Agrobiotechnical Sciences	Agricultural land stability for agroforestry systems	3 October 2024	University of Belgrade, Faculty of Forestry

16	Jelena Lazarević	University of Montenegro, Biotechnical Faculty	Pathogenic and beneficial fungi in protective forest belt	3 October 2024	University of Belgrade, Faculty of Forestry
17	Teodor Nedelin	University of Forestry, Sofia	Commercial truffles for Bulgaria – ecology, distribution and economic importance	3 October 2024	University of Belgrade, Faculty of Forestry
18	Anton Brenko	Croatian Forest Research Institute	Prerequisites for the production of inoculated seedlings of economic tree species with black truffles	3 October 2024	University of Belgrade, Faculty of Forestry
19	Ivana Zegnal	Croatian Forest Research Institute	Evaluation of inoculated seedlings of economic tree species with black truffles	3 October 2024	University of Belgrade, Faculty of Forestry
20	Dalida Galović	Josip Juraj Strossmayer University of Osijek, Faculty of Agrobiotechnical Sciences	Cattle Breeding in the Agroforestry System	22 October 2024	University of Belgrade, Faculty of Forestry
21	Vladimir Margeta	Josip Juraj Strossmayer University of Osijek, Faculty of Agrobiotechnical Sciences	Free-Range Pig Production in Agroforestry Systems	22 October 2024	University of Belgrade, Faculty of Forestry

22	Jelena Lazarević	University of Montenegro, Biotechnical Faculty	Mycorrhization of forest tree seedlings with native fungi – importance and application in agroforestry	7 November 2024	Josip Juraj Strossmayer University of Osijek, Faculty of Agrobiotechnical Sciences
23	Nikolay Zafirov	University of Forestry, Sofia	Dendrochronological analysis of forest health status	7 November 2024	Josip Juraj Strossmayer University of Osijek, Faculty of Agrobiotechnical Sciences
24	Slavcho Savev	University of Forestry, Sofia	The honey resources in the forest territories of Bulgaria	7 November 2024	Josip Juraj Strossmayer University of Osijek, Faculty of Agrobiotechnical Sciences
25	Milena Yordanova	University of Forestry, Sofia	Agroforestry and horticulture	8 November 2024	University of Montenegro, Biotechnical Faculty

We present descriptive statistics for all collected feedback regardless of the lecturer affiliation. In total, we collected 189 correctly filled-out Questionnaires to evaluate Guest lectures. All respondents attended at least one of the Guest lectures organized as part of the AGFORWEB project. Some respondents attended multiple Guest lectures and filled out an evaluation questionnaire for each lecture they attended. Among the respondents, 84 identified as male, 103 as female, and one preferred not to disclose their gender. In terms of age, the mean age was 25, with a range from 17 to

65. These were predominantly students in different stages of their studies attending both bachelor and master study programs.

The questionnaire collected data about participants' interest in agroforestry, previous knowledge, perceived usefulness of guest lectures, and overall satisfaction, each measured on a Likert scale. On average, interest scored a mean of 4.27, indicating high interest among the participants. Previous knowledge averaged 3.11, with most participants marking their previous knowledge about agroforestry as Good (3). The distribution of answers to the question on previous knowledge is presented in Figure 1.

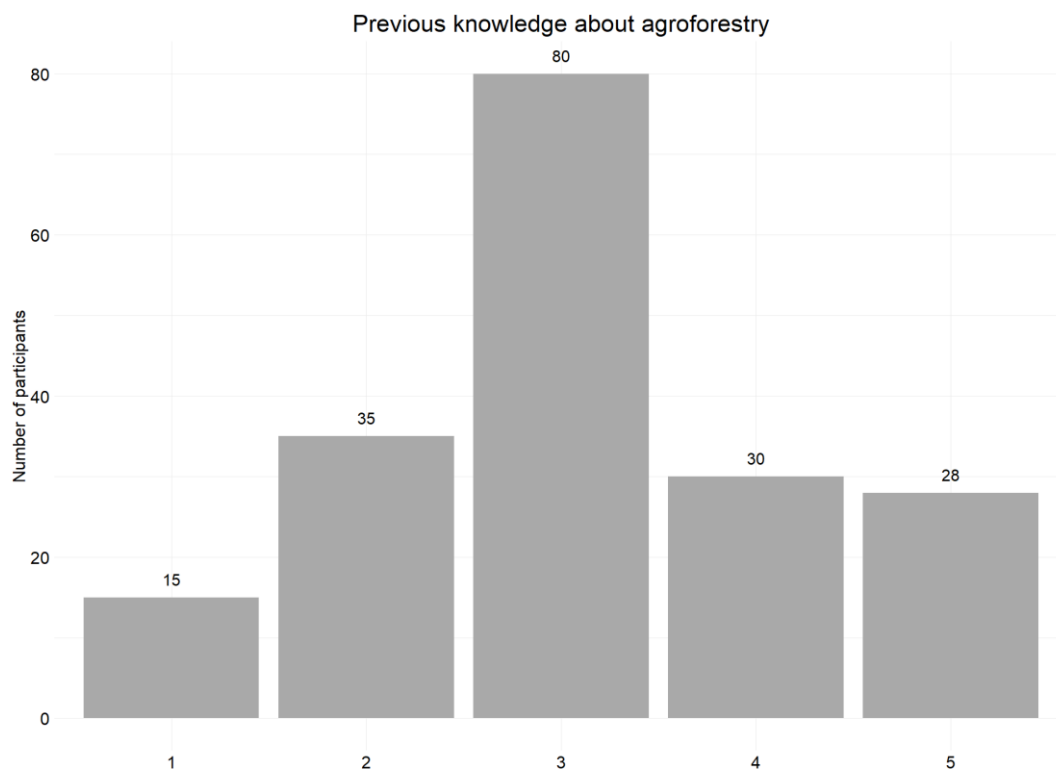


Figure 1 - Distribution of answers to the question related to respondent's previous knowledge about agroforestry

The presentations by guest lecturers were high quality, scoring a mean of 4.53, indicating that overall, the guest lecturers were knowledgeable and well-chosen. The distribution of scores given to Guest lecturers is presented in Figure 2.

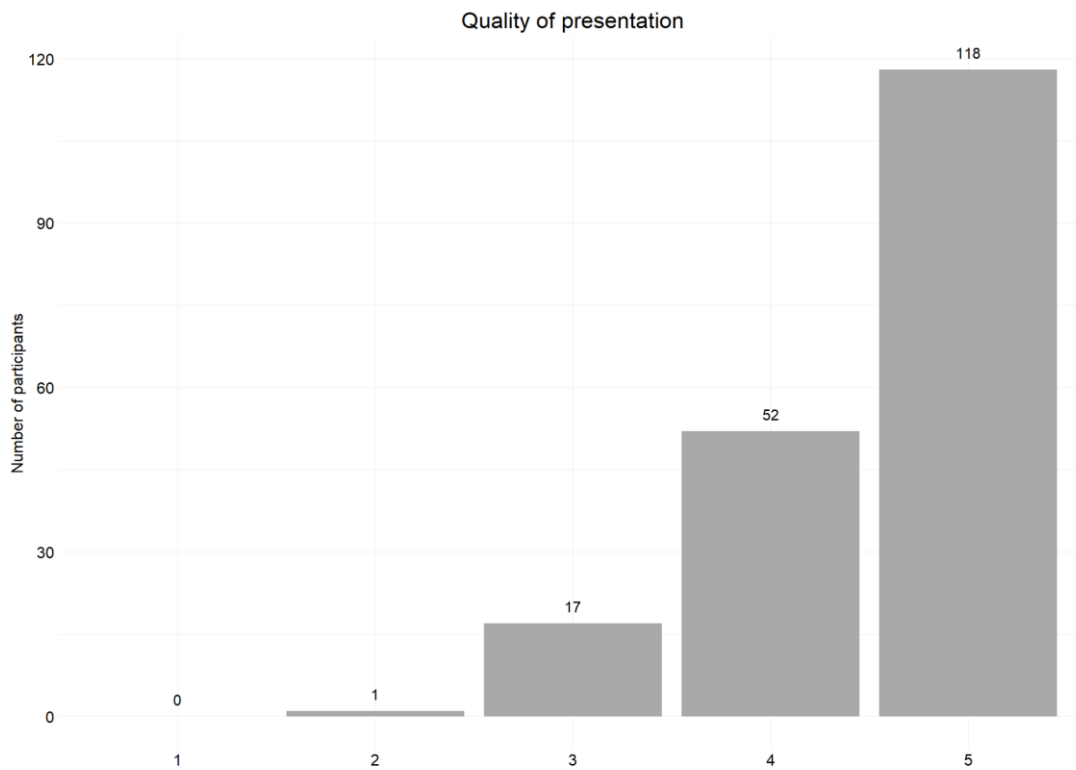


Figure 2 - Distribution of scores given to the quality of presentations during guest lectures

The perceived usefulness of the event was also rated high, with 90% of participants stating that the event was Useful (4) or Very useful (5) for their future work. The distribution of answers is presented in Figure 3. Satisfaction with the guest lectures received an average score of 4.5, again highlighting the quality of organized events.



