



PLANNING FOR PLANNING FOR VALORIZATION AND SUSTAINABILITY

SURVEY RESULTS

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SURVEY RESULTS

Respondents:

1. Ljupcho Toshev - FACE - North Macedonia
2. Laszlo Gabor Papocsi, GAK Hungary
3. Ken Currie, CAPDM, UK
4. Marija Andonova, AgFutura Technologies, Republic of North Macedonia
5. Pavel Simek, WIRELESSINFO
6. iTStudy Hungary
7. Zoltán Horváth, Galamb József Secondary School / Hungary



1 DO YOU HAVE A PLAN FOR THE SUSTAINABILITY OF THE WORK OF THE PROJECT BEYOND THE PROJECTED FINISHING DATE?

FACE: In general FACE would like to continue (after the end of the Project) to use the Moodle based training for VET Teachers. It contributes to one of the goals of our strategic plan 2018-2021 (provide services to the constituents). FACE would like further to use the platform (i.e. next 3-5 years) if possible. This should be discussed on the closing partnership meeting in Mako (HU).

GAK: As GAK is rather working in adult education than vocational teaching, our target group is agricultural producers, processors, land managers and the experts assisting them, primarily farm advisors. As the Agriteach project prepared a programme tailored for teachers who transfer the knowledge to schools students, the most readily available use of the learning content can be targetted for farm advisors. Therefore, in the first step, we plan to develop training for farm advisors in the area of digital agriculture and precision farming, starting the preparation already in June 2019 and follow with the accreditation process from September 2019. In the meanwhile we are developing eLearning material for St Istvan University, partially exploiting the structure and some of the content of the Agriteach pilot course.

CAPDM: Yes

AGFT: The curriculum of the project Agriteach will be part of AGFT everyday practice. Taking in consideration that Precision Agriculture is one of the fields where AGFT provides its services, this project is complementary with the education of our clients in the future, and will contribute to raising awareness to all stakeholders in this area.

Winfo: WIRELESSINFO cooperates with Czech University of Life Sciences Prague (CULS Prague). Outputs of AgriTeach 4.0 project can be used for preparing of education materials and learning course at CULS Prague and knowledge could be used at Precision Agriculture Centre at CULS Prague. WIRELESSINFO cooperate with many other societies and companies too, which are focused on agriculture and education.

ITS: iTStudy, as the developer of the 1st module in Agriteach 4.0 course, will deliver this module in the Further Training Program for VET Teachers. Taking part in the development of the other modules, iTStudy will be able to extend its training portfolio with special IT tools and applications used in the Agriculture.

GJMSZI: Yes, in secondary education. From the school year 2020/2021 our school – uniquely in Hungary - will launch new course on precision agriculture as specialization to the National Training Register (OKJ), therefore we expect that the number of training participants in vocational education will increase among those who have previously taken the matriculation exam. In order to introduce the new course, much effort will be required in the curriculum development, where main resource will be AgriTeach modules and textbook content. The pilot course taken by the teachers of our schools, will ensure that well prepared teachers will be available to transfer their knowledge, acquired in AgriTeach project, to the students interested in the nation-wide introduced new precision agriculture education. The online modules and the textbook will also be useful in the further education of agricultural machinery technicians, in the topics of precision agriculture for machinery engineers, as well as technicians in in precision plant protection and horticulture.



2 INTELLECTUAL OUTPUTS

2.1 IO1 - E-COMPETENCE MAP OF AGRICULTURAL WORKERS FOR AGRICULTURE 4.0

FACE: A survey was conducted among farmers from target countries (HU and MK) gathering basic background information about the respondents (type of farm, size, number of employees etc.), but most important are the results of the level of knowledge about ICT tools and precision farming methods among the farmers and its level of utilization. This data we can use in future actions (proposals) at national level (Macedonia). Although in Macedonia only 11 responses that was part of the survey, they all are typical representatives of the Farms that use ICT. However in both countries the majority of users feel that they do not utilize ICT to its fullest potential.

GAK: The collected data and the results of the survey evaluation that we concluded among nearly 100 respondents, being employers in the agricultural sectors, gave us a lot of information which could be and can be used in developing not only better training for farmers, but also fine-tuning our advisory services. Some of the information received we could use in developing the follow-up project proposal "Wise Farmer", that was submitted for grant request during 2019.

