



ITFARM

IT for Interconnection of Social, Economic and Environmental Aspects in Agribusiness

WP1 – Survey on Farms and Current Situation and Demand

(Please provide your findings from the Survey by 15th June 2022 by summarizing the feedback from the questionnaires in the following structure using the following formatting: Font Calibri, Font size: 12)

Introduction and profile of the participants

(Including Q1: Age of the participants and Q2: Main scope of the business in Agriculture)

12 farms provided their answers.

Age:

18-29:2

33-39:4

40-49:3

50-59:1

60+:2

4 of them cope with animal husbandry (one beekeeper; one small-scale farmer mentioned it's joint activities which includes horticulture, animal husbandry (milk production), 5 (6 with the small-scale farmer) with different types of horticulture, 3 crop production)

The size of the farms was different, and a beekeeper also participated in the survey so in her case the size is not relevant (she has 75 bee families). The farm sizes are between 2.7 hectares and 700 hectares.

The year of establishment was after 1990 in most of the cases (only one was established in the early 1900s).



Regarding the number of employees 4 of them does not have any, 4 them had one. The 320 hectares owner have 18 employees, the one with 700 hectares have 44 employees, the mushroom producer have 29, the quince producer have 1 employee.

What technologies are currently in use in businesses? Positive impacts and possible obstacles or challenges in relation to their use. (Q3)

The businesses use 15 types of technologies for their activities.

5 of them use weather connected stations which helps them to provide on-time information about the coming weather conditions – which can be really useful in case of planning the irrigation, spraying, sowing. Automatic irrigation system is used by 4 of the businesses which helps the farmers with the correct method of irrigation (the plants receive as much water as it is necessary, timing makes the work easier because the setting is saved and there is no need to start the irrigation by workers early in the morning – the timer can be set up to night hours. One of them (the one with 320 hectares, crop producer) used soil management and seeding management systems such as: seed drill depth control system this business also uses smart fertilization management technology: Variable-rate fertilizer control system based on ZigBee technology. The 4 animal husbandry business representatives use technologies related to animal health and welfare and 3 of them use feed management systems.

3 other technologies were named by the participants:

- Auto-track system for the tractor - The auto-track helps the tractor to follow the track regularly and switch to the connecting tracks. The documentation records the work already done, so the machine does not perform additional work. Fixed field boundaries help in orientation in fixed directions, albeit in an efficient field process. Section control reduces large overlaps due to the width of the implement, so material application is more economical, and the probability of burnt stains is lower in the case of chemicals.
- Automated growing houses for mushroom
- Automated alarm system against starlings in the plantation

Which are the main factors impacting the process of decision-making about introducing and applying new advanced ICT technologies in the businesses? (Q4)

"The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein."



Co-funded by the
Erasmus+ Programme
of the European Union

Most of them (10) indicated the return to investment as a main factor, but also the high capital investment (8) and Lack of financial resources to research and purchase new technologies (5) were highlighted the most. The other indicated factors were the following: Complicated use (2); High technical staff required (4); Lack of detailed information (2).

Preferred types of additional training opportunities to support the process of introducing new ICT technologies in business. (Q5)

Most of them would support presentations by specific companies and workshops in order to learn more about new technologies which could be used for their activities. The most important problem to be solved, is to promote the set-up experiments as widely as possible. Motivate and persuade farmers to organize joint experiments so that as much information and processed data as possible is available to draw good conclusions

Practical skills lacking the most in order to apply advanced ICT technologies in businesses. (Q6)

The most important was highlighted by 6 participants: Lack of practical knowledge of processes related to ICT technologies (applicable software, equipment etc.). 5 of them said: Lack of skills to effectively identify and address the existing challenges and problems where ICT technologies could be successfully and effectively applied; 3 of them indicated: Lack of theoretical knowledge of processes related to ICT technologies (applicable software, equipment etc.); only 2 of them choose the lack of basic ICT skills and lac of confidence using ICT technologies.

Conclusions:

The 12 responses involve information mostly about small farms which means the used technologies, tools are not that common in the activities. The small farmers do not have the financial resources to invest in IT technologies (for example for a farmer who has 2.5 hectares with sea buckthorn the investment's cost would be so high that the return of it would maybe take years) and another challenge is that the farmers do not have enough information on the possible technological solutions. Most of them were interested in the opportunities connected to ICT technologies in their acitivities, but they see quite a lot barriers of the investments. For a farmer, producer who has a bigger area of land and more



income the usage of ICT technologies seems to be easier, but for a small farmer it is a huge challenge.

Recommendations:

The above-mentioned ICT assets used by the farms, both production efficiency target with lower mileage, less fuel consumption, less applying fertilizer seeds and pesticides can be reached – which means that these assets could really make easier the activities. But the vantage of these systems are not well-known by the farmers, producers.

1. Management should recognize the positive adds of ICT technologies and for this it would be important to have the skills to understand the processes behind the mechanisms of each technology. The methods of saving are. The steps aimed at differentiation are technically clear, but the demonstration of advantages is difficult in the factually realized yield surpluses – thus the suppliers should give more attention to this in their marketing activities.
2. The farmers would need more support to implement the new technologies. The seller companies should somehow involve these aspects into their marketing activities. Organizing workshops, trainings for farmers in order to share with them most important key aspects of technologies and the positive effects of these.
3. The size of the farm determines the opportunities of investment in ICT technologies. A small farmer with 2 hectares would not be able to invest in a machine or supporting application by themselves. This also should be taken into consideration by the supplier companies and the financial support should also planned

