

## A Participatory Vision Regarding the Organic and Conventional Farming - Case Study, North-East Development Region

Mihai Alexandru Chițea<sup>1</sup>, Marioara Rusu<sup>1</sup>, Lorena Florentina Chițea<sup>1\*</sup>,  
Ioan Sebastian Brumă<sup>2</sup>

<sup>1</sup>Institute of Agricultural Economics, Romanian Academy, District 5, Bucharest, Romania

<sup>2</sup>Gheorghe Zane Institute for Economic and Social Research, Romanian Academy, Iași Branch,  
Teodor Codrescu 2, 700481, Iași County, Romania

\*Corresponding author. E-mail: chitu\_lorena@yahoo.com

### ABSTRACT

The paper follows the increasing debates regarding the future of agriculture, a sector that is under a rising pressure determined by the demographic development, climate and economic changes, by turning to local experts' opinions regarding the main characteristics of organic and conventional farming in an area facing natural constraints, namely Dornelor basin, Suceava County. The analysis is based on a participatory instrument, Delphi exercise, a structured communication technique, designed for collectively addressing an important theme or specific problem. The data was collected through three rounds of Delphi exercise and processed using both quantitative and qualitative method. The results highlight the fact that an organic farm would be larger in size, compared to a conventional farm, would mostly use local inputs and resources without chemical substances, would require larger labour inputs and would, likely, be part of an agricultural system that integrates livestock, cover and catch crops and direct drill practices.

**Keywords:** ecological farming, conventional farming, agricultural practices.

### INTRODUCTION

Nowadays, agricultural systems are at an important crossroad, having to respond to multiple challenges driven by the need for more agrifood products, tackling climate changes and trying to reduce the pressure on the environment. The conventional agricultural system, with a higher output than other alternative systems, has been, for a long time, the first choice for responding to the increasing global food demand. This pressure, though, led to a series of negative consequences, like soil and habitats degradation, loss of biodiversity and increase of the greenhouse gas emissions (Azarbad, 2022). Loss of soil, including its fertility, increased demand for water and impact on the environment, based on the intensive use of chemical substances, are among the most alarming issues as regards agriculture's sustainability (Gomiero et al., 2011a; Burtan et al., 2023). In this context, agricultural systems are, in general, evaluated based on their productivity and economic performance,

while lacking a systematic evaluation of their multifunctionality (Wittwer et al., 2021). Land use practices, while they are essential for humanity, providing key natural resources and ecosystems' services, can also lead to the degradation of these elements that we depend on. In other words, conventional agricultural practices can trade short term increases of production for long term losses of ecosystems' services (Foley et al., 2005).

A viable option, in this context, is the eco-functional intensification through organic agriculture, an approach that is based on using and enhancing the natural resources and processes for ensuring and improving the productivity (Lori et al., 2017). Organic agriculture is based on practices that rely on ecological cycles and aims to minimize the impact of agrifood industry on the environment, preserving the long-term sustainability of soil, while reducing the use of non-renewable resources (Gomiero et al., 2011b). Management practices are essential for supporting crops' production and preserving and/or improving soil' quality -

the capacity to maintain important ecological functions like decomposing and buildup of organic matter (Petcu et al., 2014). Moreso, in organic agriculture soil' health and fertility are maintained through biological practices, like crop rotation, manual labour, weeding, use of green manure and compost and by selection of favourable genotypes for this type of agriculture. Summarizing, the organic agriculture is a production system that relies on natural resources, while minimizing external inputs, aiming to promote ecosystem' health - a system that forbids the use of synthetic fertilizers, pesticides and genetically modified organisms (Petcu et al., 2011).

This is the general debates context in which our research has turned to experts from Suceava County - located in the North-East development region of Romania, in order to identify the main characteristics of organic farms as compared to conventional ones and to evaluate the future development potential in this area facing natural constraints.

## MATERIALS AND METHODS

The present study turned to Delphi exercise, that is one of the most popular forecasting qualitative techniques (relying on human judgement instead of measurable data), developed in the second part of the 20<sup>th</sup> century, initially for the industrial sector, where predictions were difficult to achieve due to the rapid technological advances (Horrilo et al., 2016). Later, this instrument was also adapted to various domains, including forestry management, agri-food sector, climate changes and many more. It is a useful method to reach consensus and to generate ideas, especially in researches that approach a complex theme that requires the involvement of experts from a specific domain (Fefer et al., 2016). Being a structured, anonymized and iterative survey of a group of experts, it can be used for reaching consensus regarding different and difficult subjects, that would be hard to approach be using other face to face methods, like focus groups (Mukherjee et al., 2015).

