



## FINAL REPORT

# Post-COVID Recovery of Small Family Businesses in V4 Countries

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# Content

- Summary ..... 4
- 1. Introduction..... 5
- 2. Methods and Data..... 7
  - 2.1. Research strategy ..... 7
  - 2.2. Data collection..... 8
- 3. Theoretical Background..... 11
  - 3.1. Small family farms in V4 countries in the perspective of multifunctional agriculture..... 11
  - 3.2. Impact COVID-19 pandemic on businesses in V4 countries and expectations in the post-COVID period..... 14
- 4. Results ..... 17
  - 4.1. Human resources..... 17
  - 4.2. Supplier-customer relationships ..... 18
  - 4.3. Prices of inputs and outputs of the production ..... 21
  - 4.4. Subsidies in agricultural sectors and financial support of business during the COVID-19 crisis ..... 21
  - 4.5. Nature of production and sales..... 22
  - 4.6. Strategies and business models of agricultural family businesses..... 23
  - 4.7. Discussion ..... 24
- 5. Conclusions..... 26
- References..... 29
- Appendix..... 35

## List of abbreviations

MA	multifunctional agriculture
V4 countries	Visegrad countries
WHO	World Health Organization
FAO	Food and Agriculture Organization of the United Nations
CEOs	Chief Executive Officers
EU	European Union
CZ	Czech Republic
SK	Slovakia
HU	Hungary
PL	Poland
CAP	Common Agricultural Policy
UAA	Utilized Agricultural Area
SMEs	Small and Medium Enterprises

## Summary

The COVID-19 pandemic has caused unexpected significant stresses on agricultural and food systems. Thus, this research project examined the effects of the COVID-19 crisis on small family farms in Central European countries. The inherent uncertainty of agricultural systems has increased, casting doubt on the resilience of agricultural and food systems around the world. In this project, we focused on small family businesses from the perspective of multifunctional agriculture, as this perspective includes also nonproductive activities of farms that have been largely affected by the COVID-19 pandemic. There is a growing body of research on the economic impacts of the pandemic on firms; however, the influence on the multifunctionality of agriculture is missing.

This research project aims to examine the effects of the COVID-19 crisis on family farms in four Visegrad countries—the Czech Republic, Slovakia, Poland, and Hungary—to provide evidence of how these businesses have responded and coped with the crisis.

We build our investigation on an exploratory qualitative research design based on 86 semistructured in-depth interviews with owners or responsible managers of small family farms from all mentioned countries and explored the effects of the COVID-19 crisis on different areas of their business such as from the perspective of human resources, supplier–customer relations, production, distribution channels or strategies, price of inputs and outputs, and business models.

The survey in countries that face similar difficulties and challenges stemming from their common history before the post-1989 economic transition allowed us to evaluate the findings comprehensively together considering heterogeneous effects across countries. Our findings indicate that small family farms in V4 countries have been resilient in the face of the COVID-19 pandemic; although the negative impacts were mentioned (such as a decrease in sales due to the closure of accommodation and restaurant services, delays in the supply of inputs, and minor problems with the availability of workers), they were perceived to be moderate. The results show that the pandemic created not only difficult challenges but also opportunities for small firms in the agricultural sector.

Based on our findings, three main recommendations regarding the adaptability and resilience of family farms in Visegrad countries are formulated: (1) the importance of a diversification strategy, (2) selling through the short supply chains, and (3) digitization of agriculture.

## 1. Introduction

This document is the final report from the implementation of the “Post-covid Recovery of Small Family Businesses in V4 Countries” project, which is financed by Visegrad Funds (Strategic Grants).

The project mainly aims to identify the possibilities of post-COVID recovery and adaptation processes of small family businesses in the multifunctional agriculture (MA) sector in Visegrad countries. Partial goals are as follows:

- 1) deeper understanding and mapping of factors that affected the small family businesses during the COVID crisis;
- 2) an overview of the perception of government measures in Visegrad countries to mitigate the consequences of the COVID crisis;
- 3) dissemination of results and recommendations for recovery and adaptation processes of the target group and their presentation at two organized conferences.

The outbreak of the coronavirus disease in late 2019 was declared a global pandemic by the World Health Organization (WHO) on March 11, 2020 (Cucinotta and Vanelli, 2020). To prevent the spread of the virus and minimize the effects of this pandemic, governments worldwide have begun implementing various unprecedented measures, such as cancellation of events, school closings, social distancing, travel restrictions, border closures, investments in healthcare facilities, closure of nonessential retail, and contact tracing (Hale et al., 2021). International efforts to control the virus inevitably not only affected the populations’ daily life but also caused economic shocks and affected the functioning of economies worldwide (Nicola et al., 2020). Although some sectors and countries may have been more affected than others, the effects of the COVID-19 pandemic have touched all economic sectors and countries.

The project responds to the consequences of the economic crisis caused by the COVID-19 crisis since the COVID-19 pandemic has caused unexpected significant stresses on agricultural and food systems (Deconinck et al., 2021). The uncertainty that is the nature of the agricultural systems, has increased even more (Haqiqi and Horeh, 2021), resulting in doubts about the resilience of agricultural and food systems worldwide (Popescu and Popescu, 2022). Agriculture is often deemed a “national security” priority by countries due to its specificity and importance in terms of ensuring the nutrition of the population (Beckman and Countryman, 2021). Hence, identifying and examining the impacts of the COVID-19 crisis can have significant implications not only for potentially vulnerable agricultural communities but also for governments and policymakers.

The project focuses on small family businesses from the perspective of MA within V4 countries as this sector includes generally the nonproductive functions and nonproductive activities of farms that have been largely affected by COVID-19. Family businesses are generally characterized as vulnerable due to

their autonomous, family-oriented standing and their constrained financial capital and resources (Bartoloni et al., 2021; Srhoj et al., 2019; Sirmon and Hitt, 2003). Additionally, they show certain particularities regarding their behaviors and measures during crises (Kraus et al., 2020). Globally, family farming is estimated to account for 80% of the world's food production, occupying 75% of agricultural land (FAO, 2014), which proves its central role in food self-sufficiency and security, protection of the environment, and sustainable development (FAO, 2019; Graeub et al., 2016; Kostov et al., 2019).

This research project aims to examine the effects of the COVID-19 crisis on family farms in four Visegrad countries, namely, the Czech Republic, Slovakia, Poland, and Hungary (hereinafter referred to as V4 countries) to provide evidence of how these businesses have responded and coped with the crisis. To do so, we employed an exploratory qualitative research design based on semistructured in-depth interviews with owners or responsible managers of small family farms and explored the effects of the COVID-19 crisis on different areas of their business such as from the perspective of human resources, supplier–customer relations, production, distribution channels, and strategies. The survey in countries that face similar difficulties and challenges stemming from their common history before the post-1989 economic transition allowed us to assess the findings comprehensively, considering heterogeneous effects across countries.

This report summarizes the main conclusions and outputs of the research project and should help with the dissemination of results among all stakeholders of the project in the long-term period.

## 2. Methods and Data

### 2.1. Research strategy

The methodical process of solving the project resulted from the stated goals. First, the situation in the agricultural sector in the individual V4 countries was mapped based on a literature review, so that the empirical investigation could be properly evaluated in the context of the overall situation in the countries concerned. The result of this phase of the project is Chapter 3, which provides a description of small family farms in Visegrad countries from the perspective of MA and provides an overview of the current situation in the post-COVID period.

Second, we empirically investigate how the COVID-19 pandemic and related crises impacted farmers and how they managed post-COVID recovery. The results of this empirical part of our research are presented in Chapter 4. We applied exploratory<sup>1</sup> qualitative research<sup>2</sup> using the technique of in-depth personal semistructured interviewing (with CEOs or responsible managers of small family businesses), which allowed for maximum variation, following the principles of appropriateness and adequacy (Bryman, 2016; Graebner et al., 2012). The data analysis started directly after each interview until saturation is reached, that is, further data collection did not give new insights, as is common practice in qualitative research (Yin, 2013). The research was structured to enable the identification of the specific needs of family businesses in the V4 countries based on a comparison. The structure of the personal

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<sup>1</sup> Exploratory research is defined as a research used to investigate a problem, which is not clearly defined. It is conducted to have a better understanding of the existing problem. For such a research, a researcher starts with a general idea and uses this research as a medium to identify issues that can be the focus for future research. An important aspect here is that the researcher should be willing to change his/her direction subject to the revelation of new data or insight. Such a research is usually conducted when the problem is at a preliminary stage. It is often referred to as grounded theory approach or interpretive research as it used to answer questions such as what, why, and how. Exploratory research is the process of investigating a problem that has not been studied or thoroughly investigated in the past. Researchers use exploratory research when trying to gain familiarity with an existing phenomenon and acquire new insight into it to form a more precise problem. It begins based on a general idea and the outcomes of the research are used to find out related issues with the topic of the research.