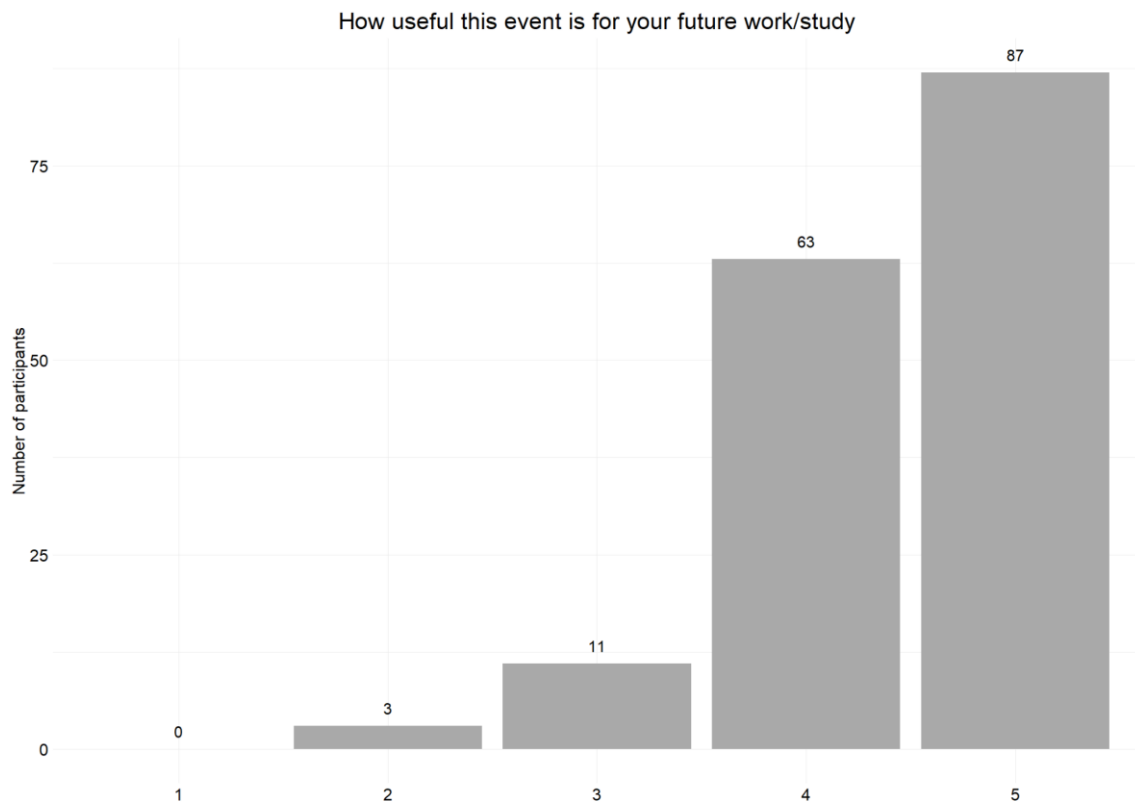


Figure 3 - Distribution of scores given to the perceived usefulness of guest lectures for future work or study

At the end of the questionnaire, participants were asked whether they would like to have more agroforestry-related topics in their programs. 81 of them stated B ('Yes, to some extent'), 78 stated A ('Yes, substantial part'), 23 stated C ('Yes, only basics'), and only one stated D ('No').

Guest lectures were an important communication and knowledge-sharing tool during the implementation of the AGFORWEB project. 25 different lectures were given to the students of all universities included in this project. The guest lectures covered a large diversity of topics, which proved interesting for the students. The most important result of guest lectures assessment could be that students found them useful and perceived them as an additional resource for their future work professionally and academically.

## 2.2 Study visits

The study visits were conceptualized as an integral component of Work Package 3 (WP3), focusing on development activities aimed at knowledge transfer. Recognizing the exceptional importance of cross-border educational exchanges, the visits were designed to foster the sharing of agroforestry practices and experiences among participating institutions. This initiative sought to address the varying levels of agroforestry implementation and expertise within the West Balkan region and neighboring countries.

Five study visits were organized in total during the implementation of the AGFORWEB project. Each project partner organized one visit.

Details about the study visits are presented in Table 2.

Table 2 - The complete list of organized and conducted study visits

No.	Host	Date	Location	Participants
1	University of Montenegro, Biotechnical Faculty	11 July 2023	Andrijevica, Montenegro	18
2	Josip Juraj Strossmayer University of Osijek, Faculty of Agrobiotechnical Sciences	26 October 2023	Osijek, Croatia	40
3	Croatian Forest Research Institute	25 April 2024	Pazin, Croatia	22
4	University of Forestry, Sofia	25 June 2024	Kavarna, Bulgaria	21
5	University of Belgrade, Faculty of Forestry	2 – 3 October 2024	Goč, Serbia	20

### 2.2.1 Description of Study Visits organized within the AGFORWEB project

#### 1. Andrijevica (Montenegro) Study visit

Participants visited the Katun “Čakor” in northeastern Montenegro, observing silvopastoral practices in action. Local farmers showcased their use of natural grazing areas for autochthonous Busha cattle

and Simmental breeds. The integration of livestock farming with eco-tourism was also demonstrated, highlighting the sustainable use of forest and pasture resources. The visit included exploring beekeeping agroforestry practices in Babino Polje, showcasing the synergy between apiculture and forestry.

## 2. Osijek (Croatia) Study visit

The visit focused on alley cropping systems and their role in microclimatic regulation. Participants examined field trials and opened soil profiles to understand the impacts of agroforestry on soil health. The day concluded with a visit to Kopački Rit Nature Park, demonstrating the integration of biodiversity conservation with sustainable land management.

## 3. Pazin (Croatia) Study visit

In Istria, participants explored various agroforestry systems, including wind protection belts and truffle plantations. A notable visit to the Karlič truffle plantation provided insights into truffle cultivation as a lucrative agroforestry practice. The day concluded with a visit to Stancija Kumparička, a goat farm integrating forestry and pasture management for cheese production.

## 4. Kavarna (Bulgaria) Study visit

This visit featured protective forest belts at the Dobrudza Agricultural Institute and a tour of the Balchik Botanical Garden. Participants observed experimental studies on tree-shrub compositions and their impacts on agricultural productivity. A cultural visit to Cape Kaliakra highlighted the integration of historical preservation with environmental conservation.

## 5. Goč (Serbia) Study visit

Participants visited dynamic agroforestry experimental fields and shelterbelts near Pančevo. On the second day, they visited households in Dragosinci and Bogutovac, where traditional practices like raising pigs in oak forests and mixed farming systems were showcased. These examples illustrated the economic and ecological benefits of agroforestry.

### 2.2.2 External quality assessment of Study visits organized within the AGFORWEB project

Participants of five study visits organized in each project partner country had an opportunity to provide feedback on the quality of the events. The target groups for external evaluation were students who joined the study visits and project partners who were guests at the study visits.

A questionnaire for evaluation of Study visits was distributed after the conducted study visit to everyone interested in providing feedback. Alongside providing their socio-demographic information, respondents (external evaluators) provided self-assessment of their previous knowledge on the subject of agroforestry and their level of interest in the topic on a Likert scale from 1 (Poor) to 5 (Excellent). Afterwards, respondents assessed the quality of presentations and field part of a study visit on a Likert scale ranging from 1 (Poor) to 5 (Excellent). For the last two questions, respondents had to assess the usefulness of the event for their future work or study. They had to give their feedback on their overall satisfaction with the quality of the event (organization, venue, material, topics) on a scale from 1 (Completely unuseful/unsatisfied) to 5 (Very useful/Fully satisfied). Participants were also asked whether they would like to have more agroforestry-related topics in their program at the end of the questionnaire.

In total, 46 respondents provided their feedback on the study visits. Among them, 24 females and 21 males. The mean age for the respondents was 30 years old. Respondents assessed their previous knowledge on the subject of agroforestry with a mean score of 3.33 the score of 3 indicates moderate knowledge, but their assessed interest in the subject of agroforestry was scored with a mean score of 4.25, showing high interest among respondents for the agroforestry related topics. The distribution of answers related to previous knowledge about agroforestry among participants is presented in Figure 4.

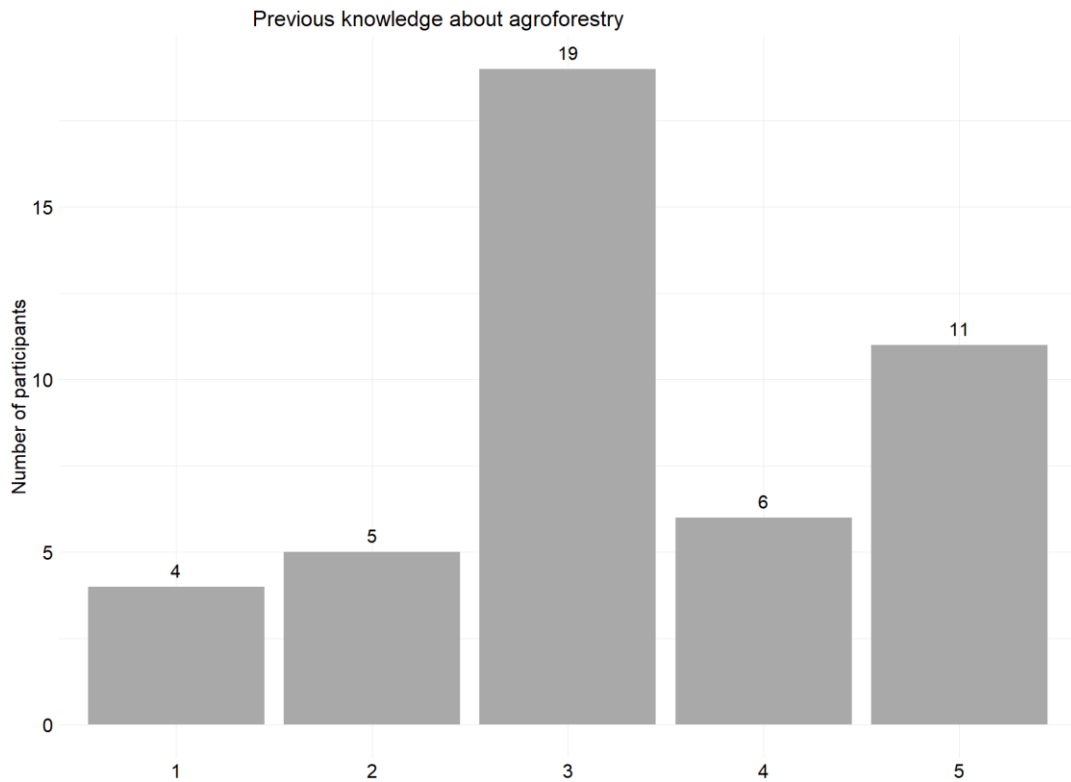


Figure 4 - Distribution of answers to the question related to respondent's previous knowledge about agroforestry

Participants assessed the quality of both the presentation and the study visit as Excellent. The mean score for the presentation was 4.67, while the mean score for the study visit was 4.63. The median value for both variables was 5.