As regards the structure, the Delphi method usually comprises two or more rounds of structured questionnaire, each one followed by data collection, analysis and anonymized feedback to participants, together with new questions. The exercise runs until consensus is reached.

Our study turned to a three stage Delphi exercise, involving 10 experts from Suceava county, most of them with more than 10 years of work experience in a wide range of specific areas such as research, public administration, farming activities, consultancy and extension, food processing, marketing and NGOs sector. The research activities were carried out during 2020.

After the first round, the answers were collected, analysed and sent, after anonymization, to the participants (allowing them time to read the report and to formulate feedback), together with the questions from the second round. This process was repeated after the second round, when the final stage of the exercise begun. At the end of the exercise, a final report was presented to the experts involved in this research.

Table 1. Response rate - Delphi exercise

Round	Sent	Received	Response rate
1	10	10	100%
2	10	10	100%
3	10	9	90%

Source: own calculation on the basis of Delphi exercise

The high response rate levels were expected, as participants were carefully selected based on their experience regarding the research subject and strong connection to the specific area where the study was conducted, namely Dornelor Basin from Suceava County. Throughout the Delphi exercise, the experts showed a real interest for the research theme and for the future or organic farming, providing extensive and compelling arguments in support of their collective vision - picturing a real development potential in this area in the near future.

## RESULTS AND DISCUSSIONS

The first round of the Delphi exercise aimed to collect experts' opinions regarding the characteristics of organic farms as compared to conventional ones. The first question approached the agricultural practices that an organic farm would likely use in comparison with a conventional farm.

Experts' answers led to a general consensus regarding the use of traditional agricultural activities, of local inputs (especially organic ones like livestock manure), without chemical substances and limited use of mechanical works. Some of the most important arguments provided by experts in support of this general characteristics of an organic farm are presented below (Table 1).

Table 1. Experts' arguments supporting the general characteristics of an organic farms

Domain	Arguments
Practices	Use of traditional practices, environmentally friendly, practices that ensure livestock welfare, manual weeding, use of local organic manure and compost, crops' diversification.
Labour	Mainly use of human labour, reduced mechanized works.
Inputs	Forbidden use of GMO's, use of local resources and inputs, non-use of chemical substances.
Other	Maintaining the permanent grassland areas, extensive use of cover crops, use of products allowed in organic farming for pest and disease control.

Source: own processing based on Delphi exercise

Moving forward, the experts had to rank 12 agricultural practices that are the most important for defining an organic farm. A strong agreement between experts was displayed here, for placing first the "use of organic manure or compost" (8 out of 10 experts choosing this practice as the most important), followed by "integration of crop and livestock at farm level" and "strip grazing":

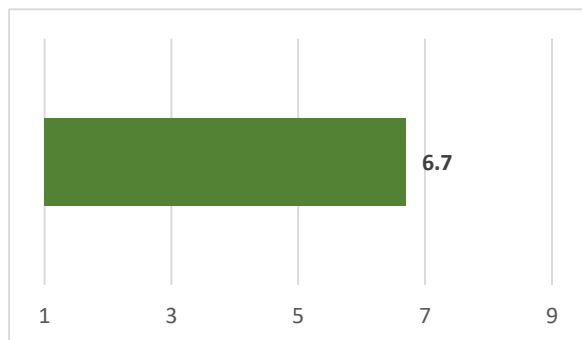
- "The agricultural practices that would be used by an organic farm, contrary to a conventional one, are those that come as close as possible to traditional practices, manually, by giving up chemical inputs and using those of organic nature" - participant in round I of Delphi;
- "Integration of crops and livestock at farm level and strip grazing are the main agricultural practices that will determine the size of an organic farm in the following years" - participant in round I of Delphi;
- "In organic agriculture, livestock farming

*is indispensable. Bovines are important from the production point of view, for ensuring grazing and for obtaining the natural fertilizers.*" - participant in round I of Delphi;

- "Low tillage use, organic fertilization (organic manure or compost), manual weeding" - participant in round I of Delphi.

Other important agricultural practices for an organic farm, that emerged from the experts' ranking exercise, were "alternative remedies for livestock disease management", "extensive use of cover crops" and "number of crops". As expected, "machine weeding" was the least important agricultural practice for defining an organic farm, according to the experts.