<sup>2</sup> In the social sciences, qualitative research refers to research that focuses on how individuals and groups view, understand, and interpret the world. According to other criteria, qualitative research may not use statistical methods and techniques. In this sense, contrary to quantitative research, in the practice of psychological and sociological research, both approaches are most often complementary to each other. Qualitative research seeks to interpret the views of subjects on the researched subject by the researcher taking over their perspective. A detailed description of everyday situations is used. It is about understanding measures and meanings in their social context. Qualitative research does not reduce the number of variables or the relationships between them, their reduction is decided by the research subjects themselves. Open and unstructured research plans are preferred; the analysis is based on a large amount of information on a small number of individuals. The interest in real units, intermeasures between actors and individual destinies prevails. The task of qualitative research is to create a holistic image of the researched subject, to capture how the participants of the process interpret the situation and to capture the interpretations of these interpretations.



interviews was designed to determine a series of factors that most probably affected the original business model of small family businesses within V4 countries.

The interviews were conducted in person, online (MS Teams, Zoom, Skype, or other similar online platforms), or via telephone and were recorded and subsequently transcribed into written form (Corbin and Strauss, 2014). In-depth personal semistructured interviewing was structured respecting the main identified factors that most probably affected small family businesses within V4 countries during the COVID-19 crisis, such as human resources, supplier–customer relationships, prices of inputs and outputs of the production, subsidies in agricultural sectors and financial support of business during the COVID-19 crisis, nature of production and sales, and strategies and business models of agricultural family businesses (as similarly investigated by Kraus et al., 2020, on a sample of family firms across different industries in five European countries). The personal interviewing was also intended to explore the basic identification of respondents, focusing on the structure of their production, percentage structure of income from business and production, the number of members of their farm family involved in running the company, and the organization of their family business. Each group of factors was focused on the questions that deal with the situation before and during the COVID-19 crisis and also the future direction of the business.

After interviewing, the researchers in the project independently read the transcripts and openly coded the data<sup>3</sup> (Miles et al. 2014; Williams and Moser, 2019; Hennink et al., 2020) to determine how small family businesses were affected, what specific measures family businesses take, and which additional changes within the businesses emerged due to the COVID-19 crisis. We iteratively analyzed the data and identified common themes that were subsequently verified using feedback loops. To ensure the reliability and validity of the findings (Sousa, 2014), the researcher from particular V4 countries read and coded the data independently and compared, discussed, and revised the codes iteratively before consolidating them.

## 2.2. Data collection

Interviews providing data collection were performed between March and May 2022, in four V4 countries: Czech Republic (March 21 to May 30), Slovakia (March 22 to May 10), Hungary (March 25 to May 30), and Poland (March 22 to April 30). Preliminary (pilot) qualitative research took place in February when the structure and clarity of the questionnaire were tested on two selected respondents. The questionnaire proved to be clear and comprehensible to the respondents; therefore, it was not necessary to change the structure of the questionnaire for qualitative research. The target group of

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<sup>3</sup> Open coding: After rewriting the interviews, the interviews are coded using the open coding technique, followed by a process of grouping terms (based on individual answers) that relate to the same phenomenon, that is, the categorization process. The resulting categories are marked with more abstract terms than individual codes and have become the framework of the so-called analytical story.

respondents involved small family businesses operating in the multifunctional farming sector within V4 countries, that is, farms with up to 50 employees and an annual turnover of up to EUR 10 million (European Commission, 2022). The motivation for the selection of this target group is the prerequisite that small family businesses could be most affected by the COVID-19 crisis. Respondents were selected using the purposive sampling technique<sup>4</sup> (Tongco, 2007; Hennink et al., 2020). All respondents participated in the research under the promise of their anonymization; therefore, each participant is marked as P<sub>x</sub>1, P<sub>x</sub>2, P<sub>x</sub>3,..., P<sub>x</sub>N, where <sub>x</sub> denotes the country (i.e., <sub>CZ</sub> for the Czech Republic, <sub>SK</sub> for Slovakia, <sub>HU</sub> for Hungary, and <sub>PL</sub> for Poland) and N denotes the number of participants in particular countries (i.e., 23 in the case of the Czech Republic, 16 in Slovakia, 22 in Hungary, and 25 in Poland). Details regarding the characteristics of respondents are presented in Table 1 in the Appendix. The sampling process took place in particular V4 countries.

The Czech respondents come from all over the Czech Republic; however, most of them come from the South Moravian Region as most of the small family farmers in the Czech Republic are placed in this region. Although initial efforts were made to distinguish respondents into conventional and organic farmers, this proved to be problematic, as the majority of enterprises practice conventional farming while a portion of their production is organic. Besides, many farms show signs of organic farming but are not certified organic farmers. Therefore, we have abandoned the division of respondents into conventional and organic. The respondents have been selected using the purposive sampling technique as identified at the beginning of the project. Some respondents (P<sub>CZ</sub>1, P<sub>CZ</sub>2, P<sub>CZ</sub>3, P<sub>CZ</sub>4, and P<sub>CZ</sub>5) were selected from the Register of Family Businesses maintained by the Association of Small and Medium-Sized Enterprises and Self-Employed Persons of the Czech Republic (Business Info, 2022). Other respondents were selected from the database of contacts available to the Czech team based on previous scientific cooperation. Respondents come from different areas of agriculture (e.g., viticulture, crop or animal production, production, and sale of agricultural fertilizers); however, all respondents meet the presumption of multifunctionality (e.g., offering accommodation, restaurant services, additional sales, advisory services for farmers, and agritourism).

The Slovak respondents do their business in the Nitra region. They were selected from three sources—organic farms were selected from the database of EKOTREND (Union of organic agriculture in Slovakia) and the database of NATURALIS (the company authorized for inspection and certification in organic agricultural production). Conventional agricultural enterprises were selected from the INFOMA business trading database and also via personal relations of the Slovak research team. Investigated family farms conduct different types of nonagricultural production—agricultural processing; trade of

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<sup>4</sup> The purposive sampling technique is a type of nonprobability sampling that is most effective when one must study a certain cultural domain with knowledgeable experts within. Purposive sampling may also be used with both qualitative and quantitative research techniques. The inherent bias of the method contributes to its efficiency, and the method stays robust even when tested against random probability sampling. Choosing the purposive sample is fundamental to the quality of data gathered; thus, reliability and competence of the informant must be ensured (Tongco, 2007).

other products; selling of processed farm products; selling of machinery and equipment, consultancy, agrotechnical services; and providing of agritourism services. All investigated farms carried out crop production (e.g., cereals, poppy, pumpkins, forage, sunflower, oilseed rape, grasslands, aronia, currants, fruit, and herbs), livestock production was performed by 11 farms (e.g., dairy cows, sheep, horses, pigs, and poultry).

The respondents in the Hungarian sample come from all over Hungary except Northern Hungary. In most cases, the Hungarian team reached the target group using the help of previous partners involved in scientific research cooperation. Respondents were from three main groups—conventional agriculture (12 respondents), organic farming (eight respondents), and mixed production (two respondents). In the case of organic farms, the interviewees were selected from the participants of the First Hungarian Winter Organic Farmer Meeting and the agroecology training at the Hungarian University of Agricultural and Life Sciences. Respondents operate in different areas of agriculture (e.g., viticulture, crop or animal production, fruit, and vegetable sector), and all respondents meet the presumption of multifunctionality.