Participants were highly satisfied with both the perceived usefulness and satisfaction of the study visit. They scored the perceived usefulness with a mean score of 4.74, indicating that the study visit was very useful for their future study or work. Satisfaction was scored with a mean score of 4.57, which shows that external evaluators were fully satisfied with the organized event.

In the end, when asked whether they would like to have more agroforestry-related topics in their studies, the majority of respondents stated that they would like to have more of these kinds of topics, but to some extent (answer B, 19 responses), followed by 'Yes, substantial part' (answer A, 16

responses), whereas those who stated 'Yes, only basics' (answer C) or 'No' (answer D) were a minority, with 7 and 1 responses, respectively.

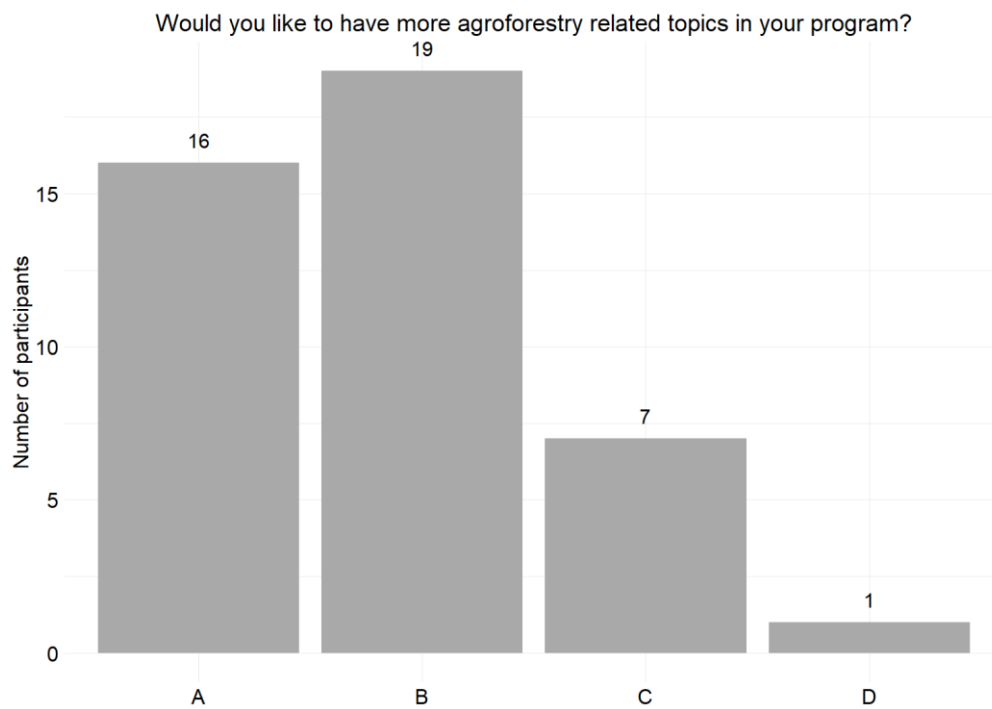


Figure 5 - Distribution of answers to the question related to more agroforestry topics in a study program

Study visits, as an important tool in enhancing knowledge sharing and collaboration, were externally evaluated as high quality events with an interesting and useful program for all who participated. Among all externally evaluated aspects of the AGFORWEB project, Study visits were scored with the highest scores for all explored variables. This confirms that the Study visits enhanced the quality of the project to a substantial extent.

## 2.2 Workshops for local communities

Local communities are usually the ones that implement agroforestry practices in their everyday work, therefore, members of local communities are the ones that the AGFORWEB project decided to focus on as a target group. Community workshops were an important part of the AGFORWEB project's

activities. One of the main indicators of the project's dissemination activities was the organization of 10 community workshops (2 per partner) with a minimum of 15 participants in each workshop and reaching 150 participants. During project implementation, each partner organized two community workshops in their local area. Details of organized workshops are specified in Table 3. Even though the number of 15 participants in every workshop has not reached, the total number of community members reached is 189, which is more than planned (150). A total number of community members who attended the workshops indicated high interest in topics related to agroforestry in all countries involved in the AGFORWEB project. In that regard, this activity was externally evaluated by local farmers and government representatives who attended community workshops using a questionnaire. External evaluation was not mandatory for participants, therefore all who participated did not evaluate the event.

Table 3 - The complete list of organized workshops for local communities

No.	Host	Date	Location	Participants
1	Croatian Forest Research Institute	21 October 2023	Vodnjan, Croatia	15
2	Croatian Forest Research Institute	6 April 2024	Pazin, Croatia	17
3	University of Belgrade, Faculty of Forestry	5 June 2024	Bačka Palanka, Serbia	9
4	University of Belgrade, Faculty of Forestry	5 November 2024	Bač, Serbia	26
5	University of Forestry, Sofia	20 March 2024	General Toshevo, Bulgaria	31
6	University of Forestry, Sofia	5 November 2024	Sofia, Bulgaria	7

7	Josip Juraj Strossmayer University of Osijek, Faculty of Agrobiotechnical Sciences	19 March 2024	Oprisavci, Croatia	31
8	Josip Juraj Strossmayer University of Osijek, Faculty of Agrobiotechnical Sciences	15 September 2024	Gudovac, Croatia	26
9	University of Montenegro, Biotechnical Faculty University of Montenegro, Biotechnical Faculty	2 May 2024	Zeta, Montenegro	17
10	University of Montenegro, Biotechnical Faculty	27 September 2024	Tuzi, Montenegro	10

The first aim of conducting workshops was to inform and educate the local community on the topic of agroforestry. The second aim was to collect participant feedback about the project's activities and local implementation and development of agroforestry practices. The Quality Assurance plan defined the external evaluation for this project activity, i.e., participants provided feedback on the event. Feedback from the participants about the project and organized community workshop was collected via a questionnaire developed for this purpose within the AGFORWEB WP 5 activities. Each project partner was instructed to distribute the Questionnaire for evaluation of Community workshops after each event to participants. Filling in the questionnaire was voluntary; participants were not obliged to provide feedback if they did not want to. Therefore, the number of participants and surveys is unequal. Participants were unwilling to provide feedback in three out of 10 workshops despite the team's efforts. We could not collect any feedback from the participants in Montenegro.

In total, 98 participants filled in the Questionnaire for the evaluation of Community workshops organized within the AGFORWEB project, 61 males and 36 females. The mean age of attendees was 43 and a half and ranged from 16 years old to 70 years old. The highest achieved level of education for more than half of the participants was a high school (48%), followed by higher education (master



diploma and higher). In total, 63 attendees owned arable land, but only 19 of them owned a forest, meaning that workshops were more interesting for people who are working in agriculture than those who potentially work in forestry. In addition, the mean age for working experience for attendees was 21 years, and the median was 18.

Farmers, foresters, and local government were defined as the target groups that the project consortium wanted to reach and engage with through the AGFORWEB project. Based on the questionnaire's results, farmers were the most represented group, followed by local government representatives, while foresters were the hardest target group to reach.

When asked for previous knowledge about agroforestry on a scale of 1 to 5, most respondents answered that their knowledge was Good (3) followed by Poor (2). Subsequently, the mean score for this question was low, only 2.6, and only 17 attendees scored their previous knowledge on the topic of agroforestry with 4 or 5 (Very good and Excellent). The frequency distribution of self-assessment scores is presented in Figure 6.

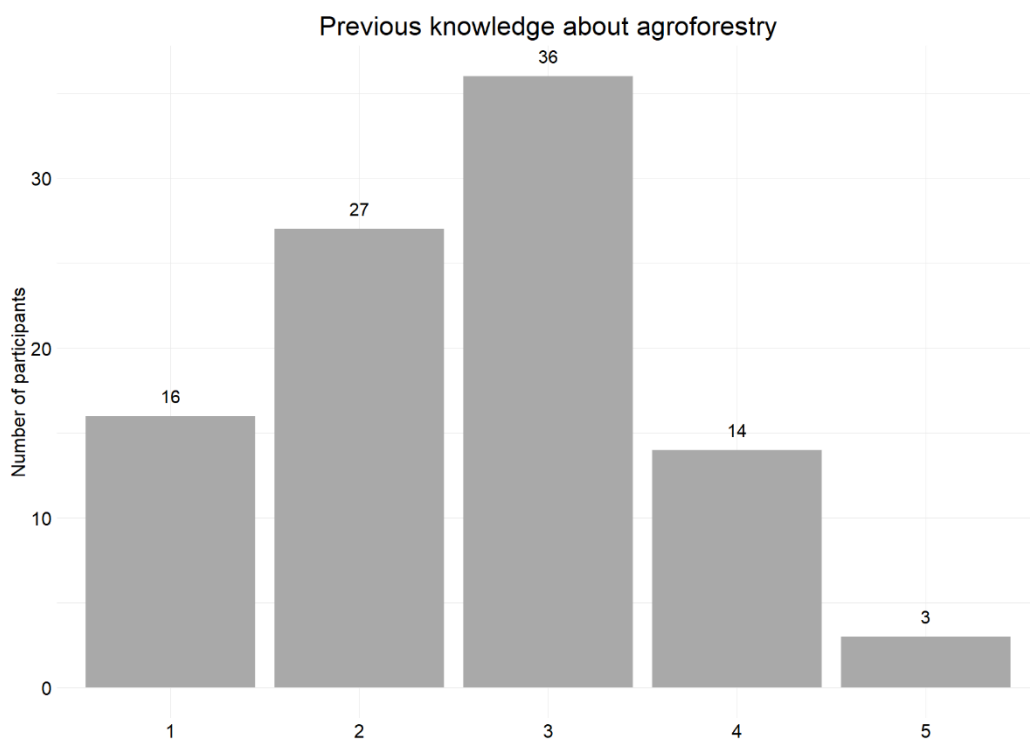


Figure 6 - Distribution of answers to the question related to respondents' self-assessed previous knowledge on agroforestry

However, interest was high (mean score 4.1). The majority, 73 attendees, scored their interest in the topic of agroforestry with 4 or 5. The distribution of scores is presented in Figure 7.