As regards the size of an organic farm, in comparison to a conventional one, the experts were asked to evaluate this item on a scale of 1 to 9, where 1 is significantly smaller, 5 represents no change and 9 is significantly larger (Figure 1).



Source: own representation based on Delphi exercise

Figure 1. Experts' vision regarding the size of an organic farm versus a conventional farm

This result supports the idea of a relatively larger size of an organic farm, backed up by participants' arguments regarding the nature of the agricultural works, labour requirements but also productivity: “[An organic farm] uses limited mechanical works, is based on traditional instruments, uses more human labour...It requires more land for an equivalent quantity of products.” - participant in round I of Delphi.

In turn, as regards the possibility of using natural products to replace chemical inputs, there is a general agreement between experts, all of them considering this to be plausible at the level of the farms from the study area. This agreement also extends to the types of agricultural practices identified by participants, the majority supporting the use of local organic resources for fertilization (manure and compost) as the most immediately at hand organic practice for farmers:

- “Improving and maintaining soil' fertility through an adequate and rigorous agro-technique, that implies a manual attending of pastures and use of organic fertilisers (green and dried manure, compost, fermented or composted household materials, peat)” - participant in round I of Delphi;
- “Composting crop residue and manure is useful for obtaining a quality fertilizer, that, based on the type of crop, can serve to a

large extent the nutritional needs of the plants.” - participant in round I of Delphi.

The next question aimed to evaluate the possibility of having an agricultural system that integrates livestock, cover and catch crops and direct drill practices. Based on the experts' answers, a strong agreement emerged, 80% of them considering this scenario to be realistic in the future or, even already, partially present in the study area, arguing that this would lead to an increased rentability, revitalization of land in the area and preservation of the productive capacity, as well as to the adaption of agricultural activities to the need of protecting the natural factors:

- “In this area, most households have a mixt character. Farms could be more profitable if they include more agrozootechnical practices. The costs for row materials would reduce, as well as many transport costs.” - participant in round I of Delphi;
- “Yes, it is realistic. Organic agriculture could represent a solution for revitalizing the land from the area, as well as for improving the productivity and obtaining better prices for farmers” - participant in round I of Delphi;
- “Such a system would be ideal. Even now, it's partially functioning in Dornelor Basin out of necessity. We refer to the need of protecting the land from the erosion caused, mainly, by water...the direct drill practice for mountainous pastures and hays restores the productive sequence of the land and improves productivity” - participant in round I of Delphi.

Instead, when experts were asked about the possibility of only having farming systems that integrate livestock and crops in the study area, the answers highlighted an almost perfect agreement of this being an unrealistic scenario, the main arguments relating to the area' characteristics (natural, productivity), market requirements, the average recommended land area/animal as well as demographic aspects (Table 2).

Table 2. Experts' arguments against the scenario of having only farming systems that integrate crops and livestock

Domain	Arguments
Area' characteristics/ Market requirements	"It would be ideal to create systems that integrate crops and livestock, but it is unrealistic to consider that all farmers should act in this sense. The market requirements, the specific of the area and farmers' possibilities are among the main factors that influence the development of agricultural systems". - participant in round I of Delphi
The average recommended area/animal	"It's unrealistic, the reasons being: ...the average recommended area/animal. It is true that the area still supports the increase of the number of animals in organic system. But the situation is directly connected also to the pastures and hays productivity, that, in turn, is influenced by the climate changes". - participant in round I of Delphi
Demographic aspects	"This system is practiced now in many households, but there is the risk of increasing land areas to go follow due to the populations' aging and decline and to livestock' decrease". - participant in round I of Delphi

Source: own processing based on Delphi exercise

As regards the agricultural works that have to be performed by the farms in the study area, the experts were asked to evaluate the need for specific machinery and equipment. The majority (8 out of 10 participants) supported this idea, based on the difficulties in ensuring the necessary labour force for the agricultural work, the specific of the activities in the area (that require production and storage of livestock feed, but also to meet the sanitary conditions for milk's storage), as well as for optimizing the agricultural works:

- "Yes, lack of seasonal/daily workers forces most farmers that want to develop (farming activities) to turn to light agricultural equipment". - participant in round I of Delphi;
- "Yes, the use of specific technologies for the organic agricultural system is needed". - participant in round I of Delphi;
- "Without doubt. These are necessary in at least two situations. Due to the high and constant volume of work that the production and storage of fodder requires, here and there in this landscape some mowers appeared that cut the grass, a wrapping machine for the bales of hay, protecting them from rain, but especially a tractor that can connect all the other equipment. The few existing such equipment is highly demanded: borrowed, rented, and rarely bought. Another type of needed equipment in organic farms are the milk cooling tanks." - participant in round I of Delphi;
- "Agricultural machines and equipment for maintaining the land areas are few in

number. There is the need for small capacity machinery, to be used by people, not by tractors. A range of machinery dedicated to the mountainous area would be very helpful." - participant in round I of Delphi.