The Polish respondents come from the Malopolska region. The contacts to farmers were obtained from more sources, that is, from the Main Inspectorate of Agricultural and Food Quality Inspection, from the Polish advertising service (olx.pl), and from the District Veterinary Inspectorate (in Kraków, Nowy Sącz, Oświęcim, and Wieliczka). Each of the interviewed farms also conducts nonagricultural activities. The most common activity of the surveyed farms was processing, which is more associated with organic farms (75% of indicated answers) than with conventional agriculture (46% of indicated answers). Organic farms are more strongly associated with educational services (25% of indicated answers) than traditional farms (one-sixth of indicated answers). Educational services were provided for primary and secondary school students, which in one case, it concerned training for vineyard owners. All the surveyed farms carried out crop production. Livestock production was conducted by more than half of conventional farms (53.8%); in the case of organic farms, this type of production was carried out by every third farm (33.3%).

### **3. Theoretical Background**

#### **3.1. Small family farms in V4 countries in the perspective of MA**

Crises and changes in the external environment impose immense pressure on the resilience of countries and their regions—both urban and rural ones. The ability of rural areas to absorb risks is strongly dependent on the structure of agricultural business ecosystems and their diversification. Riccardi et al. (2021) claimed that small farms constitute most of the world's farms and are a central focus of sustainable agricultural development because they secure a diversity of agricultural products, sources, and the environment. They claimed that smaller farms have smaller fields with more edges that provide habitat and independently managed smaller farms may create a more heterogeneous landscape. Conversely, small farms in the developed world are accused of being less productive than their bigger counterparts. However, the empirical evidence of the size—productivity relationship in the conditions of the developed world is ambiguous. Although Alvarez and Arias (2004) and Arcas et al. (2011) found a positive relationship between the efficiency and size of Spanish farms, Ladvenicová and Miklovičová (2015), Redlichová et al. (2021), and Svobodová et al. (2022) confirmed the inverse relationship between farm size and productivity on the data from Slovak and Czech farms. Therefore, the principle of MA is being launched and supported in the European Union throughout all farm size levels. Common agricultural policy (CAP) of the EU introduced rural development and described the integrative role of MA in protecting the natural environment and the cultural landscape while providing socioeconomic development (Granvik et al., 2012).

Multifunctional agriculture as a modern view of agriculture (e.g., Renting et al., 2009; Miškolci, 2008) emphasizes the importance not only of its production side (focused mainly on the production of food and nonfood goods) but also of other components (socioeconomic and environmental). Socioeconomic factors include, for example, the employment of people in the countryside, social and financial inclusion, development of quality of life, traditions, and culture of the population (Renting et al., 2009; Chmelíková and Redlichová, 2020). From the viewpoint of environmental factors, this is the care of the soil and landscape (generally all components of the environment) and the associated approaches to the management of these resources and their protection. Multifunctional agriculture offers several services for the community and society, such as better care of the landscape, protection of nature and wildlife (protection of water, air, and soil), and services focused on agritourism or recreation, thus giving new opportunities to the labor market in rural areas. MA plays a role in improving the autonomy of agricultural holdings and increasing the availability of resources for future generations (Miškolci, 2008).

The beneficial effects of the principle of MA are common for all V4 countries and their rural areas. All the advantages of MA are not always standard but very much depend on the specific conditions and specific environments and the socioeconomic structure of the country.

In *Poland*, small family farms are believed to be key drivers in taking on responsibility for the multifunctional development of rural areas (Kowalski et al., 2010). Small farms with a maximum area of 5 ha are dominant in Polish agriculture; they represent 52.1% of Polish farms (Statistics Poland, 2022). The political and economic transformations that occurred in Poland from the beginning of the 1990s meant that some of the people who lost their jobs returned to the countryside and looked for a way to find a source of income by running small farms. The resulting excessive growth in agricultural employment, coupled with an insufficient number of job opportunities in other sectors of the national economy, constituted a formidable and enduring barrier to agrarian transformations. In this situation, the function of small farms, applying significant numbers of people, was a way of “combating the negative effects of unemployment” and minimizing the social costs of political change. Despite the extremely low efficiency of many small farms, the government did not take sufficient action to improve the situation (Czekaj et al., 2020). Nearly 40% of the smallest farms allocate all their agricultural production to meeting their own subsistence needs, whereas in entities with a surface area of 2.00–2.99 ha, slightly over 30% of farms do so, and in entities of 3.00–4.99 ha, the figure is over 20% of farms. Presently, farm income is increasingly augmented by revenue from services provided as part of multifunctional rural development, such as services that are related to the rental or independent use of agricultural equipment, agrotourism, and teaching on educational farms. On average, the share of people declaring that they work mainly off the small farm is nearly 40%, where this percentage decreases along with an increase in the surface area of the small farm (Czekaj et al., 2020). Small family businesses in Poland that specialize in the provision of tourist services (agrotourism) and educational services or services provided for the local community based on the fleet of machinery owned by the business are registered above all in voivodeships in the south of Poland and the suburban areas of large towns and cities.

In *Hungary*, family farms are believed to be key performers of the MA (Gábor et al., 2017). Nonetheless, there is no single definition for family farms in Hungary because they differ greatly as well in size as in their management. Accordingly, family farmers can be individual farmers, part-time farmers, individual entrepreneurs, limited liability companies, and farmers’ cooperatives. The average farm size in Hungary was 8.6 ha in 2014 (for companies 48.6 ha and for individuals 3.4 ha), which increased in the last years and reached 22 ha in 2020. The proportion of small farms with a standard production value of less than EUR 4,000 decreased significantly, from 70% to 53%, whereas that of medium-sized farms (mainly those in the EUR 15,000–99,999 size category) increased from 9% to 17%. The concentration of

production is also indicated by the fact that 53% of the farms fall into the smallest size category; however, 45% of the standard production value appears in the farms of the largest size category, representing a share of approximately 1% (Hungarian Central Statistical Office, 2022).

Most individual farms serve, similarly to those in Poland, as a supplementary income source. The principle of MA is one of the main pillars of rural development policy in Hungary (European Commission, 2021). Hungary's policy follows CAP's principles that introduced rural development and described the integrative role of MA in protecting the natural environment and the cultural landscape while providing socioeconomic development (Granvik et al., 2012). There are currently no detailed statistics in Hungary on which farms are engaged in multifunctional farming and what percentage of their activity is related to the production of nonbasic food and raw materials. Between 2000 and 2007, the ratio of Hungarian farms carrying out nonagricultural activities was approximately 11.2% in 2003 and then decreased to 5.08% by 2007 (for comparison, in the EU-27, the ratio was 6.2% in 2003 and 9.94% in 2007). This can also be related to the fact that based on Eurostat data in 2010, the number of farms in Hungary decreased by 35% between 2000 and 2007 (Fehér et al., 2010) and a further decrease was observed until 2020 (Hungarian Central Statistical Office, 2020).

Although agriculture in *Slovakia* is not seen as a highly productive and profitable sector, its importance for the country and the economy is indisputable (Némethová and Rybanský, 2021). Although in the previous period, the priority was to ensure economic growth and the focus was on continual production increase without considering the possibility of production capabilities of the country or a particular region, current economic activities are limited by the requirements of sustainable development (Valach, 2018). Slovak agricultural sector remains under the influence of unbalanced social and economic conditions during reforming processes (Némethová and Rybanský, 2021). From the perspective of the harmonization of these influences, the model of MA is gaining prominence in agribusiness, in accordance with the CAP, in terms of the creation of better conditions by preserving the quality of the environment in rural areas (Hudák and Rovný, 2008; Lacko-Bartošová and Buday, 2013). Slovak agriculture is characterized by a dual farm structure, with a high proportion (80%) of small farms (usually doing business as physical persons), and a small number of large farms (20%), which usually employ the legal forms of corporates or cooperatives (legal entities). In 2020, 19,632 agricultural companies were operating in the agricultural sector in Slovakia, of which 3,612 were legal persons and 16,020 physical persons. They managed 1,862,653 ha of the utilized agricultural land—legal persons managed 1,518,428 ha and natural persons 344,225 ha (Statistical Office of the Slovak Republic, 2022).