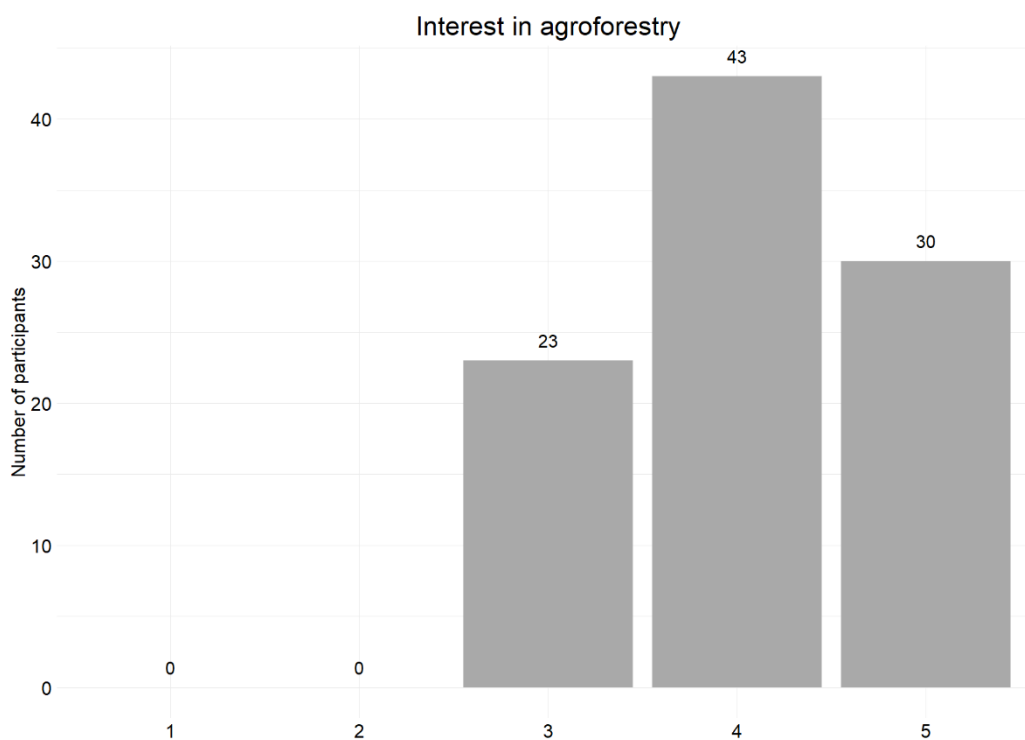


Figure 7 - Distribution of answers related to the respondents' interest in agroforestry

Based on the attendees' feedback, the workshops managed to meet the expectations, with a mean score of 4.23.

With the questionnaire we also assessed the quality of presentation on the topic of agroforestry. By quality of the presentation we imply quality of the presenters, quality of presentations and quality of all other material provided to the participants at the workshop, such as the guide for farmers and local government titled 'Agroforestry in practice' - publication which is one of the results of the AGFORWEB project. The guide was handed out to the participants at the workshops. Respondents scored the quality of presentation on the topic of agroforestry very high, with the mean score of 4.6. Underlying distribution of answers to the question about the quality of presentation is presented in Figure 8.

Figure shows that the quality was scored the most with the highest score (5) by 2 / 3 of the participants.

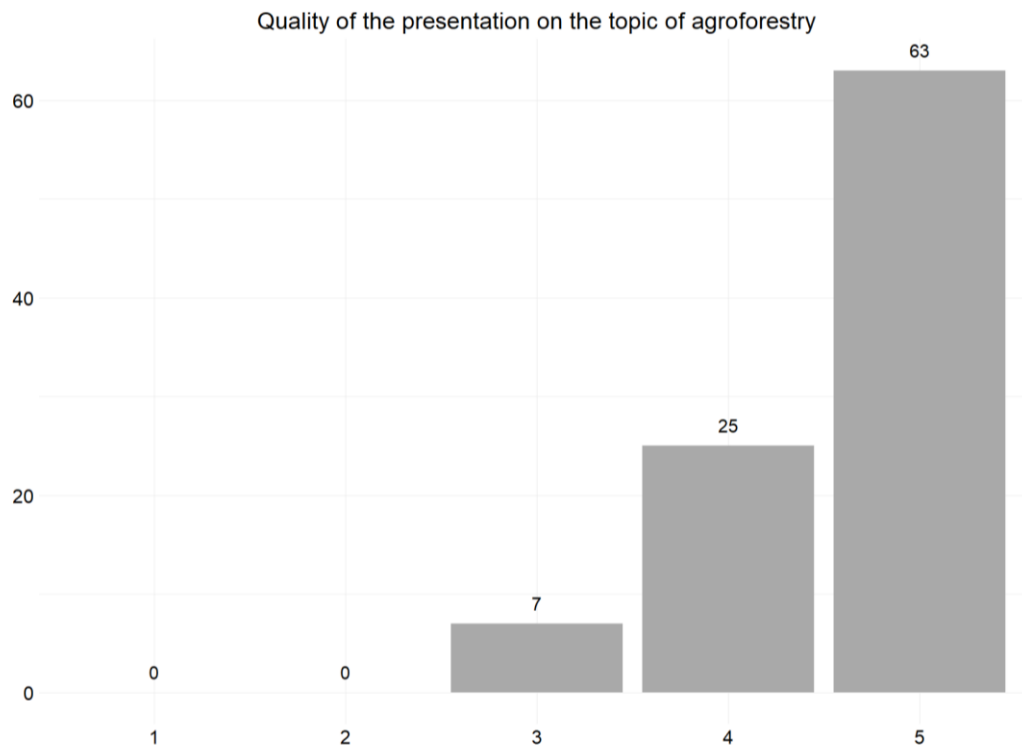


Figure 8 - Distribution of answers related to the assessment of quality of presentation on the topic of agroforestry

Overall satisfaction with the event for attendees was marked with 4.7. When asked for feedback on how useful the workshop was for their future work on a Likert scale from 1 to 5, 83 attendees marked 3 or higher, with 5 being the most frequently used mark (41 participants).

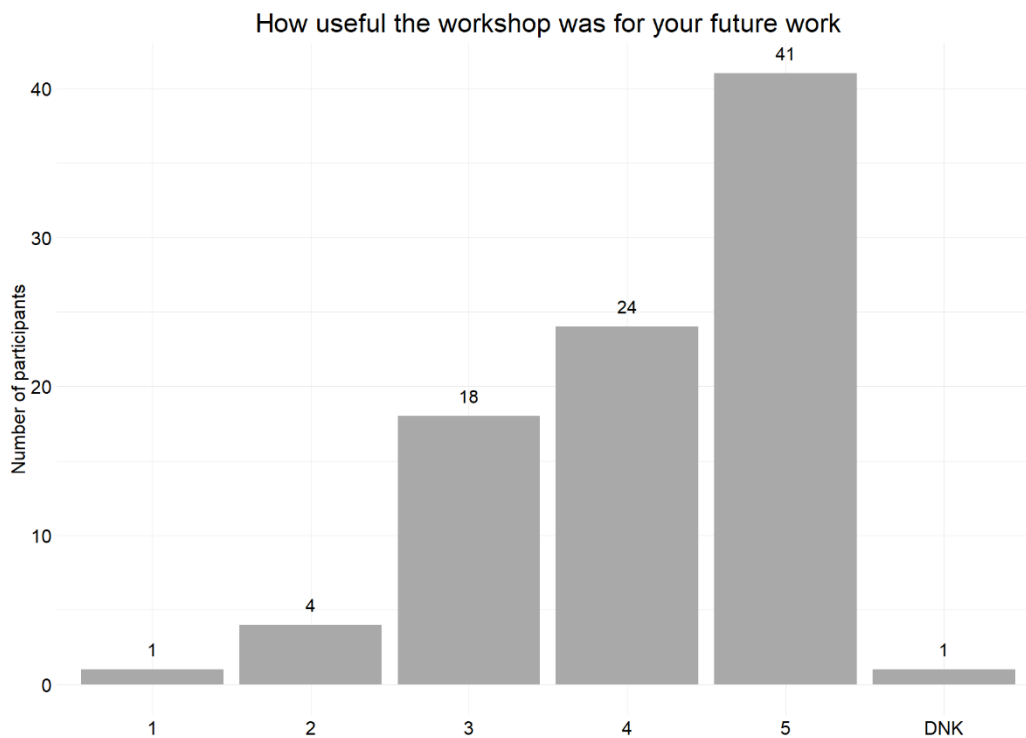


Figure 9 -Distribution of answers related to the usefulness of community workshops for participants (DNK = 'I don't know')

In their evaluation participants also assessed the benefits that agroforestry provides. Several categories of benefits were presented to them, namely effects of agroforestry on biodiversity and nature preservation, on social aspects (landscape, potential for tourism), on farm management, on the diversification of the production and the effect of agroforestry on the security and stability of income. Participants assessed the benefits on a Likert scale from 1 to 5 where 1 represents 'very weak' effect and 5 represents 'very strong' effect.