And this brings us to the last question of the first round of Delphi exercise, aiming to capture the potential relations between the types of practices implemented by the organic farms and the needed work force volume, in terms of number of persons and work hours.

Here also, there is strong agreement between experts regarding a higher required work force for carrying out the agricultural activities at the level of organic farms from Dornelor Basin, 9 out of 10 participants choosing this option, the main arguments being related to the works' specifics (many relying on manual labour), regulations regarding livestock farming, as well as demographic aspects (rural population' aging):

- "Organic farms need a higher number of persons, as long as mechanical works and treatments can be reduced, and many (agricultural) works have to be performed manually". - participant in round I of Delphi;
- "This type of implemented practices requires a higher work force volume, as well as work hours. The technologies are traditional and the work volume, implicitly will be higher". - participant in round I of Delphi;
- "It's all about, without doubt, the use of a higher volume of labour force. The literature states that an organic dairy farm requires one full time worker for every 17 cows and



for every 21 cows in a conventional farm.” - participant in round I of Delphi;

- “In the mountainous livestock farms there’s the need for a high labour force for: maintain the pastures and hays, mowing, turning the grass, for harvesting the hay...The more the population is aging, the higher the effort is and requires a longer work time for carrying out these activities”. - participant in round I of Delphi.

### Round II and III of Delphi exercise

The second round of Delphi exercise involved the same 10 relevant experts from the case study area, Suceava County. They were asked to answer a second round of questions regarding organic agriculture, from the perspective of labour force, farmers’ income, potential changes at the level of agricultural advice services, commercial relations, as well as rural population’. In the third round, based on the common methodology developed for this exercise, the experts had to go through the questions from the 2<sup>nd</sup> round again, after being provided with the anonymised results. At this round, 9 of the 10 experts that went through the previous two rounds, have participated.

The first two questions from this round aimed to capture the future development of organic agriculture in the study area, as regards the amplitude and spatial distribution. In this context, 70% of participants considered that organic agriculture could register an important development in the near future, but based on the geographical particularities of the area, this would likely be spread across the territory, rather than clustered (Table 3).

Table 3. Experts’ opinions regarding the future development of organic agriculture in Dornelor Basin - round II of Delphi

Scenario/ spatial distribution	Clustered	Spread across the territory
Low adoption rate - 10%	-	3 out of 10
High adoption rate - 50%	2 out of 10	5 out of 10

Source: own processing based on Delphi exercise

Regardless of the future development’ amplitude, the main arguments of the experts in favour of a spatial distribution of organic farms refer, generally, to the geographical characteristics of the investigated area:

- “I think that organic farms would be spread across the territory. Looking at this moment, I think that it would be a low proportion, but if farmers would be motivated and informed in time this would increase”. - participant in round II of Delphi;
- “They would be spread across the entire territory of the basin. In the first stage, the interest would increase and only few farms would really adopt organic farming, but in a reasonable time frame a large number of farms will be attracted by the tangible (subsidies) and predicted (growing market and demand) benefits. Probably, reaching at least 50% as output, if not even as number.” - participant in round II of Delphi;
- “Strictly speaking from a geographical point of view, as placement, mountainous relief and type of settlements in the area (villages scattered across, isolated households or small groups of houses) this doesn’t allow a significant clustering of organic farms. The farmers from this area possess an entrepreneurial spirit that made them to already notice the opportunity offered by the organic farming. The correct answer to the above question is over 50% and up to 80%, given that the valorisation of the products obtained from organic agriculture is constantly ensured and also profitable for farmers” - participant in round II of Delphi.

As for the third round of Delphi, there are no significant changes as regards the experts’ vision about the future development of organic farming in this area.

Moving on, the next question aimed to evaluate the possible implications of adopting an organic farming system on different aspects related to labour force at the level of the farms from the study area (Table 4).