As for the principles of MA in Slovakia, diversification in agriculture, that is, additional income-generating activities related to agricultural activity, first appeared in the 80s of the 20th century, not

only as a certain method of distributing business risk but also as an opportunity to gain certain independence from traditional activities performed on the farm (Tóthová and Fiľa, 2011; Buchta. 2007).

Due to the shared history, several features of the development of Slovak and Czech agriculture are similar. Since 1989, not only the management structure and performance but also the social functions of farms and their relation to the countryside have changed significantly in the *Czech Republic*. More than 75% of workers found work in other fields. Compared to the other V4 countries, the Czech Republic has the highest average farm size (121 ha) and a high concentration of land use. Seven percent of the largest “profit-oriented” farms utilize almost 63% of the managed agricultural area (UAA) and, when converted to livestock units, 77% of the total livestock. Small farms using the remaining third of the UAA form the largest group (61% of all agricultural holdings). Farms of up to 100 ha cultivate only 12% of agricultural land (Hlavsa et al., 2020), and the largest group of small, rather income-oriented farms manage only 6% of the agricultural land of the Czech Republic with a share of 4% of the total number of livestock. According to Doucha and Foltýn (2006), only approximately 12%–13% of the land is in the ownership of the Czech farms, and the rest is leased. Additionally, foreign capital (agricultural and nonagricultural) has recently penetrated the sector. The predominant profit orientation of farms, high transaction costs associated with changing the use or ownership of land, the threat of diverting direct payments from agriculture and the countryside through land ownership and leasing, and continued investment support for farm modernization leading to further reductions in the workforce have significant impacts on the multifunctionality of Czech agriculture (Doucha and Foltýn, 2006). Since the 1990s, agricultural policy has been targeted to support multifunctionality (Bański, 2019). Although small family farms occupy only approximately 13% of the utilized agricultural area, they play an essential role in promoting multifunctionality (Hlavsa et al., 2020). Since they are income-oriented, they show a strong relationship to the care of land and landscape and resistance to its sale to foreign capital and create a higher potential for generational exchange (continuity).

### **3.2. Impact COVID-19 pandemic on businesses in V4 countries and expectations in the post-COVID period**

Firms nowadays are exposed to the systematic pressure of a rapidly changing external environment, to which they cannot promptly respond, as this is an exceptional situation without previous similar experience. To learn lessons from patterns of behavior in crises similar to the COVID-19 pandemic, these patterns should be thoroughly understood—to empirically analyze them and describe and adapt to changing environments. Possibly based on them, recommendations for economic policymakers to enable the companies to survive in this difficult time can be suggested. However, little is known about

the impact of the COVID-19 crisis on business in V4 countries, the reaction of these firms, and the efficiency of policy tools. Thus far, only several studies, which evaluated the impact of COVID-19 on the V4 countries' economy and the reaction of firms toward this crisis, have been carried out.

The empirical study on the impact of COVID-19 on the Czech economy carried out by Andoh (2020) brought early results. Using data from the spring of 2020, he demonstrated that despite the fact that the Czech Republic had been affected by the pandemic, it belonged to the group of nations with the greatest capacity to deal with the crisis. After the initial government measures (tax delays, loans for affected SMEs, and moratorium on loans), only tourism-dependent businesses and automotive vertical manufacturers remained in difficulty. They concluded by claiming that governmental and central bank tools are limited and it is important for firms to behave proactively to adapt to new circumstances and mitigate potential risks. Andoh (2020) highlighted the fact that the most affected sectors were those that faced supply failures. This was later confirmed by the findings of Veselovská (2020), who focused her research interest on the supply chain disruptions due to the COVID-19 crisis. Her study examined how different economic sectors in Central Europe were changed due to supply failures. Cross-country investigations showed that firms from Poland were more active in implementing new measures to solve supply chain disruptions compared to firms from Slovak or the Czech Republic. She concluded with the statement that supply chains turned out to be quite resilient, as the firms managed to survive; however, this study missed the detailed impact on the comprehensive financial situation of the survivors and their development from a longer perspective.

The V4 countries region became a focus of the study carried out by Cepel et al. (2020), who examined the impact of the COVID-19 crisis on the perception of SMEs' business risk. Their starting point was a division of business risk factors into the market, financial and personnel areas, and an examination of differences in the perception of these factors before and after the crisis. Their analysis revealed statistically significant differences between pre- and post-crisis perception. Although the perception of financial risk increased during the crisis, the personnel risk factors lost their importance. The next study from the same region conducted by Böhm (2021) dealt with the influence of the COVID-19 crisis on the Czech–Polish cooperation. The objective of this study was to evaluate the impact of the COVID-19 crisis on cross-border cooperation, which was hit by the temporary closure of borders. Böhm (2021) concluded by claiming that launched measures harmed the cross-border cooperation on the Czech–Polish borderland.

Two specialized studies on the agricultural sector originated from the data from the Czech Republic. The first one by Fialova and Vasenska (2020) dealt with the implications of the COVID-19 crisis for the sharing economy in tourism. Their results confirmed the hypothesis that occupancy of offered



properties was lower than expected by landlords before the COVID-19 crisis. The second study by BrzÁková et al. (2021) focused on the connection between the COVID-19 crisis and animal production. BrzÁková et al. (2021) did not find any strong influence on animal breeding, raw milk production, or cattle slaughtering.

Aharon and Siev (2021) explored the impact of government intervention to contain the spread of COVID-9 in emerging capital market countries (including Hungary) on the performance of their leading stock indices and found that government restrictions are associated with negative market returns. The authors found a positive market response to direct income support and a negative response to debt or contract relief. Emerging capital markets respond positively to testing policies or contact tracing that can help fight COVID-19. According to Czech et al. (2020), the positive and significant correlation between the number of reported COVID-19 cases and the exchange rates has been confirmed, implying that the ongoing pandemic has resulted in the depreciation of the V4 currencies.

From an overall perspective, the automotive industry, airlines, accommodation, and catering services faced the worst consequences of the COVID-19 pandemic (Nicola et al., 2020; Donthu and Gustafsson, 2020), in which case, accommodation and catering services create a significant noncommodity output of the majority of small family farms. Contrarily, the lowest losses are calculated by companies in the energy industry, telecommunications, e-commerce, and IT. The consequences were significantly worse than estimated at the beginning for companies that waited for a reaction due to increased uncertainty and risk. The need to adapt to coronavirus measures has accelerated digitalization or changed the corporate culture of companies to suit teleworking. Many companies sped up the digitization process and had adjusted their business processes to match work from home. Many changes in companies have become a necessity for survival in the past years. Employee satisfaction and adequate digital tools for teleworking posed the biggest challenge for firms in keeping the company running during a pandemic.

## 4. Results

Although respondents came from different regions and countries, have different legal forms of business, and came from different areas of agriculture entrepreneurship, we can find many similarities in respondents' answers regarding the COVID-19 crisis. Our interviews showed that most farms coped well with the COVID-19 crisis, they mostly adapted well to the COVID-19 pandemic-related restrictions, and businesses in agriculture were relatively little affected, of course except for farms that operate services such as for restaurants or accommodation or that supply their products to this field of business. It can also be observed that organic farms experience greater changes as a result of COVID-19 than conventional farms, whether it concerns the structure of production or the development of future strategies.

The analysis of the data obtained from our interviews (86 in total) led to several findings, which we present divided into six topics:

1. Human resources
2. Supplier–customer relationships
3. Prices of inputs and outputs of the production
4. Subsidies in agricultural sectors and financial support of businesses during the COVID crisis
5. Nature of production and sales
6. Strategies and business models of agricultural family businesses

### 4.1. Human resources

Almost all of the respondents stated that the COVID-19 crisis did not affect the workforce (i.e., there was no staff downsize or fluctuation), as the small family farms follow the typical traditional structure for family businesses, that is, family labor dominates; they rely on family members and employ only a few seasonal workers, if necessary. Therefore, an often repeated answer was *"The structure of our staff stayed the same during and after the COVID crisis, therefore no changes were needed in human resources"* (P<sub>CZ6</sub>). It is clear that many workers were absent from work due to the illness of COVID or quarantine, nonetheless, these cases mostly fell outside the peak season of work on the farm: *"There was no COVID impact on the workforce. In the first year of COVID pandemic, a lot of people got sick, but that didn't affect the harvest because they didn't get sick at harvest time"* (P<sub>PL20</sub>). However, some sector-specific differences emerged: *"Unfortunately, we have had to reduce our staff due to COVID as our income from processors has dropped"* (P<sub>HU19</sub>). Most interviewees employing seasonal workers noted

that in 2020 and 2021, there were difficulties to find a good workforce and that there were changes in staffing of part-time workers: *"We notice less interest in the work of part-time workers, but they do not perceive COVID as the cause"* (P<sub>CZ</sub>11), *"In 2021 there were fewer seasonal foreign workers than before the crisis"* (P<sub>CZ</sub>14), or *"We experienced the absence of our foreign seasonal workers from Transylvanian due to their COVID-caused illnesses, but it was not drastic"* (P<sub>HU</sub>2).