CAPDM: CAPDM believe that competency frameworks/competence maps offer clarity to learning and learning design, so would want to see this openly promoted with a view to it being refined into a generally accepted framework.

Winfo: The e-Competence Map of Agricultural workers for Agriculture 4.0 could be modified for the CZ area.

ITS: Aligned with EU initiatives for decreasing the gap between the VET schools and the world of work, it is a key task to map the e-competences needed for the future workers of the agriculture. The outcome helped the company in developing up-to-date training programs relevant to the needs of the labor market in this sector. While iTStudy is not a training provider for the special agricultural professionals, the new technology is crucial part in the agricultural jobs as well.

2.2 IO2 - TRAINING NEEDS OF TEACHERS FOR PREPARING STUDENTS FOR AGRICULTURE 4.0

FACE: The results of the survey provides directly usable information for the educational system itself, but its conclusions forms a very important input for follow-on working phases, including the development of the training.

From the results, we can conclude that the teachers are not well informed about the opportunities for ICT tools that exist and circulate around them. In addition, beside the tools for theoretical education, the surveyed teachers have lack of knowledge and experience with digital technologies for modern farming like telematics, remote sensors, robotics, etc. Therefore, the teachers are not familiar with sophisticated ICT tools like those for Precision Management, big data analysis, ERP software, etc. Such disappointing results are a serious problem that today's VET system for agriculture is facing with in the Republic of Macedonia.

FACE will use this data in order to promote the Agriteach 4.0 Training Program for VET Teachers in Macedonia.

Even though the majority of the teachers use laptop and desktop PC's in their daily life, communication and education process, their knowledge and exploitation of ICT for the purpose of agricultural education is moderate. Continuous education of teachers about current and latest trends and innovations in the agricultural field have to be frequent and even compulsory.

GAK: As mentioned, we are not working directly in the vocational education, however, the needs of farm advisors in our network are similar to that of the teachers.

ITS: This outcome provided an insight into the present state of the IT readiness of VET teachers in the Agricultural sector. ITStudy will utilize these information while designing new courses for adult learners and teachers working in the agricultural sector.

2.3 IO3 - SYLLABUS AND LEARNING CONTENT FOR AGRITEACH 4.0

FACE: Agritech 4.0 Project created contents of the Course authored and reviewed in English, and translated into Macedonian all 3 modules.

Module 1.: Reinventing agricultural education

Module 2: European Strategies and initiatives of e-Agriculture

Module 3: Digital systems of Agriculture 4.0

This is very useful IO for FACE, since FACE plan to provide the Course for VET Teachers that are not included in the test phase, which can be upgraded and updated in future.

The function of farm advisors and vocational school teachers are similar in the sense that both are working in knowledge transfer, where the target group, method and circumstance of the transfer can slightly differ, but much of the content is the same. Even there are overlaps in some of the differing points: often school students are family members of adult farmers, the formal and nonformal methods can be mixed in both training, as well as the online, practical - on-farm - and schoolroom learning environment.

GAK: The adaptability of Agritech syllabus and learning content is especially true for the structure and the thematic orientation, the focus on practical examples, hands-on techniques, etc. Therefore it will be a logical and straightforward process to tailor the Agritech learning content for the needs of farm advisors, that is our short term objective, as indicated before.

CAPDM: CAPDM would want to offer and promote the AgriTeach online courses as open courses (i.e. unsupported, un-assessed) for VET education in the UK. Again it would be good to offer the syllabus as 'open' in the hope that it might be adopted and refined.

AGFT: AGFT will promote the developed curriculum in all present and future communication with stakeholders in the industry. Based on its previous cooperation with many stakeholders, AGFT is able to use this IO for future education in the area of digital agriculture.

Winfo: Syllabus could be a little modified and translated to the Czech language and used for education at CULS Prague courses or selected agricultural high schools.

2.4 IO4 - AGRITEACH 4 LEARNING MANAGEMENT SYSTEM

FACE: The used e-learning system, based on the open source Moodle (Modular Object-Oriented Dynamic Learning Environment) software incorporate the functionalities of learning and content management. The planned topic-oriented course structure was built along a well-planned time-line.

FACE would like further to use the platform (i.e. next 3-5 years) if possible. This should be discussed on the closing partnership meeting in Mako (HU).