Table 4. Experts' opinions regarding the impact on farm' employment aspects

What would be the impact on the following?	Mean - where 1 represents a large decrease and 9 a large increase (Round II of Delphi)
Total farm employment across the area	5.6
Need for migrant labour	4.9
Wage level	6.1
Gender balance of farm heads	4.6
Flexibility of working hours	5.6
Skill level of farmers	6.8
Quality of life of farmers	6.7

Source: own processing based on Delphi exercise

The main aspects regarding the labour force, that in experts' opinion will register an increase in the study area are related to the skill level of farmers, quality of life of farmers, wage level, followed by flexibility of working hours and total farm employment across area. To a large extent, this hierarchy is very similar in the third round of Delphi, even if a slight decrease of the mean values of experts' answers is present.

When it comes to the impact of adopting an organic farming system on the total farm employment across the area, 8 out of 10 experts considered this to be a positive one, both from the point of view of encouraging the adoption and of the labour market' dynamics:

- *“The implementation of the organic agricultural system among young farmers would have a positive impact in the sense that it could determine others to practice this system also.”* - participant in round II of Delphi;
- *“Based on the area' potential, agriculture can offer plenty of jobs, especially in the livestock sector. If the labour force would be employed, the region could develop from economic point of view. Thus, it could, as much as possible, solve the problem of young generation' migration, avoiding population' aging and the decrease of the number of households.”* - participant in round II of Delphi;
- *“The labour force from the area should, firstly, be trained/qualified. We could witness*

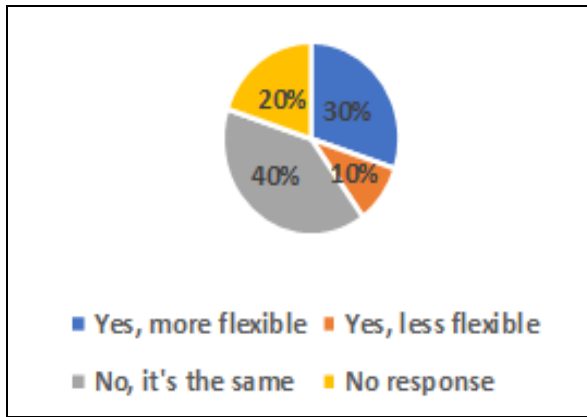
*an increased interest of young people for this sector (organic agriculture).”* - participant in round II of Delphi.

The adoption of an organic agricultural system would also lead, according to the experts, to changes regarding the number of part- and full-time jobs - an increase of the number of jobs (full time and part time), of seasonal work force required, as well as of the number of people that will become self-employed or hired on the farm:

- *“I think that there would be more full-time jobs, more farmers would set-up a legal form and would become self-employed/hired on their own farm or in other sectors.”* - participant in round II of Delphi;
- *“There would be more jobs, both full-time and part time, I am sure that many residents would like to become self-employed, rather than hired on the farm”* - participant in round II of Delphi;
- *“The adoption of organic agriculture determines a change in the status of peasants and of their family members, from that of livestock owner to potential self-employed or hired on the farm. From this point of view, the number of jobs (full-time and part-time) could increase.”* - participant in round II of Delphi;

Instead, as regards the implications of the adoption of organic agriculture on the flexibility of farmers' work programme, experts' opinions are divided, supporting several scenarios (Figure 2). 4 out of 10 experts considered that we cannot talk about a more flexible work programme in case of organic agriculture, but rather about a higher number of hours and responsibility:

- *“No, the programme is the same in both systems, only that you have to pay more attention/ be more responsible in organic agriculture, where is better to prevent than to treat.”* - participant in round II of Delphi;
- *“Livestock farming in organic system, certified or not, and especially dairy cows farming imposes a fixed work programme, from Monday to Monday, from 1<sup>st</sup> of January till 31<sup>st</sup> of December.”* - participant in round II of Delphi.