Participants at the community workshops assessed that the highest effect agroforestry has on social aspects with the mean score being 4.25 followed by the strong effects that agroforestry has on biodiversity and nature preservation with the mean score of 4.23. Other variables were scored somewhat lower with the mean score for management was 4.1, for diversification was 4.07 and for security of income was 4.03. It can be concluded that the community perceives and values all the benefits agroforestry has to offer with an emphasis on social aspects and biodiversity.

Community workshops organized within the AGFORWEB project managed to achieve all proposed metrics. The high response of local communities to organized workshops shows the interest of farmers and policy-makers in the subject of agroforestry, which was additionally confirmed by external evaluation results. All the workshops were scored high for all explored variables. The local community had little to moderate previous knowledge about the subject of agroforestry, but in the end the majority of attendees stated that the workshop was useful for their future work. This indicates the appropriateness and quality delivery of this project activity that added to the project's visibility but also shared the knowledge about agroforestry outside the academic community.

### 2.3 Innovative learning material

Students were an important target group of the AGFORWEB project. Several project results targeted students with the aim of enhancing their learning experience. Innovative learning materials developed were new/improved curricula on the subject of agroforestry that were implemented and tested with students of four universities: the University of Forestry in Sofia, Bulgaria; University of Montenegro; University of Belgrade (Faculty of Forestry) in Serbia and Josip Juraj Strossmayer University of Osijek (Faculty of Agrobiotechnical Sciences) in Croatia. Curricula were improved at both BSc and MSc levels through AGFORWEB project activities. Students enrolled in study programs that teach about agroforestry listened through new material and assessed the quality of new curricula with questionnaires afterward. Besides new curricula, innovative learning material included the development of new learning material for students, such as student textbooks about agroforestry and spatial databases with agroforestry practices mapped in Western Balkans, which was AGFORWEB project activities. Students at the universities mentioned in Bulgaria, Croatia, Montenegro, and Serbia could test all new learning material and provide feedback through structured questionnaires. In the next few chapters, we present students' feedback as an external quality assessment. In total, 54 students provided feedback about the innovative learning materials.

### 2.3.1. Curricula

One of the AGFORWEB project results is an improved curriculum that was tested and its quality was assessed with students using questionnaires. The improved curriculum was tested with 54 students, with bachelor and master students in equal parts (23 BSc and 25 MSc study level, while for 6 students, we could not determine the study level from the questionnaire). Also, students were slightly imbalanced by gender, with 18 females and 29 males in the sample of respondents; 7 of the respondents did not state their gender in the questionnaire. The mean age for students was 27, ranging from 20 to 45, with a median of 24.

Before providing feedback on the new or improved curricula and/or modules, students needed to self-assess their previous knowledge of agroforestry. Results show that students assessed their previous knowledge as low, with a mean score of 2.74 measured on a 5-point Likert scale. The underlying distribution of answers to this question is presented in Figure 9, from which one can see that scores 2 and 3 dominate in the sample.

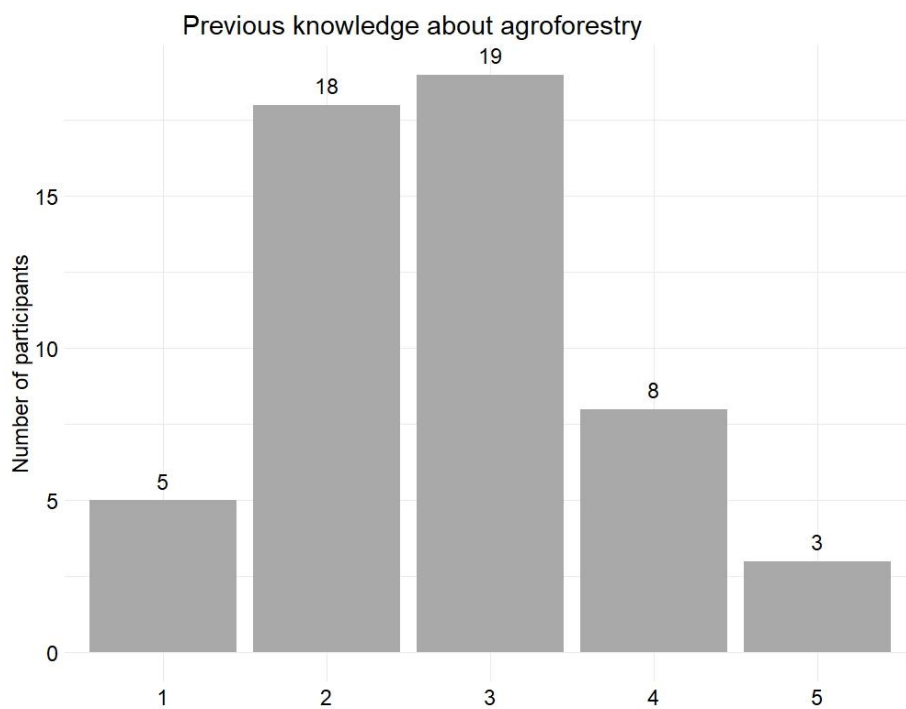


Figure 10 - Distribution of answers related to the previous knowledge about agroforestry among students

However, their interest was high, and they scored an average of 4.11 on a 5-point Likert scale, with answers ranging from 3 to 5. The distribution of scores is presented in Figure 10.

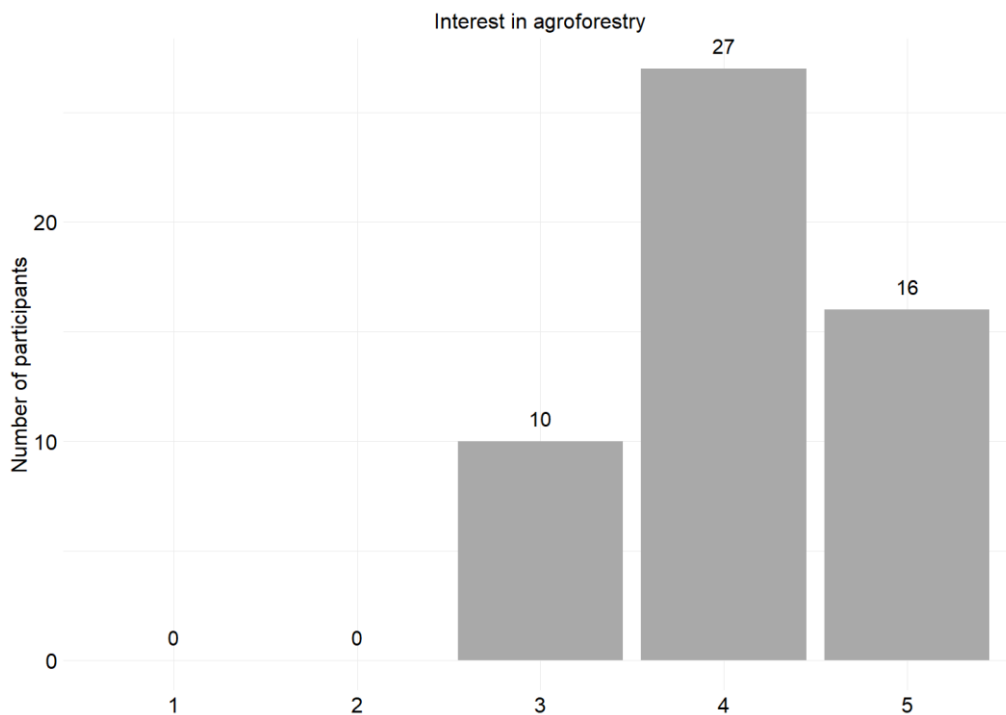


Figure 11 - Distribution of answers related to the previous knowledge about agroforestry among students

A set of questions asked students how knowledge and skills acquired by the module would be useful for their future work ranked on a 5-point Likert scale. Quality of modules and new curricula in general was scored with an average score of 4.17; quality of presentations was scored with 4.62, and quality of acquired knowledge and skills for planning and design in agroforestry was scored with an average of 4.12.

At the end of the questionnaire, the students were asked whether they would like to have more agroforestry-related topics in their programmes. 23 of them stated B ('Yes, to some extent'), 18 stated A ('Yes, substantial part'), nine stated C ('Yes, only basics'), only one stated D ('No') and three students did not provide their feedback (Figure 11).