GAK: GAK has over 10 years experience in operating and using the Moodle LMS for our trainings, so what we have benefited from, and can utilize in the future are some small techniques that we learnt during the project.

CAPDM: CAPDM will adopt and adapt the Moodle platform to include some features more suitable for open, but unsupported, courses.

The syllabus gives a basis for developing further training programs and deliver them in different form and duration relevant to the needs of the actual needs of our customers.

2.5 IO5 - AGRITEACH 4.0 FURTHER TRAINING PROGRAM FOR VET TEACHERS

FACE: According to our previous statement - Providing certificates will be an issue that we will need to discuss in Mako, as well.

GAK: Our role in the facilitation of the pilot training programme gave us some useful experience which we can use in developing courses in the future. For example, the completion of the practical exercise in Module 2 required the use of a mobile app, that was missing by several participants, in lack of owning a smartphone or incompatible - too low - version of the OS. In the future we will assess the availability (and OS version) of devices by participants, and provide missing devices, if needed. Some of the feedback provided by the pilot participants, including their forum activity, describing the methods they use for teaching, their Module 2 practical exercise input about farmers' issues (examples) and their evaluation of the course, are all very precious and valuable assets for next steps.

ITS: The online program will be a part of the portfolio of the training company.

2.6 IO6 - PLANNING FOR VALORIZATION AND SUSTAINABILITY (W. DIGITAL TEXTBOOK)

FACE: The digital textbook is a crucial IO for the sustainability. With a very valuable data as a dissemination tool of the results of the project; It opens up the content to a wide community who will be invited to use and suggest continued improvement of the learning content; as well to include the collective experiences from the pilot projects, plus a valuable summary of the evaluation by the external participants and by representatives of the target group.

If we agree on the issue on Intellectual Property Rights, as we discuss in Skopje, FACE will continue to use the results of the Project, in order to utilize beyond the end of the project, in particular to our future business direction and goals.

GAK: It will be very interesting to see (from the feedback to this survey) how each project partner looks into the future, how much they are motivated and enthusiastic to go on - based on this project's background and outcome. We will be glad to continue the collaboration with some of the partners if we see common interest and find common strategies. Regarding the use of the textbook see our response at the end of this survey.

CAPDM: CAPDM will publish a digital textbook in a variety of formats (HTML, PDF, ePub 3 at least), using these to maintain and support an open 'MOOC' of the course.

Winfo: Digital textbook could be a little modified and translated to the Czech language and used for education at CULS Prague courses or selected agricultural high schools.

ITS: Having wide professional network with the vocational and higher education in Hungary and in Europe, iTStudy will distribute the project results, among them especially the textbook inside our partnership, and offer it for reuse and adaptation as well.



3 WHAT WILL BE THE ADDED VALUE (OF THE RESULTS) TO YOUR ORGANIZATION AND THE WIDER COMMUNITY?

3.1 IMPACT

Impact / Systemic

6 responses

FACE: The impact on the Macedonian agricultural VET system is visible. This is a very innovative practice for transferring learning methodologies and implementation of contemporary ICT practice from EU and worldwide, both from Agriculture 4.0 and using ICT in learning purposes. This can also influence relevant policies to be developed for agricultural VET system to use ICT and OER in education and training.

This is in line with the Macedonia's Strategy for Vocational Education and Training in a lifelong learning context (2013-2020) defined challenges: namely, the rapid development of new knowledge and technologies, frequent changes in the labor market, growing demand for highly qualified labor, aging of the population, impact of globalization, and the process of accession of the Republic of Macedonia to the European Union.

GAK

- to provide experience, structure and content for the developing of the 'digital farm advisor' training course; e-advisor is an action line in the Digital agriculture strategy, within the national digital welfare strategy

-the needs and specifics of smallholder farmers

- responsible innovation

- wise farming

CAPDM: The AgriTeach courses are of general interest to the Agri-community, and of specific interest to VET institutions working in agriculture. There is value in promoting the competency framework and syllabus, as well as an open course based on these. This could serve as a 'bridge' for Individuals to learn and understand more about the role and influence of IT in agriculture, but also as an adaptable syllabus and content base for possible VET courses at institutions.

AGFT:

- needs and wants of stakeholders

- impact on policy makers

ITS: The vocational education is facing with difficulties in providing knowledge, skills and competences for their students relevant to the needs of the rapidly changing needs of the labour market. The project results, the online course, tested by VET teachers in Hungary and in Macedonia, and freely available in four European languages - is a small, but strong step towards getting over the gaps.