However, the COVID-19 pandemic and related measures imposed by governments had often impact on work of the farmer's family in the sense that either the active family members could not work at 100% on the farm due to the home education of their children since they had to be taught at home, for example, *"My wife, which had been preparing the cheeses for the market, has given up this activity due to the home teaching activity"* (P<sub>HU</sub>1). Conversely, when external employees were in quarantine, family members had to be more involved in production to save the situation in business, for example, *"Working hours of our employees often increased during replacement due to COVID-caused illness, resulting in an increase in extra work per person"* (P<sub>HU</sub>15).

Only several farmers mentioned changes in human resources directly influenced by the COVID pandemic. One larger agricultural producer (P<sub>CZ</sub>23) with manufacturing and administrative staff noticed that *"during the crisis, we experienced greater morbidity—we lost people in the work process last autumn. The biggest problem was on the dairy farm, where we only ensured the operation with the understanding and commitment of the staff and livestock specialist. The office workers used home office, now they are working in the company again. We had to buy some notebooks. Somewhere there was a problem with the signal to succeed in transferring data from the server"* (P<sub>CZ</sub>23). One farm linked to a marketing firm experienced the loss of workers when home office was introduced during the COVID pandemic—the employees liked this way of working so much that they quit the company and set up their own business, as described by the farmer in question: *"Six people worked in the company, but for pandemic reasons they switched to their own business because they preferred to work from home (online)"* (P<sub>PL</sub>22). However, most other farmers confirmed that as for agriculture, home-based work has not been mandated as it is not possible.

Nevertheless, it should be mentioned that a few farmers assessed the impact of the COVID-19 pandemic in this area as positive—if farmers also have other jobs, then the mandated home office allowed them to devote more time to farm work (P<sub>HU</sub>11 and P<sub>HU</sub>14).

## 4.2. Supplier–customer relationships

The majority of respondents confirmed that there was no need to change the original structure of their suppliers. Most of them have long-term business relationships with their suppliers, and so, it was not

necessary to change anything in this matter during and after the COVID crisis: *"No, the negotiations were still the same, i.e., personal or telephone meetings. We had no changes in supplier–customer relationship during and after the COVID crisis"* (P<sub>CZ3</sub>) and *"Nothing had changed with suppliers during COVID"* (P<sub>PL4</sub>). Additionally, this period brought challenges to the establishment of new e-shops and promotion on social networks, even for those farmers who had not yet used these possibilities, as confirmed by P<sub>CZ14</sub>, P<sub>CZ15</sub>, and others: *"The structure of suppliers has not changed. For customers, we established a new e-shop with the possibility of sending goods and increased online promotion on social networks (Facebook, Instagram). We gained a new customer segment—direct purchase"* (P<sub>CZ14</sub>) and *"Increase in the number of final consumers due to more intensive use of social networks, online wine tasting and online sales"* (P<sub>CZ15</sub>). Particularly, farmers who sell their own products and processed agricultural products focused on online sales with delivery or pick-up directly from the farm. Respondents also confirmed changes in customers' structure: *"Due to higher commodity prices, there was a change in customers' structure, some customers were not able to take such quantities of pork as before the COVID crisis, so production was offered to other, new customers"* (P<sub>SK2</sub>). As the population moved to cottages and weekend houses during the lockdowns, home delivery became a significant outlet for farmers, as mentioned by a Slovak farmer engaged in animal production: *"Due to the fact that the residents spent a long period of lockdown in the cottages, compared to the period before the pandemic, they ordered fresh products from my farm in much larger volumes, such as cheeses, butter, homemade yogurts and used the option of home delivery"* (P<sub>SK11</sub>).

Farmers trading abroad have seen an impact on the delay of supplies from abroad and the price increase, for instance, P<sub>HU11</sub> stated that *"we observed an effect on deliveries from abroad—either they disappeared completely because the factory was closed or the delivery time multiplied"* (P<sub>HU11</sub>). Moreover, a producer of pigs and cold cuts confirmed this situation: *"During the COVID pandemic there were delays in the supply of feed (rapeseed meal, vitamin concentrate) of up to 2 weeks. The situation is back to normal after pandemic"* (P<sub>PL12</sub>).

Naturally, the lockdowns in all countries were reflected in the decrease in face-to-face meetings; therefore, there were changes in communication between business partners. As one farmer selling honey products for food and cosmetic use described: *"We communicated with suppliers by phone, e-mail, sometimes in person, during COVID pandemic we have limited personal communication. We have reduced personal sales (stall sales and sales through distributors) and strengthened online sales"* (P<sub>CZ4</sub>).

In the case of the relationship with customers, temporary changes were noted. Especially in the case of additional services (gastronomy, accommodation, and agrotourism), there was a dramatic reduction or elimination of customers. Currently, after the COVID crisis, the number of customers has returned to the level before the COVID crisis, except for the gastronomy service business. For example, the farmer

that is also active in the brewing industry said: *"We were forced to increase the prices of products and services by 15%–20%, the number of guests returned to us from 80%–90% as before COVID, due to rising prices, we expect a further decline in customers in the guest house and restaurant. Sales of draft beer should return to their standard; after the COVID crisis, we also saw a decline in sales of bottled beer almost as before the crisis"* (P<sub>CZ2</sub>).

Those organic farmers (P<sub>HU5</sub>, P<sub>HU7</sub>, P<sub>HU8</sub>, P<sub>HU15</sub>, and P<sub>CZ9</sub>), who have run their enterprises for a longer time, could provide information about their experiences during the first and second waves of the COVID pandemic. They detected a decline in demand during the first wave as a result of people's fear, which did not favor sales. As summarized by a turkey producer: *"In the first period, we produced for the freezer"* (P<sub>HU5</sub>). During the second wave, the organic producers reported an increase in demand, which they believe can be explained by the increase in health awareness and the fact that people also went to the market because of social relations, since there was no other place to go. Due to the perception of the danger of the COVID disease on the health of the population, consumers have also focused on increased purchase and consumption of foods rich in vitamins and functional foods that can boost the immune system to help fight off viruses, such as organic products, which was experienced by organic farmers (P<sub>SK5</sub> and P<sub>SK7</sub>). As an example, we present the answer of the respondent P<sub>SK7</sub>: *"Consumers started to buy higher volumes of organic products supporting health and immunity, such as Bio-Aronia Syrup, Bio-Currant Syrup, Juices, Herbal tea, etc"* (P<sub>SK7</sub>).

In case of viticulture, there was an interesting phenomenon during the COVID pandemic. Most respondents from this area of agriculture noticed an increase in wine consumption by their private customers so they compensated for the reduction in incomes by delivering to restaurants and other facilities. *"The number of customers from restaurants decreased rapidly, nevertheless, the number of private customers increased by 25% that compensated for the decrease in turnover in restaurants. People started drinking more during the COVID crisis. At the moment, our business aims more at private customers and it was caused by the COVID crisis"* (P<sub>CZ10</sub>). A wine producer from Poland confirmed: *"COVID had a terrible effect on humans, but wines and winemakers had a good time—people began to drink more wine"* (P<sub>PL6</sub>). A similar situation was noticed in the consumption of beer (P<sub>CZ2</sub>) and also in agrotourism: *"Already during the crisis, customers showed increased interest in our products. In general, customers today are more looking for domestic production, natural tranquility and the like. We certainly have many more customers today who appreciate our work or come to inspire us"* (P<sub>CZ17</sub>). This phenomenon was also mentioned by Polish farmers (P<sub>PL24</sub> and P<sub>PL25</sub>), who confirmed that relationships were improved and new customers were acquired, thanks to the COVID-19 pandemic and people's concerns about health as a result of recommendations from nutritionists and doctors.