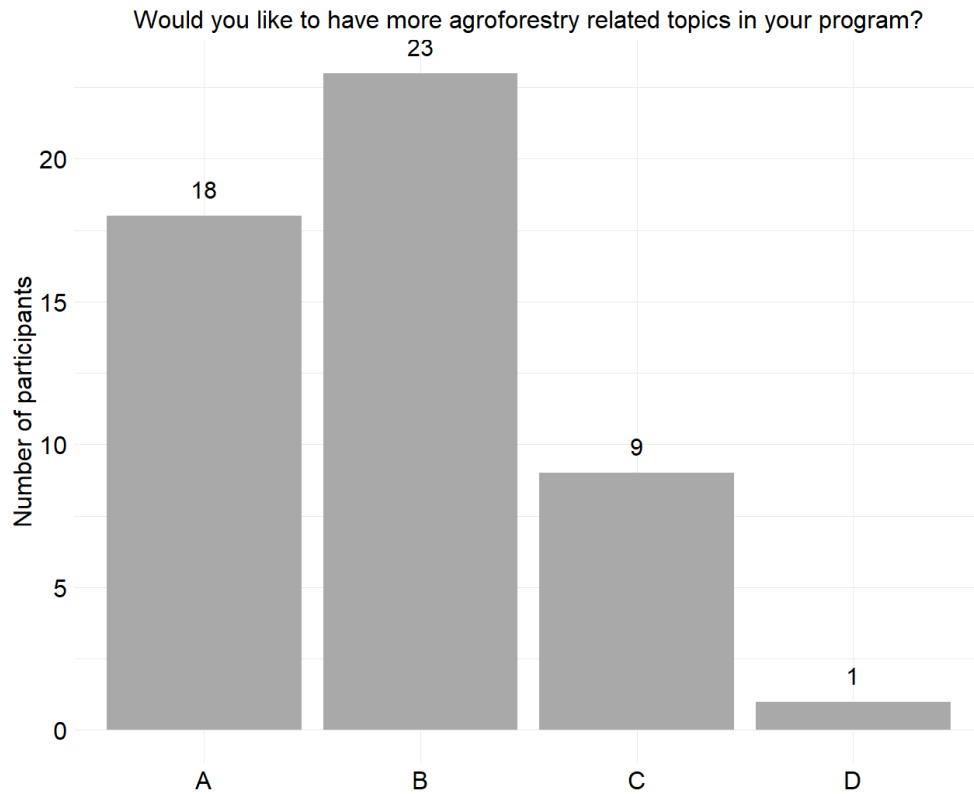


Figure 12 - Distribution of students' answers to the question related to more agroforestry related content in new materials

### 2.3.2. New Textbook

Innovative learning material also includes the newly developed student textbook, as one of the project results. All students who were enrolled in modules related to agroforestry based on a new or improved curriculum used the new textbook; therefore, they also had a chance to provide feedback on the student textbook as external quality assessment evaluators.

The new textbook was tested with 54 students, with bachelor and master students in equal parts (23 BSc and 25 MSc study level, while we could not determine the study level from the questionnaire) for six students. The gender balance of students was slightly disbalanced, with 17 females and 29 males in the sample of respondents; 7 of the respondents did not state their gender in the questionnaire. The mean age for students was 27 years old, ranging from 20 to 45, with a median of 24.



Since the same sample of students were enrolled in agroforestry-related programs and modules, previous knowledge on the subject of agroforestry was again rather low (mean score 2.74), and interest in the subject was high (4.11).

Students assessed the textbook based on the perceived quality of the content and the quality of the material. They had to assess whether and to what extent the material provided the basis for new knowledge and skills for planning and design in agroforestry. At the end of the questionnaire, students had to assess how useful new knowledge and skills would be for their future work.

Results from the external evaluation by students show the high quality and usefulness of the new textbook. Quality of the content: students scored with a mean score of 4.3, with a range of scores being 4 to 5. Quality of the material presented in the textbook students scored with a mean score of 4.5, with a range of scores being 4 to 5. When asked to what extent the new materials provide the basis for the new knowledge and skills for planning and design in agroforestry, students scored the quality of the textbook in this regard with a mean score of 4.5, where scores ranged from 4 to 5.

The second set of questions assessed the perceived usefulness of the textbook on a scale from 1 (Completely unuseful) to 5 (Very useful). Students perceived the newly developed AGFORWEB student textbook as highly useful, where the mean score was 4.3, and the given scores ranged from 4 to 5; therefore, no one scored a student textbook with three or lower. Students also assessed how this new knowledge would be useful to them in their future work, and their mean score given for this question was 4.4, indicating that students perceived a textbook as being useful for them and therefore for the future generations.

### 2.3.3. Digital database

A spatial digital database with agroforestry practices in Western Balkans was one of the project results intended for students as new learning material in their modules and programs. By using a spatial database, students would learn not only about agroforestry but also about spatial data, spatial

analyses, GIS, and modeling. Also, by using a spatial database based on real examples of agroforestry practices in Western Balkans, students would move their understanding of agroforestry from purely theoretical to a more practical understanding of agroforestry.

The same sample of students who assessed new or improved curricula and a textbook also had an opportunity to work with the digital database developed as part of the AGFORWEB project. Therefore, the sample of students who could assess the quality of a digital database was 54 students, with bachelor and master students in equal parts (23 BSc and 25 MSc study levels for 6 students; we could not determine the study level from the questionnaire). The gender balance of students was slightly disbalanced, with 18 females and 29 males in the sample of respondents; 7 of the respondents did not state their gender in the questionnaire. The mean age for students was 27 years old, ranging from 20 to 45, with a median of 24. In the end, only five students assessed the quality of the digital database. There were 4 females and 1 male in the sample.

Self-assessed previous knowledge of these 5 students on the topic of agroforestry was rather low, with a mean score of 2.4 and a median of 2. On the other hand, interest in the subject of agroforestry was high among students, with a mean score of 4.8 and the median score given for this question in the questionnaire being 5. Students assessed the digital database in the context of their learning experience. Students were taught skills to use the digital database to acquire new knowledge from the spatial agroforestry data. They assessed the quality of provided information with a mean score of 5.0, however it should be stressed that only students at the University of Montenegro assessed this variable therefore this score should not be used as a representative. Students perceived the given information as very useful. When we asked students whether they think these new skills and learning material related to the digital database would be useful for their future work on a scale from 1 (Completely unuseful) to 5 (Very useful), they scored perceived usefulness with a mean score of 4.8 and a median score of 5. This means that the digital database produced within the AGFORWEB project is good learning and teaching material for students and teachers and a useful tool for future

professionals in agroforestry. However, more testing with students in the future after the project is recommended.

## 2.4 Website

During the AGFORWEB project implementation, project partners developed and deployed the project's website, which can be found at <https://agforweb.org/>. The website's primary use is to communicate the project's details, activities, and results and to share newly developed materials. According to the statistics provided by company that maintains the AGFORWEB project website, the website had 5,564 visits.

To collect feedback on the quality of the website and its content, a simple Google form survey was developed and linked to the website's Home page as a 'Please, give us your feedback' button. The survey behind the link asked visitors to rate the quality of the provided information, their experience in searching for information, how useful the material was for them, and how they found out about the project. The first three variables (quality, experience, and usefulness) were assessed with a 5-point Likert scale, where one was defined as very poor and five as excellent. The last question (How did you find out about us) was designed as a closed-ended question with five possible answers: 'My teacher', 'Colleagues', 'Internet sources', 'Project partners', and 'Something else'.

Nine visitors provided their feedback about the website.

All visitors who provided feedback about the website stated that the quality of the provided information was high (scored 4 or 5 on a 5-point Likert scale). Most visitors (66.7%) scored 'Quality of information provided' as excellent (Figure 12).

### Quality of information provided

9 responses

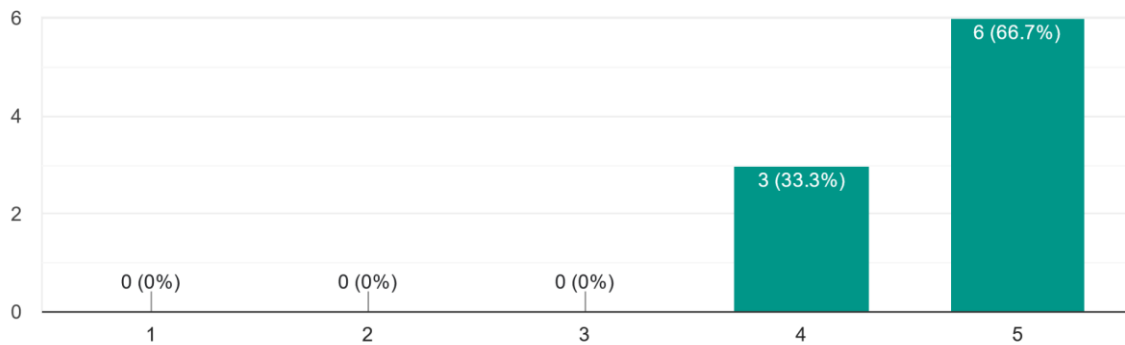


Figure 13 - Distribution of answers given to the question related to the quality of information provided at the website

The website's visitors scored their experience of searching for information on the website as extremely positive, and all respondents assessed their experience as excellent (4 or 5). The distribution of answers to this question is presented in Figure 13.

### The experience of searching for information

9 responses

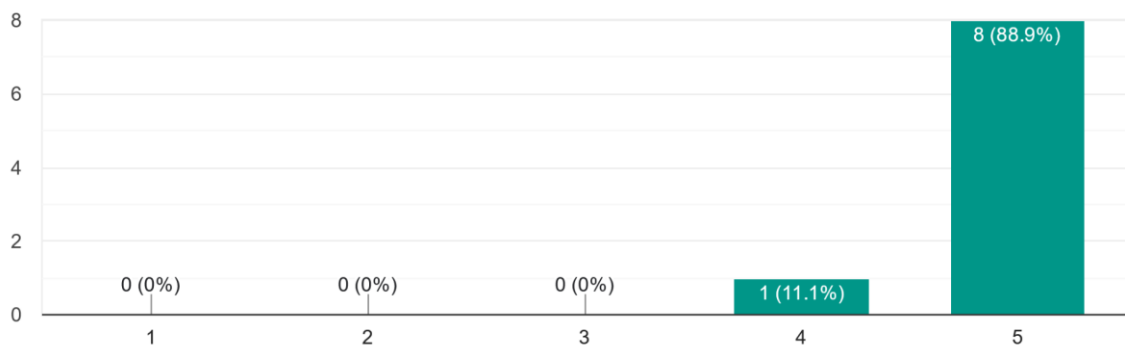


Figure 14 - Distribution of answers given to the question about the experience of searching for information at the website

The usefulness of the material (for you) was the last variable explored with the questionnaire related to the quality of the website. Even though the usefulness was perceived as positive, one neutral answer (score 3) indicated that materials might not be useful for all visitors. The distribution of the frequency of answers to this question is presented in Figure 14.