Even if the new content will not be built in at once into the standard curricula of the agricultural education, it gives a real option to renew the knowledge and skills of agricultural workers in further training programs, what will emerge system level changes as well.

GJMSZI: Creating an educational environment for a new profession

Impact / Participants (learners, teachers, mentors):

The impact on learners (Teachers in Agricultural VET Schools):

FACE: This is a quote from the report from piloting (testing) phase - "The general feedback from the participants, regarding the course was very positive. Some of the teachers had previous experience with Moodle and similar educational tools, while others used it for the first time. They all agreed that learning through Moodle and other similar learning management system stimulates even the least interested students. All participants agreed that the online course had a significant impact in their professional development and after completing the course, they are ready to implement some of the new methodologies learned in Module 1".

From the above mentioned statement the Learners of the Course increased level of their digital competence and have more positive attitude towards the European values, improved competences, linked to their professional profiles.

GAK:

- learners feedback is available from the course evaluation form assessment report, <http://moodle.agriteach.hu/mod/questionnaire/report.php?instance=2&action=vall>
- teachers (online facilitators) have gained experience in managing e-learning course

CAPDM: Similar to the above.

AGFT:

- -experience of different teaching methods
- -experience of new knowledge in the area of digital agriculture
- -creating strong cooperation with different teachers for other educational institutions
- -motivation for professional training and education and skills development

Winfo:

Teachers can receive more attractive tools and context for education, which can develop their knowledge and competence.

Learners will receive actual information and knowledge about precision agriculture, smart agriculture and agriculture 4.0. Technologies of Agriculture 4.0 make agricultural area more attractive for young people. We expect that the these technologies will attract young workers and they will use modern technologies of agriculture 4.0 effectively.

ITS: The feedback of Hungarian VET teachers participating in the pilots clearly proof the quality of the learning content and the methodology used in the online course.

Learners: the Hungarian VET teachers who completed successfully the requirement of the course received the certificate of Agritech Consortium, and the certificate of "Innovative teacher, creative classroom" accredited in the Hungarian system of the Further Training Program of Teachers. For this they receive credits obligatory for them in every two years. The certificates help them to go ahead in the professional-carrier program of teachers declared by the Hungarian law for the education.

GJMSZI: Use of study materials



Impact / Partner organization, staff:

FACE: FACE will use the maximum of the outputs of this Project in terms of our future activities (New Project proposals in relation to the subject; Providing services to VET Schools or other training providers, farmers, and youth), as well as improvement of the staff capacities (i.e. mentors capacities providing guidance to learners).

In conclusion the impact on FACE is:

- Strengthening the Partnership capacities of FACE in future Projects (Erasmus+ and others) as an excellent reference.
- Strengthen Staff technical capacities, continuing their professional development, as well as their motivation working in the educational sector.
- Improve visibility and expertise of FACE in front of the target groups and policy makers.
- Enrich the offer of services (training) to the target groups.

GAK:

- involvement in the project will support staff in continuing professional development
- skills will be further developed in managing international projects
- increased innovative mentality and motivation by new experiences
- better opportunity for future collaboration, common projects between projects, based on trust and better knowing each other

CAPDM: CAPDM are not teachers but any course, including an open course, teaches us much about what a particular user base wants from such education. For example a community of individual learners who operate cooperatively, rather than competitively, will want to learn as much from others as possible so communications and information sharing is important.

AGFT:

- Additional Development of staff skills
- knowledge and understanding the partner organization educational system
- increase and strengthen partnership with stakeholders
- Additional value on AGFT services

Winfo: New information, experience and knowledge, which were received from partner cooperation in the project AgriTeach 4.0. Experience and knowledge will be used in future work.

ITS: The fellows of iTStudy who were involved into the project establishment have different benefits from developing professional skills (while working on the learning materials), project and quality management skills (while planning, controlling the progress of the project, and evaluating the results), collaboration skills in international team and their language skills during the face-to-face and virtual collaboration.

GJMSZI: Better skilled workers in the educational output

4 VALORIZATION

4.1 WHAT ARE THE RESULTS OF TESTING – PILOTING THE COURSE?

FACE: Starting from April 1 until May 6, 20 teachers from 7 VET schools in North Macedonia, enrolled in the pilot course. Out of 20 participants, 16 teachers from 6 different VET schools successfully completed the course.