Source: own representation based on Delphi exercise

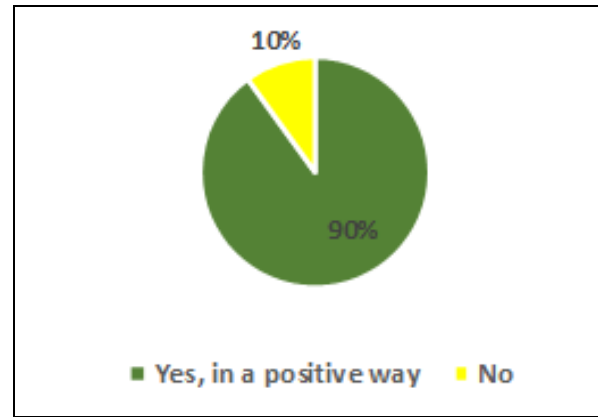
Figure 2. Experts' vision regarding the impact of adoption of organic agriculture on farmers' work programme

Other experts considered that farmers could benefit from a more flexible work programme, provided that they can attract the required labour force for carrying out the agricultural activities:

- “They could have a flexible work programme if they are organised and have employees for properly performing the tasks.” - participant in round II of Delphi;
- “The work programme of farmers in organic agriculture is flexible and depends on the farm' specifics, needs and also seasons” - participant in round II of Delphi.

As regards the rest of the experts who participated in the Delhi exercise, one argued that farmers' work programme could be influenced by the adoption of organic agriculture, but in the sense that it would be less flexible, while two others did not provide answers that could be included in the above categories. The answers' structure did not suffer significant changes during the third round of Delphi.

When it comes to the influence of organic agriculture on farmers' quality of life, there was an almost perfect agreement between experts - supporting a positive change at this level (Figure 3).



Source: own representation based on Delphi exercise

Figure 3. Experts' vision regarding the impact of adoption of organic agriculture on farmers' quality of life

The main arguments of experts in favour of such a scenario refer to the improvement of farmers' quality of life through an ascending dynamic of income, following the adoption of organic agriculture:

- “Adopting the organic agricultural system has to be strongly connected to production' valorisation. If there is a marketplace, this system can be a profitable one, bringing substantial income to participants.” - participant in round II of Delphi.
- “The quality of life of farmers could change, in a positive way, the production' value being higher.” - participant in round II of Delphi.
- “There would be a positive change in the quality of life of farmers, these having access to more information, more financial resources and a higher living standard” - participant in round II of Delphi.

This structure remained unchanged in the third round of Delphi, where, with only one exception, all experts agreed that the adoption of organic agriculture would have a positive impact on the quality of life of farmers from the study area. The only participant that considered this scenario to be unrealistic argued that there is a very small difference as regards the price between organic



and conventional agricultural products, that could not support an increase of farmers' income.

The following questions from the second and third round of Delhi aimed to capture experts' opinions regarding the impact of

adopting organic agriculture on several aspects, like the need for skills in the labour force, effects on wages, advisory service, skills of actors in the food chain, changes in the size of the rural population but also changes in the relationship between farmers (Table 5).

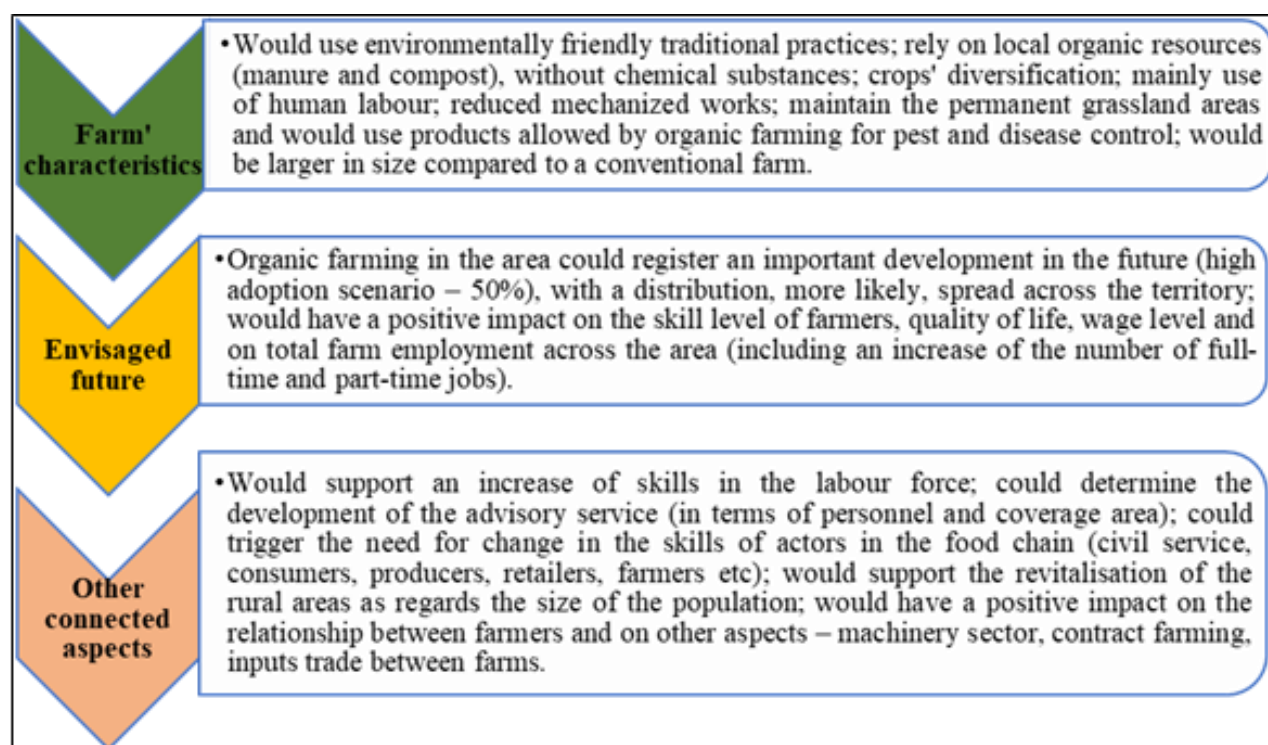
Table 5. Experts' opinions regarding the impact of adopting organic agriculture on skills, advisory service, wages, rural population and relationship between farmers