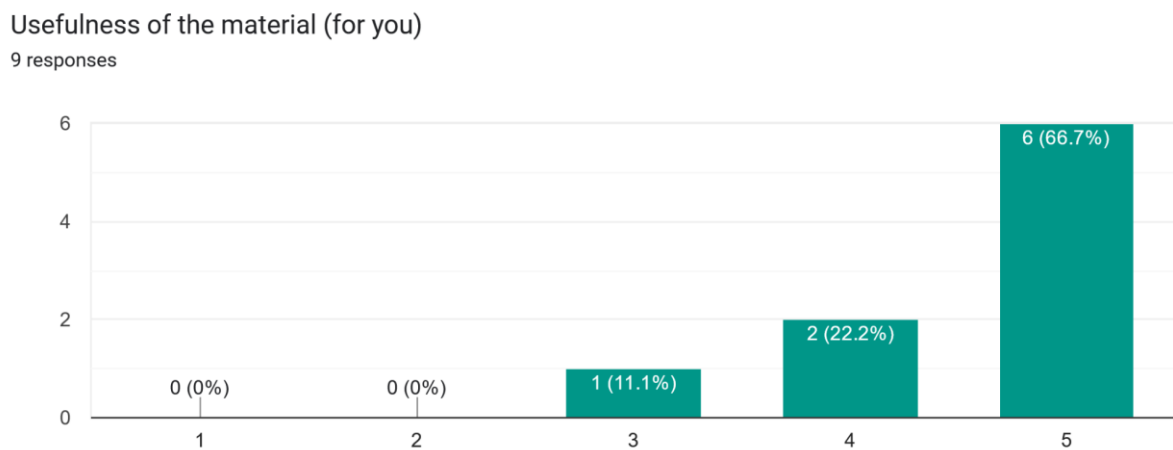


Figure 15 - Distribution of answers given related to the usefulness of the material provided at the website

The last question asked the website's visitors how they found out about the project and their answers differed. Internet sources and colleagues were the primary sources of information about the project's followers by a teacher sharing the information about the project. Several visitors stated that they found out about the project through other means (something else). Figure 15 shows the distribution of answers to this question.

How did you find out about us?

9 responses

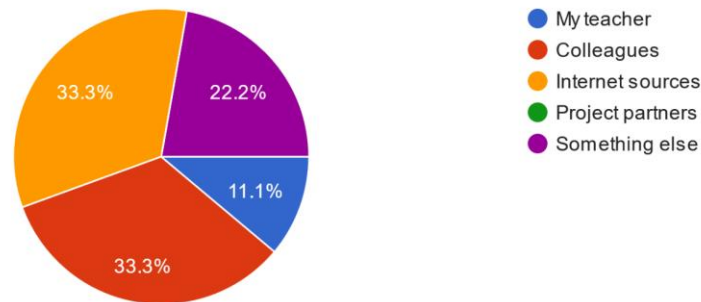


Figure 16 - distribution of answers to the question “How did you find out about us?” from the website’s survey

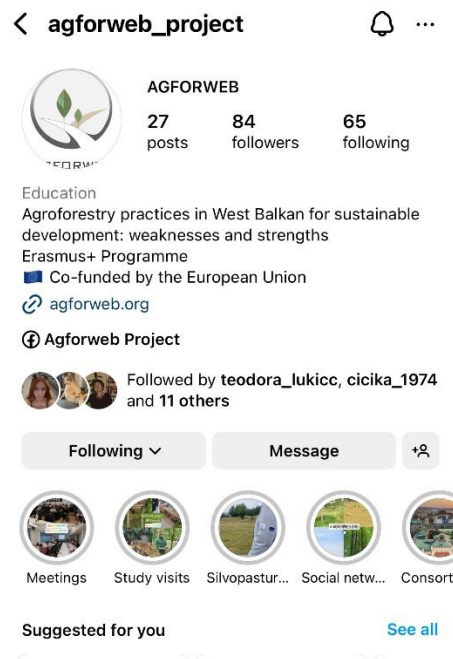
In today's world, websites are an important communication tool. The AGFORWEB project, therefore established its own website to share news, events, and agroforestry-related material. The quality assessment of a website is not easy since QA surveys are self-administered on a website and usually do not achieve a high response rate. Indeed, the AGFORWEB website's questionnaire achieved a low response rate. Despite this, it is evident that the AGFORWEB website has been meticulously crafted, and the content shared on it is highly beneficial for visitors seeking information on agroforestry online, underscoring the website's ongoing relevance even after the project's conclusion.

### Social media statistics

**Instagram:**

[https://www.instagram.com/accounts/login/?next=%2Fagforweb\\_project%2F&source=omni\\_redirect](https://www.instagram.com/accounts/login/?next=%2Fagforweb_project%2F&source=omni_redirect)

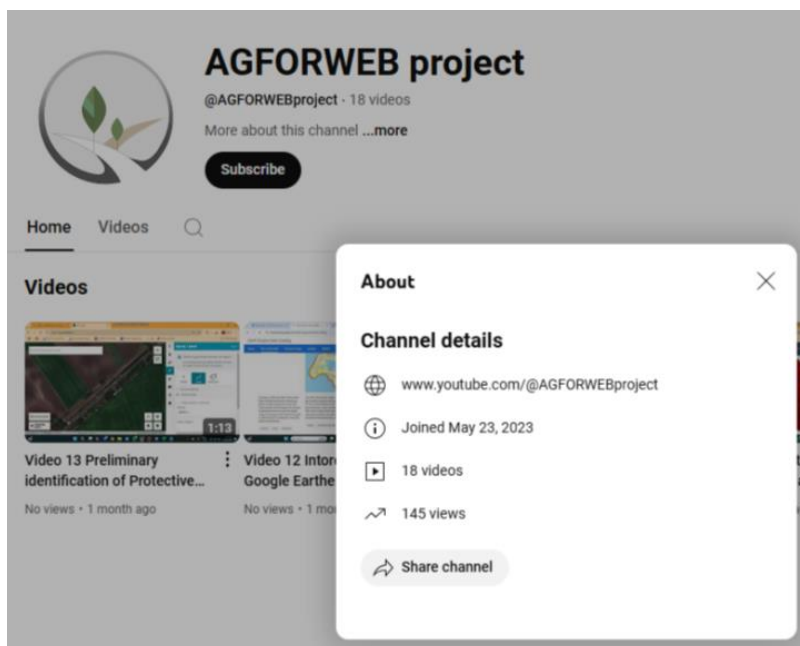
AGFORWEB Instagram profile (agforweb\_project) has 84 followers. It was posted 27 times during the project implementation. Posts on AGFORWEB profile collected about 300 likes.



**Youtube:**

<https://www.youtube.com/@AGFORWEBproject>

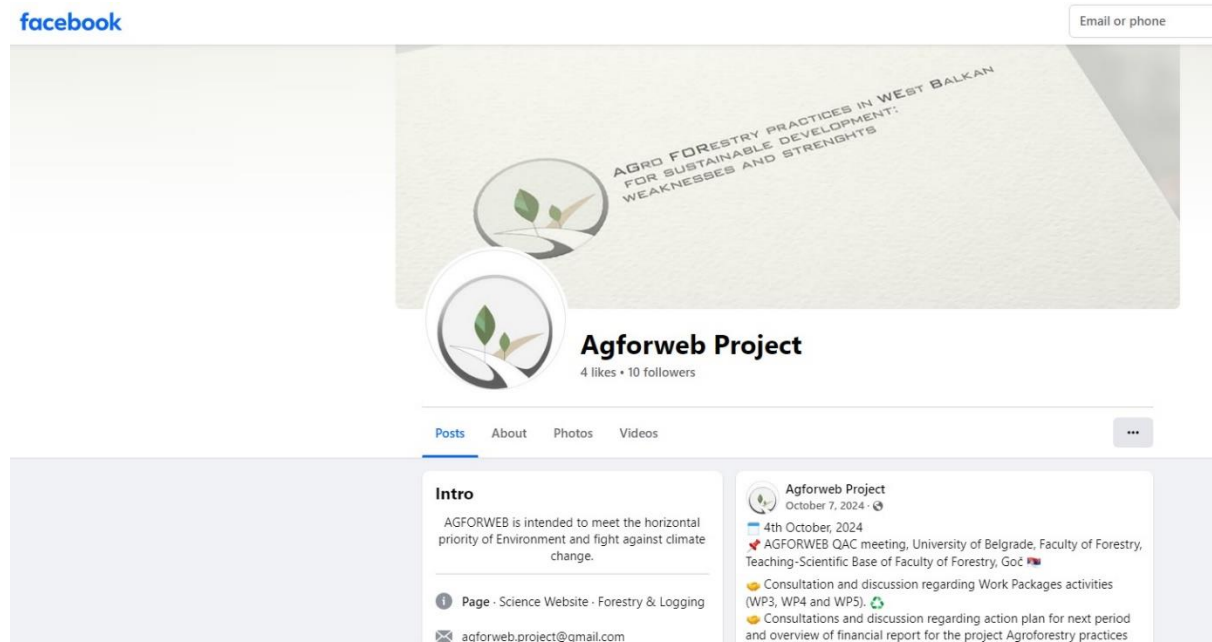
AGFORWEB project Youtube channel have 145 views.



## Facebook:

<https://www.facebook.com/people/Agforweb-Project/100093325453926/?sk=photos>

Agforweb Project Facebook page posted over 20 times.



### 3. CONCLUSION

The Quality Assurance Plan, which was developed within the AGFORWEB project to ensure the timely and high-quality delivery of project results, served as the primary guiding document for this report. External evaluation was one of the most important parts of the QA since the people evaluating were usually from the project's target groups. So farmers, students, policymakers, and teachers, who would be the ones using the project's results, were the ones who objectively assessed its quality. Questionnaires proved a useful tool for collecting structured feedback from external evaluators. We decided that providing feedback would be voluntary, therefore, we did not collect feedback from every participant/student. Despite this, as this report shows, a substantial amount of information was



collected that allowed for meaningful analyses and an objective overview of the quality of produced results.