The general feedback from the participants, regarding the course was very positive. Some of the teachers had previous experience with Moodle and similar educational tools, while others used it for the first time. They all agreed that learning through Moodle and other similar learning management system stimulates even the least interested students.

All participants agreed that the online course had a significant impact in their professional development and after completing the course, they are ready to implement some of the new methodologies learned in Module 1.

The biggest limitation of the teachers is the not stable internet connection in some of the schools and the old and inadequate computer systems in the schools.

GAK: the results are channeled back by the evaluation forms submitted by training participants, this form will provide separate assessment output

4.2 HOW DO YOU PLAN TO USE AND DISSEMINATE THE PROJECT RESULTS UNTIL AND AFTER THE project's end?

FACE:

1. Dissemination event by the end of August 2019 - in front of representatives from VET Schools, the Center for vocational education and training, the Center for Adult Learners, Policy makers, Training providers and students.
2. Via FACE website <http://ace.org.mk/>
3. Via FACE Facebook page <https://www.facebook.com/facemkd/> (with around 1500 followers)

GAK:

- as next event, we will participate at FAO AGROVOC meeting in June 2019 in Darmstadt, where AgriTeach will be presented (it was also done a year ago in Utrecht)
- we will publish all available outputs - articles, reports and documents - on our new training website
- we will send the digital textbook to our partners in farmer education and knowledge transfer, farm advisors, researchers, farm demonstration centres, etc
- we will share it through FAO related networks, SHIP, AgroWeb, Escorena, etc
- we will always reference to Agriteach 4.0 in all new pieces of training (according to CC-BY 3.0), which is using any of the results (structure, content)

CAPDM:

By offering an open course within the UK, plus offering the competence map, syllabus and course content for use and adaptation by VET institutions.

AGFT: AGFT plans to disseminate the project results in every communication with its stakeholders, government, companies, clients and teachers. They will be directed to go to the platform and use the provided learning content. The website is one more channel of dissemination where stakeholders will be able to access the e-learning platform by clicking a link that will be available on the company website.

Winfo: We will try to write articles (in cooperation with other partners), which could be published in journals or conferences.

ITS: We use all possible channels, distribute the project information through conferences, via online tools in our professional network: educational institutes at all level of education in Hungary and Europe.

iTStudy will run the project portal and the e-learning platform of the project at least during the next 5 years.

The final outcomes will be built into our training portfolio .

Galamb: During secondary education, in a classroom setting.

4.3 PLEASE DESCRIBE THE DISSEMINATION AND EXPLOITATION ACTIVITIES YOU'VE TAKE ON ALREADY

FACE:

Dissemination Agritech 2017-2019:

- Online posts:

- o 27.05.2019 – Facebook post on the official facebook page of FACE
- o 18.10.2018 – Facebook post on the official facebook page of FACE
- o 14.09.2017 - Facebook post on the official facebook page of FACE

- Multiplier events:

- o 17.05.2019 – Multiplier event E4: Teachers feedback from the pilot
- o 21.12.2018 – Multiplier event E2: Teachers for Agriculture 4.0

- Workshops/Events:

o 12.05.2018 - "Days of lifelong learning" - As a part of the event "Days of lifelong learning" hosted by the Community Development Institute, the executive director of FACE had the chance to present the Project Agritech 4.0 to the providers of educational services present on the event.

o 20.06.2018 - "Civil Society Organizations week (18-22 June)" - As a part of the Civil Society Organizations week (18-22 June) in Macedonia, Foundation Agro-Centre for Education presented AgriTeach 4.0 project. Brochures in Macedonian and English were disseminated to the participants. 30 high school VET teachers were present at the event

o 08.06.2018 – "CSO Networking activities" - As a part of the networking activities between civil society organizations and other stakeholders in Macedonia, Foundation Agro-Centre for Education presented

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AgriTeach 4.0 project. Newsletter in Macedonian and English were disseminated to the interested parties. The event was held on 08.06.2018 at Hotel Continental, Skopje. More than 100 participants from 33 CSO's took part in the event

GAK: During the project implementation, we have reported our dissemination activities using the form: <http://www.agriteach.hu/en/node/27/webform-results>

CAPDM: Minimal to date, but this will ramp up with the promotion and offer of an open course to the agri-community and to VET schools.