### 4.3. Prices of inputs and outputs of the production

The most evident change during and after the COVID crisis was noticed in the category of input and output prices, as confirmed by the majority of farmers (e.g., P<sub>CZ1</sub>, P<sub>CZ2</sub>, P<sub>CZ17</sub>, P<sub>HU5</sub>, P<sub>HU9</sub>, P<sub>HU11</sub>, P<sub>HU15–22</sub>, P<sub>PL12</sub>, P<sub>PL14</sub>, P<sub>PL17</sub>, P<sub>SK5–11</sub>, P<sub>SK14</sub>, and P<sub>SK15</sub>): *“This is certainly the most sensitive impact of COVID-19”* (P<sub>CZ17</sub>). During the year 2020, there were no significant increases in input prices, and thus, there was no need to increase output prices. During the year 2021, an increase in input prices has been mentioned by all surveyed respondents; nevertheless, some businesses sought to maintain output prices at the expense of their trade margins (especially in the viniculture, e.g., P<sub>CZ5</sub>, P<sub>CZ9</sub>, P<sub>CZ10</sub>, P<sub>CZ11</sub>, P<sub>CZ14</sub>, and P<sub>CZ15</sub>). Most respondents had to increase output prices at the moment and are expecting further price increases. Respondent P<sub>CZ1</sub> stated: *“Due to the unstable situation on world markets and accelerating inflation, we did not change our pricing strategy during the COVID crisis, we have now been forced to do so by circumstances on world markets”* (P<sub>CZ1</sub>). Farmers of all production orientations confirmed a significant input price increase: *“Input prices have risen significantly, agriculture is dependent on a variety of commodities—iron, plastics, fuels, energy... All inputs have gone up significantly, sometimes by as much as 200%”* (P<sub>CZ6</sub>). The price increase was influenced by more complicated methods of delivery, distribution channels (stopped farmers' markets, sales at marketplaces, exhibitions, and fairs), as well as the lack of inputs (packaging materials, etc.).

However, differentiating between price increases was difficult for respondents due to the COVID crisis and price increases due to the ongoing economic and political crisis. As Polish farmers stated: *“It appears that COVID had no influence on the increase in the production costs. Fuel prices have increased (electricity and gas) and this has an impact on production costs... More than COVID, the price of grains was influenced by rising fuel prices”* (P<sub>PL4</sub>), or *“COVID-19 contributed in part to an increase in production costs and final price”* (P<sub>PL7</sub>). Most respondents are afraid of the future, and they do not know how to plan their price strategy given unpredictable economic and political circumstances. Goat cheese producer from Poland summarized: *“Prices will surely increase this year due to the war in Ukraine. It's going to be a tough year for everyone”* (P<sub>PL9</sub>).

### 4.4. Subsidies in agricultural sectors and financial support of businesses during the COVID-19 crisis

The situation regarding the subsidies for farmers in connection with the COVID-19 pandemic was different in the particular countries examined. Although Slovak farmers did not receive COVID-related support, Czech, Polish, and Hungarian farmers could use subsidies under certain conditions.

Since subsidies in the Czech Republic were tied only to closed businesses as a result of COVID-19 regulations, only respondents that have additional services (gastronomy, accommodation, and agrotourism) could draw financial help from the Antivirus program (e.g., P<sub>CZ</sub>1, P<sub>CZ</sub>2, P<sub>CZ</sub>16, P<sub>CZ</sub>7, P<sub>CZ</sub>9, P<sub>CZ</sub>11, and P<sub>CZ</sub>13). Respondent P<sub>CZ</sub>2 confirmed: *"We used the Antivirus program (mode A and B, in the first wave), when we were forced to close our operation, and the Antivirus A and Plus program in the next wave"* (P<sub>CZ</sub>2), and respondent P<sub>CZ</sub>11 from viticulture drew series of financial support due to the combinations of his activities: *"We used subsidies from the Antivirus program: 1) For accommodation—200 CZK/day/room; 2) For self-employed persons—exemption from payment of social and health insurance; 3) Per employee; 4) Restaurant—wine shops"* (P<sub>CZ</sub>11).

In Poland, every third of the surveyed farms received financial assistance related to the COVID-19 crisis. These were, for instance, exemptions from paying contributions to the Social Insurance Institution for three months (P<sub>PL</sub>3, P<sub>PL</sub>17) or a preferential loan under the first "anti-COVID shield" (P<sub>PL</sub>19), that is, partially redeemable loan. Several farmers mentioned that the Polish government did not care much about farmers during the COVID-19 crisis (P<sub>PL</sub>4, P<sub>PL</sub>7, P<sub>PL</sub>10, P<sub>PL</sub>12, P<sub>PL</sub>13, and P<sub>PL</sub>23).

All respondents from these two countries, that is, the Czech Republic and Poland, confirmed that drawing financial support to eliminate the consequences of the COVID-19 crisis has no impact on drawing other agricultural subsidies, and they mostly found the financial support from the government to be sufficient during the COVID-19 crisis.

In Hungary, only a small proportion of respondents used the opportunity to draw COVID-related subsidies (P<sub>HU</sub>1, P<sub>HU</sub>5, P<sub>HU</sub>13, P<sub>HU</sub>10, and P<sub>HU</sub>17). Farms with livestock production received one-time animal-based support to mitigate the effects of COVID-19 (P<sub>HU</sub>5, P<sub>HU</sub>10, P<sub>HU</sub>13, and P<sub>HU</sub>14); however, they criticized the lack of a long-term concept as indicated by one of them: *"Only fire-fighting happened"* (P<sub>HU</sub>10). As for the Slovak farmers, all farmers interviewed identified the complicated bureaucracy for applying the main reason or they did not meet the specified set conditions for receiving support. The difficulty of obtaining subsidies was also mentioned by Hungarian farmers, where subsidies were optimized for larger enterprises with a significant volume of production; therefore, forms of assistance independent of COVID-19 were more easily available for small family farms.

#### **4.5. Nature of production and sales**

Interviews with farmers across V4 countries revealed that the main changes in this issue due to the COVID-19 pandemic are the involvement of new sales channels, such as social media, online presentations, and promotion or e-shop launching, eventually takeaway service. A positive effect of the

COVID-19 crisis was noticed, that is, these new marketing and sales channels are planned to be used in the future as well: *"The role of online sales has certainly increased. We now know that this channel can be relied upon in the future"* (P<sub>CZ</sub>9). An impact on the choice of distribution chains was also mentioned by some farmers (e.g., P<sub>HU</sub>1 and P<sub>HU</sub>3), namely, the effort to sell through short distribution chains or direct sales. One Hungarian respondent saw this as an opportunity: *"I would like to convert my arable fields to organic and start direct sales. I believe sustainable agriculture and finding a market niche provide an opportunity for smaller family farms"* (P<sub>HU</sub>3).

Stabilized and experienced businesses answered that there was no need to change the nature of their production during or after the COVID-19 crisis. In a few cases, the farm owners had more time thanks to the COVID-19 pandemic, which they used to invent new products. Thanks to this, the production was enriched with new products (P<sub>PL</sub>17, P<sub>SK</sub>1, and P<sub>SK</sub>2).

#### 4.6. Strategies and business models of agricultural family businesses

The majority of farmers were forced to change their business models or strategies during or after the COVID-19 crisis. Most respondents focused their strategy on the stabilization of the market: *"We are implementing a maintenance strategy"* (P<sub>CZ</sub>10) and *"to produce as cheaply as possible and sell as expensive as possible"* (P<sub>PL</sub>10). The COVID-19 crisis was not conducive to long-term strategic changes. Some farmers had plans to expand their business before the COVID-19 pandemic, such as the increase of production (P<sub>PL</sub>5, P<sub>PL</sub>6, and P<sub>CZ</sub>17) or expanding the activities in agrotourism (P<sub>PL</sub>7); nevertheless, such plans were rather postponed. A Polish cheese producer described the situation: *"I gave up processing cheese and started working in a construction company. Before COVID, the strategy of my farm was to produce high-quality, eco-friendly cheese and sell cheese to restaurants and private customers. Unfortunately, the restaurant sales strategy was not implemented due to COVID"* (P<sub>PL</sub>9).