Aspects	Experts' opinion
<b>Need for skills in the labour force?</b>	9 out of ten experts considered that it would require an increase of skills in the labour force - by training and education in the field of organic agriculture.
<b>Effect on farm wages in the area?</b>	According to the majority of experts (8 out of ten), this would lead to an increase of the farm wages in the area, based on a higher profitability level of organic agriculture (having in view the price premium of these products).
<b>Advisory service - number of personnel?</b>	There is a strong agreement between experts (9 out of ten) supporting the increase of personnel working in advisory service, along with the increase of the number of farms adopting organic agriculture - in order to cover the entire territory and to ensure quick support services for farmers.
<b>What actors in the food chain need to change their skills?</b>	Experts' opinions firstly targeted the civil service, followed by consumers, producers, retailers, all the actors in the food chain, farmers as well as food processor.
<b>Changes in the size of the rural population?</b>	Yes, there is a strong agreement (9 out of ten) regarding the increase of the rural population, based on the opportunities offered by the rural areas, of developing some economic activities as well as for the settlement of the young generation in this area.
<b>Relationship between farmers?</b>	Without doubt, based on experts' opinion, there would be a positive change in the relationship between farmers, the main arguments pointing to an increased cooperation, collaboration and communication, as well as along the food chain.

Source: own representation based on Delphi exercise

Beside these, also other questions were addressed to experts that participated in the Delphi exercise, targeting the impact of adoption of organic agriculture on aspects like trade in inputs between farms, contract farming, machinery sector (number of traders, purchase of machinery) etc. The results based on experts' opinions highlight a positive influence of the adoption of organic farming on the investigated aspects - an increased inputs trade between farms, a higher dynamic

of the machinery sector (in terms of number of traders, innovation and development of specific machinery for mountainous areas) but also an increase of contract farming and a stronger relationship between farms in the area. The overall results of the Delphi exercise carried out in the present study highlight a real development potential for organic agriculture in the near future that would positively support growth and improvement of many connected aspects (Figure 4).



Source: own representation based on Delphi exercise

Figure 4. Experts' vision regarding the organic agriculture in the North-East development region - present status and future development scenario

## CONCLUSIONS

The present study aimed to investigate the main characteristics of organic farms as compared to conventional ones, in a geographical area facing natural constraints and to evaluate the future development potential of this sector. The collective vision of the experts involved in the Delphi exercise, that have extensive knowledge in this field and are closely connected to this territory, allowed us to outline the main characteristics of an organic farm - relying on traditional agricultural practices that are, to a large extent, very similar to organic ones, on locally produced organic resources (especially fertilisers), mainly using manual labour and very limited mechanical works, without chemical substances. Based on these elements, already in use by the farms from the area, the experts' opinions support an important development scenario for organic farming in the future, with a high adoption rate and a spatial distribution, more likely spread across the territory, rather than clustered.