AGFT: A separate link on the AGFT website will be created with short explanation of the learning platform, where all visitors of AGFT website can click and be re-directed to the Moodle platform. Additionally, in all promotional activities of AGFT we will dedicate a separate section for the learning platform on the website, because it is of a strategic interest of AGFT to increase the awareness among stakeholders for the topic of digital agriculture.

Windfo: Presentation of the project on conferences and hackathons.

ITS: Multiplier event, website, e-learning platform, conference presentation, EPAL platform.

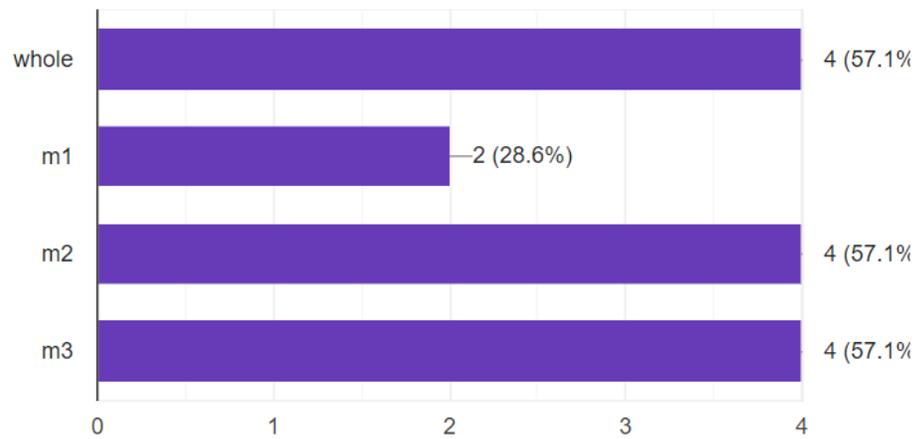
Galamb: Preparing educators to transfer knowledge acquired during the course.

4.4 DO YOU PLAN TO USE THE TRAINING PROGRAMME IN THE NEAR FUTURE TO

- implement it fully as your own course: 42,9%
- modify it for other orientation (which: Organic Farmers, Farm advisers): 57,1%
- modify it for other target group (what: unemployed youth): 71,4%
- provide it for other educators who can implement it: 57,1%
- collaborate with new partner(s) on the implementation fully: 42,9%
- collaborate with new partner(s) on modified design and delivery: 42,9%