Nonetheless, some farmers also mentioned positive impacts, such as the introduction of new forms of sales (online sales and takeaway sales) and advertising (P<sub>CZ</sub>14, P<sub>CZ</sub>15, P<sub>PL</sub>17, P<sub>PL</sub>21, P<sub>PL</sub>22, and P<sub>SK</sub>15), and they plan to continue with these strategies. Some farmers even see the COVID-19 crisis as an opportunity that might contribute to sorting out ideas and directing the business.: *"Crisis is an opportunity ... everyone should rethink his agricultural practices"* (P<sub>HU</sub>1).

In general, respondents described areas in which strategies should be created in the future; however, deciding whether they are directly related to the COVID-19 crisis is difficult. The findings show that their future strategies after the COVID-19 crisis should be a provision of workforce and seasonal workers, better utilization of financial funds and subsidies, application of short supply chains, and sustainable soil cultivation that might change the soil water capacity during drought.



## 4.7. Discussion

The results of our study show that the COVID-19 pandemic created not only difficult challenges but also opportunities for small firms in the agricultural sector in Visegrad countries. The most significant effects of the COVID-19 pandemic were observed in the area of sales and prices, which was confirmed by the vast majority of farmers in our study. The decrease in sales depended on the importance of the hotel and restaurant services as clients for farmers, as also confirmed by studies conducted in other countries, for example, Meixner et al. (2022) and Cavallo et al. (2020). Due to the lockdowns and COVID-19 restrictions, farm sales to the hospitality industry decreased, simultaneously with a decline in sales to wholesalers. By contrast, some farms experienced increased sales to consumers, namely, wine farms in the Czech Republic praised the increase in wine consumption by their private customers so that they compensated for the reduction of incomes from delivering to the hospitality industry. Our results suggest that the increase in direct sales to customers during the time of COVID-19 pandemic might be considered a general phenomenon in agriculture (e.g., Meixner et al., 2022; Yoshida and Yagi 2021), as well as the increase in preference for organic and local food (e.g., Perrin and Martin, 2021; Meixner et al., 2022). In line with other studies from agricultural sectors (e.g., Grigorescu et al., 2022; Meuwissen et al., 2021; Meixner et al., 2022; Gu and Wang, 2020), an increase in input prices (mainly due to more complicated delivery, changes in distribution channels, or lack of inputs) had significant income effect on farms; therefore, they were forced to gradually increase the prices of their production. However, some businesses (especially in the Czech viticulture) sought to maintain output prices at the expense of their trade margins to keep existing customers.

As already mentioned, the interviewed farmers also confirmed the positive consequences of the COVID-19 pandemic for small family farms in Visegrad countries, such as the launching of new marketing and sales channels (online promotion, direct sales/short distribution channels, online sales, and takeaway service) and higher demand for agricultural products perceived by consumers as healthy and beneficial for immunity (shifting consumer attitudes toward organic or functional food). This appears to be a long-term effect of the COVID-19 crisis (confirmed by other previously published studies, such as Hobbs, 2020; Perrin and Martin, 2021; Snow et al., 2021), as interviewed farmers expect the use of newly introduced sales methods and online service offerings to continue in the future.

Most of the interviewed farmers did not report significant effects of COVID-19 on the workforce or on production as such. Some of them were temporarily affected by a shortage of workers, which was addressed to some extent by the greater involvement of family members. Conversely, in some cases, family members work less on the farm due to the home education of their children. Overall, it can be summarized that human resources stayed more or less the same (similar to Meixner et al., 2022).

Apart from a reduction in the level of production in a few farms, no significant changes in production were reported for the small farms surveyed, which is in accordance with Meuwissen et al. (2021) or Meixner et al. (2022). Rather, negative impacts on nonagricultural secondary activities linked to the hospitality industry were mentioned. Most respondents focused their strategy on the stabilization of the market during the COVID-19 crisis, and in some cases, investment plans were rather postponed.

The vast majority of farms dealt with the COVID-19 crisis on their own—only a few of the interviewed farmers received any financial support linked to the COVID-19 pandemic. Most farms were not eligible (either due to their small size or the nonclosure of their business) or did not apply for support due to bureaucratic obstacles. However, COVID-19 support for agricultural businesses was probably not as crucial as in other sectors, since compared to other sectors (Nicola et al., 2020), the economic consequences of the COVID-19 pandemic for small family farms in the Visegrad countries were perceived as moderate. Our findings regarding the limited impact of the COVID-19 pandemic on agricultural production are consistent with several already published studies, such as Meuwissen et al. (2021), Laborde et al. (2020), Perrin and Martin (2021), and Tougeron and Hance (2021).

## 5. Conclusions

The project was based on empirical research in agriculture providing evidence of the effects of the COVID-19 crisis on family farms in four Visegrad countries. Based on the sample of 86 family farms, the project gives findings on how the COVID-19 pandemic impacted farmers and how they managed post-COVID recovery and delivers important conclusions for stakeholders within the food supply chain. Interviews with representatives of family farms focused on the perceived impacts of the COVID-19 pandemic on human resources, supplier–customer relations, changes in production, distribution channels, and strategies. The major overall finding is that the COVID-19 pandemic has not affected family farms as fundamentally as one might expect (e.g., Hobbs, 2020; Meuwissen et al., 2021). Most interviewed farmers perceived the effects of the pandemic as moderate—the most frequently mentioned negative impacts were the decrease in sales due to the closure of accommodation and restaurant services, delays in the supply of inputs, and minor problems with the availability of workers. However, even these negative impacts were not fundamental, because the main activity of the farms is agricultural production, which was not affected by the COVID-19 pandemic in the sense that it would be interrupted or otherwise limited. Several farmers, conversely, mentioned the COVID-19 crisis as an opportunity when they introduced new forms of sales, launched effective online promotions, strengthened relationships with long-term business partners, or acquired new customers, thanks to changes in consumer preferences and purchasing habits, such as online shopping and regionality. Overall, family farms have coped well with the COVID-19 crisis in all four countries studied, and using the findings from the interviews, the following implications can be drawn. At the end of this chapter, the project scheme is graphically depicted.

Three main recommendations regarding the adaptability and resilience of family farms in Visegrad countries during the COVID-19 crisis were identified: (1) the importance of a diversification strategy, (2) selling through the short supply chains, and (3) digitization of agriculture.

Our findings confirmed that farmers operating more diversified were affected by the minor negative effects of the COVID-19 crisis, not only because of the spread of their production activities but also particularly because they were able to retain a much more diverse customer base—diversification as a strategy has paid off, both in terms of products and marketing channels. At the same time, less dependence on external input suppliers proved to be a factor of better viability during the crisis, that is, moving toward more autonomous agricultural systems, when family farms rely mainly on internal resources and are embedded in local networks. These results are consistent with the resilience theory, which emphasizes diversity, feedback tightness, and modularity as key determinants of increasing the resilience of agricultural systems (Meuwissen et al., 2019). Enhancing the resilience of farms through such diversification of activities, products, or possibly at least sales channels naturally brings increased

costs (Bowman and Zilberman, 2013); hence, this adaptation should be monitored, and how it threatens farm profitability and thus resilience must be assessed. In this context, small farmers could be helped by governments, for example, by providing tax credits, as a tool to mitigate the negative impacts on the financial situation of these farms.

Second, supply chain organization appears to play a significant role and influence on farmers' viability during crises, as also pointed out by previous studies, for example, Hobbs (2020). During the COVID-19 pandemic, the importance of short food supply chains and regional/local production became apparent. The situation has forced many people to reconsider their views on daily spending, health, and nutrition (Kaminskyi et al, 2021). Due to the COVID-19 crisis, consumers have thought more about what products they buy, focusing more on fresh, natural, and quality products. Our research has confirmed that family farms have taken advantage of this feature and adapted to new customer requirements—many farms selling directly to consumers reported an increase in demand and a strengthening of the links between farmers and consumers. Therefore, our next recommendation concerns the support of cooperation projects on short supply chains, which would not necessarily include only funding, but mainly informational, educational, methodological, and other activities leading to the improvement of general knowledge about the issue of short supply chains to contribute to the topic of creating an effective distribution network of supplier–customer relations.