Several points can be highlighted as a conclusion of this report.

1. Agroforestry is still not well known among farmers, policymakers, and even students in Western Balkan countries. Self-assessment results show that respondents were not confident that they had above-average knowledge about the subject. This result confirms the need to conduct the AGFORWEB project in a way that was implemented.
2. Despite their perceived lack of knowledge, respondents were interested in learning more about agroforestry. The participants' willingness to learn more helped the project partners present new practices and new knowledge to the interested audience.
3. All new learning material developed as a result of the AGFORWEB project activities was well received by students. The new material was perceived as high quality and useful, so current and future students of modules and programs related to agroforestry will benefit from it.
4. Timely quality assessment of project results allows the committee to present evidence-based conclusions about the quality of project results.
5. Target groups objectively assessed the quality of project results that targeted them as useful and high-quality; therefore, it can be concluded that the AGFORWEB project met the objectives of the QA Plan.

#### 4. REFERENCES

[1] AGFORWEB project Quality Assurance Plan

5. APPENDIX

5.1 Questionnaire for the evaluation of Guest Lectures

**The Questionnaire for the Evaluation of Guest Lectures**

**Guest lecture / Name of the Guest lecturer.....**

*a) Socioeconomic questions*

1. Age .....(number)
2. Gender: F, M, Other, Prefer not to disclose
3. The Faculty and the Program that you are studying  
.....
4. Semester ..... (number)
5. What are your expectations from this event?  
.....

*b) Please assess your previous knowledge and interest in the topic on the scale:*

**1-very poor, 2 – poor, 3 – good, 4 – very good, 5 – excellent**

	Scale				
Question	1	2	3	4	5
6. My previous knowledge on the topic of agroforestry					
7. My level of interest in the topic					

*c) Assessing the quality of the material/the event*

Please state your level of agreement whether the guest lecture met your expectations:

**1-fully disagree, 2- agree, 3- neither agree, nor disagree, 4- agree, 5 – fully agree**

	Scale				
Question	1	2	3	4	5
8. The quality of the presentations					

9. Please assess how useful this guest lecture is for your future work/studying on the scale:

**1- completely unuseful, 2 – unuseful, 3 - neither useful, nor unuseful, 4 – useful, 5 – very useful**

1- completely unuseful	2 - unuseful	3 - neither useful, nor unuseful	4 - useful	5 – very useful
---------------------------	--------------	-------------------------------------	------------	-----------------

10. Please state your overall satisfaction with the quality of the guest lecture (organization, venue, material, topics, etc) on the scale:

**1- completely unsatisfied, 2 – unsatisfied, 3 - neither satisfied, nor unsatisfied, 4 – mostly satisfied 5 – fully satisfied.**

1- completely unsatisfied	2 - unsatisfied	3 - neither satisfied, nor unsatisfied	4 – mostly satisfied	5 – fully satisfied
------------------------------	-----------------	--	-------------------------	------------------------

11. Would you like to have more agroforestry related topics in your program?

A	Yes, substantial part
B	Yes, to some extent
C	Yes, only basics
D	No

12. If you have additional comments, suggestions or questions please them here:

.....

Contact information – optional in case you want to be informed on future events.

Name:

e-mail:

## 5.2 Questionnaire for the evaluation of Study visits

### Questionnaire for evaluation of Study visits

**Title of the event / Name of the Guest lecturer.....**

a) Socioeconomic questions

Please fill in the spaces with your answers or mark the right answer.

1. Age .....Number
2. Gender F, M, Do not want to answer
3. Faculty and Program that you are studying  
.....
4. Semester ..... (number)
5. What are your expectation from this event?  
.....

b) Assessing the previous knowledge and interest in topic

Question	Scale (1-poor ... 5-excellent)					
	1	2	3	4	5	No
6. Please assess level of your knowledge on the topic of agroforestry						
7. Please assess level of your interest in the topic						
8. Please assess the level of how your expectation been meet						

c) Assessing the Quality of material/event

Question	Scale (1-poor ... 5-excellent)					
	1	2	3	4	5	No
9. Please assess how the presentation were interested to you						
9.* Please assess the quality of the field part of the study visit (only for the study visit)						
10. Please assess how useful is this event for your future work/studying						
11. Please state your overall satisfaction with the quality of the event (organization, venue, material, topic etc).						

12. According to your opinion, would you like to have more agroforestry related topics in your program?

A - Yes, some

B - Yes, substantial part

C - Maybe, some basics

D - No

13. If you have additional comments, suggestions or questions please write it here:

.....

Contact information – optional in case you want to be informed on future events.

Name:

e-mail:

### 5.3 Questionnaire for the evaluation of Community workshops

#### Questionnaire for evaluation of Community workshops

##### a) Socioeconomic questions

Please fill in the spaces with your answers or mark the right answer.

1. Age ..... Number
2. Gender .....F M Do not want to answer
3. Professional area of work  
.....
4. Achieved level of education: less than high school  
  - High school
  - Bachelor or similar
  - Diploma/master
  - Higher than diploma/master
5. Year of working experience ..... Number
6. Place of residence.....
7. Do you possess arable land Y N Do not want to answer
8. Do you possess forests Y N Do not want to answer

##### b) Assessing the previous knowledge and interest in topic

9. What is the reason for participating at this event? .....

10. What was your expectation from this event?

Question	1 – very poor	2 - poor	3 - good	4 – very good	5 - excellent
11. Please assess level of your knowledge on agroforestry					
12. Please assess level of your interest in topic					
13. Please assess the level of how your expectation been meet					

c) Assessing of the material/event

Question	1 – very poor	2 - poor	3 - good	4 – very good	5 - excellent
14. Please assess the presentations of the topic (where they informative and understandable)					
15. Please state your overall satisfaction with the event.					
16. Please assess how useful is this event for your future work					

d) Assessing of the benefits of agroforestry?

Question	1 – very weak	2 - weak	3 - medium	4 – strong	5 –very strong
17. Effect of agroforestry on biodiversity and nature preservation?					
18. Effect of agroforestry on social aspects (landscape, potential for tourism)					
19. Effect of agroforestry on farm management					
20. Effect of agroforestry on the diversification of the production					
21. Effect of agroforestry on the security and stability of income					

22. Would you like to receive additional training in agroforestry?

- Yes
- No

Contact information – optional in case you want to be informed on future events.

Name: \_\_\_\_\_

e-mail: \_\_\_\_\_



#### 5.4. Questionnaire for the evaluation of New curricula

### The Questionnaire for the Evaluation of Improved curricula

**Title of the module / Study level: BSc, MSc.....**

1. Socioeconomic questions
2. Age .....Number
3. Gender: F, M, Other, Prefer not to disclose
4. The Faculty/University and the Study program that you are studying  
.....
5. Semester ..... (number)
6. What are your expectations from attendance of this module?  
.....

- a) Please assess your previous knowledge and interest in the topic on the scale from 1- poor to 5 – excellent

Question	1 – very poor	2 – poor	3- good	4 – very good	5 - excellent
7. My previous knowledge on the topic of agroforestry					
8. My level of interest in the topic of agroforestry					

- b) Please assess how useful knowledge and skill acquired in this module is for your future work/studying

Question	1 - completely unuseful	2 – unuseful	3 - neither useful, nor unuseful	4 – useful	5 - very useful
9. The module's contents, learning outcomes					
10. The presentations					

11. The quality of the units intended for acquiring knowledge and skills of utilize digital databases					
12. Acquiring knowledge and skills for planning and design in agroforestry					

12. Would you like to have more agroforestry related topics in your program?

A - Yes, substantial part

B - Yes, to some extent

C - Yes, only basics

D - No

e) If you have additional comments, suggestions or questions please them here:

.....

.....

## 5.5 Questionnaire for the evaluation of New learning materials

### The Questionnaire for the Evaluation of the New learning materials

Title of the material/ Study level: BSc, MSc.....

a) Socioeconomic questions

1. Age .....Number
2. Gender: F, M, Other, Prefer not to disclose
3. The Faculty/University and the Study program that you are studying  
.....
4. Semester ..... (number)
5. What are your expectations from attendance of this module?  
.....

b) Please assess your previous knowledge and interest in the topic on a scale from 1- very poor to 5 – excellent

	1 – very poor	2 - poor	3- good	4 – very good	5 - excellent
6. My previous knowledge of the topic of agroforestry					
7. My level of interest in the topic of agroforestry					

c) Please assess the quality of the material by marking your level of agreement with the following statements on a scale from 1-very poor to 5 – excellent

Question	1 – very poor	2 - poor	3- good	4 – very good	5 - excellent
d) The content of the material and expected learning outcomes are					
e) The quality of the material is					
f) Material provides the basis for acquiring knowledge and skills for planning and design in agroforestry					

d) Please assess how useful knowledge and skill acquired in this module is for your future work/studying

Question	1 - completely un-useful	2 – un-useful	3 - neither useful, nor unuseful	4 – useful	5 - very useful
g) The content of the material will be ...					
h) The knowledge acquired will be...					

16. Would you like to have more agroforestry related topics in your program?

A - Yes, substantial part

B - Yes, to some extent

C - Yes, only basics


D - No

e) If you have additional comments, suggestions or questions please them here:

.....

## 5.6 Questionnaire for the evaluation of a Website

### Please rate the content and structure of the website

Not shared 

Quality of information provided

	1	2	3	4	5	
very poor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	excellent

The experience of searching for information

	1	2	3	4	5	
very poor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	excellent

Usefulness of the material (for you)

	1	2	3	4	5	
very poor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	excellent

How did you find out about us?

- My teacher
- Colleagues
- Internet sources
- Project partners
- Something else

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