Do you plan to use the program as a whole or in separate modules

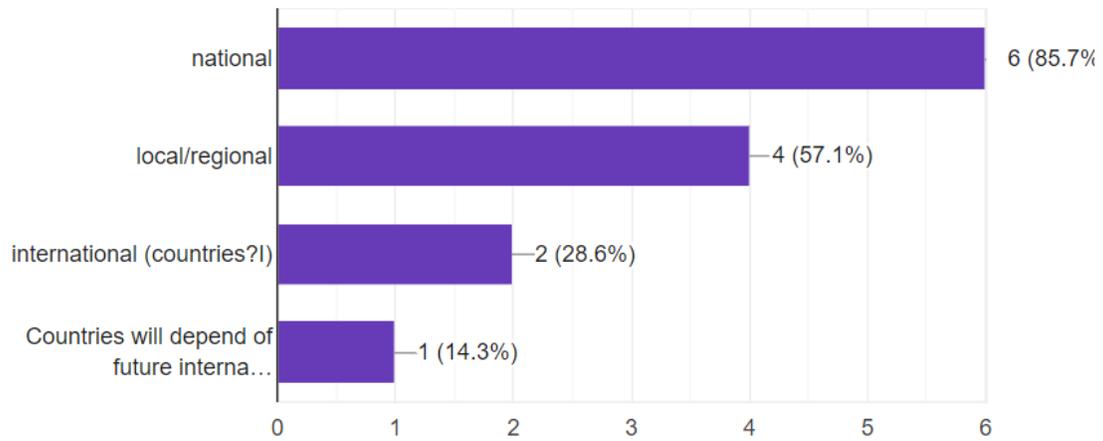
7 responses



Do you plan to use the programme at which level

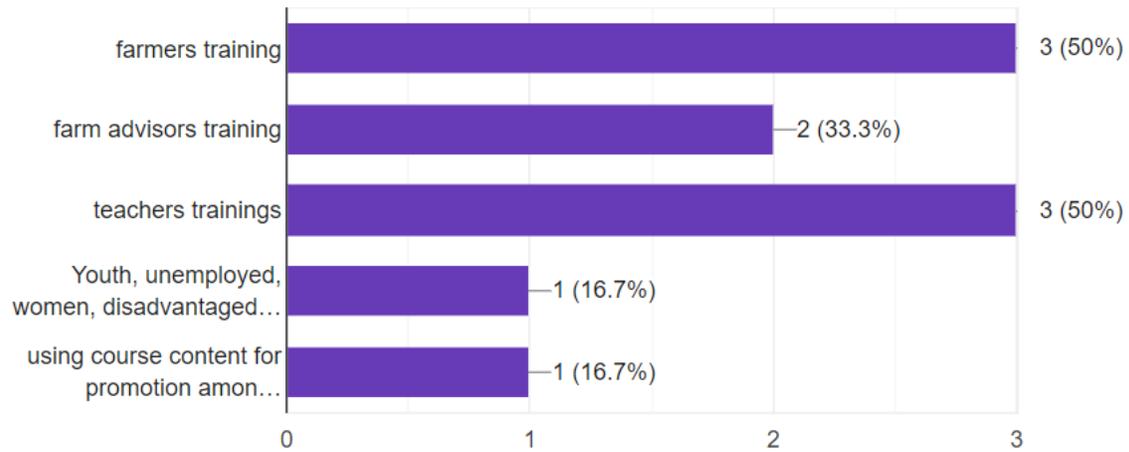


7 responses



Do you plan to use fragments of the course content in

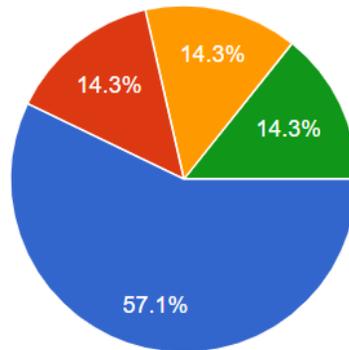
6 responses



Do you plan to follow the direct impact on learners (teachers) in the schools?



7 responses

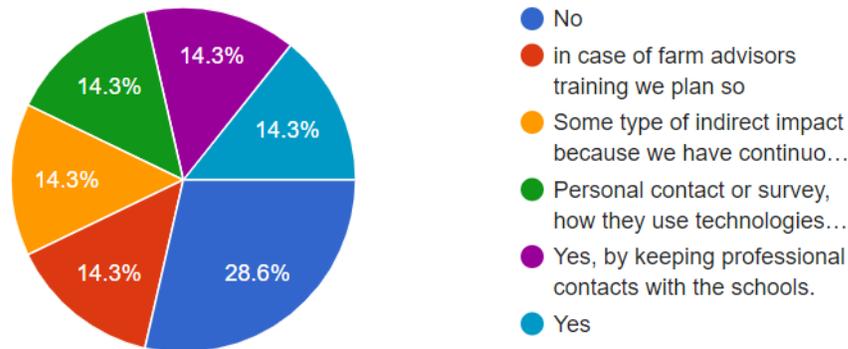


- No
- Maybe. Since we have other projects with the targeted VET Schools, we can provide a questionnaire to Teachers on the use and satisfaction of the methodology, moodle, ICT in Agriculture, etc
- with follow-up surveys
- Yes

Do you plan to follow the indirect impact on students in the schools, and later on the labour market/farms?



7 responses



4.5 DO YOU PLAN TO USE THE DIGITAL TEXTBOOK FOR WHAT PURPOSE:

FACE: For dissemination. First dissemination event will take place in Skopje in end August 2019.

GAK: dissemination, learning textbook

CAPDM: As a general, open offering, including as part of an open course.

AGFT: The digital textbook will serve as an additional promotional material as part of AGFT educational content.

Winfo: After translation for education of learners.

ITS: Only parts of it. But we will promote its distribution towards VET schools

Galamb: Yes, for educational purposes

4.6 ANY OTHER REMARK YOU FIND IMPORTANT TO MENTION WITH REGARDS TO THE FOLLOW-UP AND SUSTAINABILITY OF THE PROJECT:

FACE: To resolve the issue of continuing use of the Moodle platform and Training content.



AgriTeach 4.0