This scenario, in experts' view, would also have positive implications on a large array of connected aspects, from labour and skills related ones, quality of life for farmers, development of the advisory service, changes in the skills of actors in the food chain, a more dynamic relationship between farmers (cooperation, inputs trade, collaboration), supporting the development of the machinery sector (dedicated to organic agriculture and geographical characteristics) to last but not least, the revitalisation of rural areas through opportunities for young generation' settlement in this area (economic, social, environmental etc).

## ACKNOWLEDGEMENTS

This research work was carried out within the LIFT Project, "Low-Input Farming and Territories - Integrating knowledge for improving ecosystem-based farming" that received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement no. 770747, May 2018 - April 2022.

## REFERENCES

- Azarbad, H., 2022. *Conventional vs. Organic Agriculture-Which one Promotes Better Yields and Microbial Resilience in Rapidly Changing Climates?* Front. Microbiol., 13: 903500. DOI:10.3389/fmicb.2022.903500
- Burtan, L., Coronado, M., Sîrbu, C., Ciornei, L., Todirică, I.C., Străteanu, A.G., Popa, M., 2023. *Various Soil Quality Parameters and Humus Content Evolution in Conventional and Minimum Tillage Systems.* Romanian Agricultural Research, 40: 491-500. <https://doi.org/10.59665/rar4046>
- Fefer, J.P., De-Urioste Stone, S., Daigle, J., Silka, L., 2016. *Using the Delphi technique to identify key elements for effective and sustainable visitor use planning frameworks.* SAGE Open: 1-16. DOI:10.1177/2158244016643141
- Foley, J.A., DeFries, R., Asner, G.P., Barford, C., Bonan, G., Carpenter, S.R., Chapin, F.S., Coe, M.T., Daily, G.C., Gibbs, H.K., Helkowski, J.H., Holloway, T., Howard, E.A., Kucharik, C.J., Monfreda, C., Patz, J.A., Prentice, I.C., Ramankutty, N., Snyder, P.K., 2005. *Global consequence of land use.* Science, 309: 570-574. DOI:10.1126/science.1111772
- Gomiero, T., Pimentel, D., Paoletti, M.G., 2011a. *Is there a need for a more sustainable agriculture?* Critical Review in Plant Sciences, 30(1-2): 6-23. DOI:10.1080/07352689.2011.553515
- Gomiero, T., Pimentel, D., Paoletti, M.G., 2011b. *Environmental impact of different agricultural management practices.* Sciences, 30(1-2): 95-124. DOI:10.1080/07352689.2011.554355
- Horriilo, A., Escribano, M., Mesias, F.J., Elghannam, A., Gaspar, P., 2016. *Is there a future for organic production in high ecological value ecosystems?* Agricultural Systems, 143: 114-125. DOI:<http://dx.doi.org/10.1016/j.agry.2015.12.015>
- Lori, M., Symnaczik, S., Mader, P., De Deyn, G., Gatterger, A., 2017. *Organic farming enhances soil microbial abundance and activity - A meta-analysis and meta-regression.* PLoS ONE, 12(7): e0180442. DOI:<https://doi.org/10.1371/journal.pone.0180442>
- Mukherjeel, N., Hug, J., Sutherland, W.J., McNeil, J., Van Opstal, M., Dahdouh-Guebas, F., Koedam, N., 2015. *The Delphi technique in ecology and biological conservation: applications and guidelines.* Methods in Ecology and Evolution, 6: 1097-1109. DOI:10.1111/2041-210X.12387
- Petcu, E., Toncea, I., Mustătea, P., Petcu, V., 2011. *Effect of organic and conventional farming system on some physiological indicators of winter wheat.* Romanian Agricultural Research, 28: 131-137.
- Petcu, V., Dincă, L., Toncea, I., 2014. *The effect of crops and farming systems on soil quality.* Sci. Papers, Series A, Agronomy, LVII: 58-63. ISSN 2285-5785; ISSN CD-ROM 2285-5793; ISSN Online 2285-5807.
- Wittwer, R.A., Bender, S.F., Hartman, K., Hydbom, S., Lima Ruy, A.A., Loaiza, V., Nemecek, T., Oehl, F., Olsson, P.A., Petchey, O., Prechsl, U.E., Schlaeppli, K., Scholten, T., Seitz, S., Six, J., Van der Heijden, M.G.A., 2021. *Organic and conservation agriculture promote ecosystem functionality.* Science Advances, 7(34): eabg6995. <https://doi.org/10.1126/sciadv.abg6995>