The third feature of the COVID-19 crisis, besides having significant long-term effects, is the acceleration of the digitization processes of agriculture present in all its activities (Klerkx et al., 2019), which can also help to shorten the food supply chains. As access to consumers was prevented by the closure of markets during the COVID-19 pandemic, the digitization of the sales process (i.e., creating online stores, selling agricultural products through social platforms, and online promotion) became a key survival strategy for many family farms. Thus, even if the older part of rural society gets used to this, we would consider it very useful to have a training initiative for small farmers in the field of digital marketing. Finally, several limitations of our study should be kept in mind when interpreting the results. First, our research is not representative of all V4 family farms, since it does not cover all types of family farms but focuses only on farms in MA. Future research could, therefore, be conducted across a larger spectrum of farms and their geographic locations. Second, we examined the impacts of the COVID-19 pandemic and farm resilience in terms of farmers' subjective perceptions. It would be beneficial to objectively assess impacts on farms by incorporating economic measurables. Third, this research focused only on the short-term effects of the COVID-19 pandemic; therefore, longer-term effects should be further evaluated. Considering these limitations in future research would allow for a more global perspective and assist in designing policies and regulatory environments, leading to greater resilience of agricultural systems not only during periods of crises.

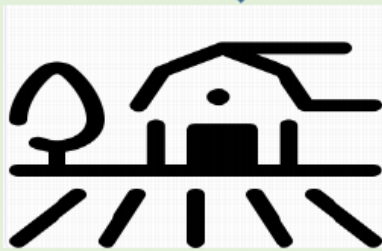
# Post-Covid Recovery of Small Family Businesses in V4 Countries

## Methods & Participants

86 semi-structured in-depth interviews with farmers



**Covid 19 impact?**



**Multifunctional farms  
V4 countries**



Czechia



Hungary



Poland



Slovakia

## Category of impact



Human resources



Supplier-customer relations



Production



Distribution channels or strategies



Price of inputs and outputs



Business models



## Findings

### High level of farm resilience

diversity, feedback tightness, modularity

### Several negative impacts

- problems with the availability of external/seasonal workers
- delays in the supply of inputs
- decrease in sales due to the closure of accommodation and restaurant services

### Effects

- ✓ importance of short food supply chains and regional/local production
- ✓ acceleration of the digitization processes

*“Crisis is an opportunity ... everyone should rethink his agricultural practices” (PHU1).*

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## Appendix

Table 1—Overview of interviewed respondents

<b>Respondent</b>	<b>Number of permanent employees</b>	<b>Type of production</b>
P <sub>CZ</sub> 1	35	Sales of fertilizers + precision agriculture + other services (advice for farmers)
P <sub>CZ</sub> 2	32	Brewing, malting + gastronomy + accommodation
P <sub>CZ</sub> 3	No employees, only family members	Animal production (sale of milk, pigs for slaughter, cattle for slaughter), Crop production (sale of feed wheat and barley)
P <sub>CZ</sub> 4	11	Crop production (sale of own honey products: skin care, body care, healing products, honey and bee products, mead)
P <sub>CZ</sub> 5	No employees, only family members	Viniculture, vineyards, and sale of grapes
P <sub>CZ</sub> 6	9	Organic multifunctional farm: Combined production (plant + animal), Other services (agrotourism)
P <sub>CZ</sub> 7	49	Combined production (crop + animal): production of wheat, rape + production of milk, meat + biogas plant
P <sub>CZ</sub> 8	No employees, only family members	Primary agricultural production
P <sub>CZ</sub> 9	10	Sale of grapes, sale of wine, accommodation (guesthouse)
P <sub>CZ</sub> 10	7	Sale of grapes, sale of wine, accommodation (guesthouse)
P <sub>CZ</sub> 11	1	Organic viniculture and agrotourism
P <sub>CZ</sub> 12	3	Crop production: wheat, barley, rape + animal production (pig breeding) + complimentary assistance with the use of agricultural machinery
P <sub>CZ</sub> 13	No employees, only family members	Crop production (primary agricultural production) + other services (construction industry)
P <sub>CZ</sub> 14	3	Crop production (integrated production), viniculture
P <sub>CZ</sub> 15	1	Crop production (viniculture, sale of wine, and sale of grapes) + other services
P <sub>CZ</sub> 16	No employees, only family members	Crop production (wheat, barley) + animal production (pig breeding)
P <sub>CZ</sub> 17	7	Combined production (crop + animal) + other services (agrotourism, gastronomic services)
P <sub>CZ</sub> 18	35	Crop production (fruit growing)
P <sub>CZ</sub> 19	No employees, only family members	Combined production (crop + animal) + organic production
P <sub>CZ</sub> 20	No employees, only family members	Combined production (crop + animal)
P <sub>CZ</sub> 21	No employees, only family members	Combined production (crop + animal)
P <sub>CZ</sub> 22	No employees, only family members	Combined production (crop + animal)
P <sub>CZ</sub> 23	45	Combined production (animal—cow breeding, milk production; crop—potatoes production; grass for seed, fodder crops) + other nonagricultural activities (wooden buildings and sales of garden and municipal equipment)
P <sub>SK</sub> 1	45	Combined production (crop + animal)—conventional: cereal, chicken to wholesale dealers and processing industry
P <sub>SK</sub> 2	43	Combined production (crop + animal)—conventional: Cereals, pork to wholesale dealers and processing industry
P <sub>SK</sub> 3	23	Crop production—conventional: Cereals

P <sub>SK</sub> 4	19	Crop production—conventional: Cereals, oil seed rape
P <sub>SK</sub> 5	1	Crop production—organic: Aronia, currants, herbs, jam,
P <sub>SK</sub> 6	2	Fruit orchard—organic: Apples, fruit products
P <sub>SK</sub> 7	7	Crop production—organic: Aronia + products of this fruit—jam, juice
P <sub>SK</sub> 8	1	Crop production—conventional: Poppy seeds, poppy cosmetics
P <sub>SK</sub> 9	1	Crop production—conventional: Pepper, pumpkin, agricultural consultancy
P <sub>SK</sub> 10	1	Crop production—conventional: Pumpkin, pumpkin seeds, pumpkin oil
P <sub>SK</sub> 11	1	Animal production—organic: Cow milk, cheese, sour milk products
P <sub>SK</sub> 12	1	Crop production—conventional: Cereals
P <sub>SK</sub> 13	1	Animal production—conventional: Goat milk, goat cheese
P <sub>SK</sub> 14	1	Animal production—conventional: Beekeeping, Honey, products from honey, Apitherapy
P <sub>SK</sub> 15	1	Animal production—conventional: Beekeeping, Honey, products from honey
P <sub>SK</sub> 16	1	Crop production—conventional: Wine
P <sub>HU</sub> 1	8	Certified organic grassland, conventional field crop production, cheese production
P <sub>HU</sub> 2	5	Certified organic fruit production, conventional field crop production
P <sub>HU</sub> 3	18	Certified organic fruit production, conventional field crop production, and grassland management, direct selling in a box scheme
P <sub>HU</sub> 4	7	Certified organic grassland and field crop production
P <sub>HU</sub> 5	4	Conventional livestock production, turkey for catering
P <sub>HU</sub> 6	No employees, only family members	Organic livestock production, cheese, and milk products on the organic market
P <sub>HU</sub> 7	No employees, only family members	Organic fruit production, processed products on the organic market
P <sub>HU</sub> 8	No employees, only family members	Organic vegetable production; vegetables and seedlings on organic market
P <sub>HU</sub> 9	No employees, only family members	Conventional field crop production; cereals, advisory on precision farming
P <sub>HU</sub> 10	6	Conventional mix farming; cereals, chicken to wholesale dealers and processing industry
P <sub>HU</sub> 11	No employees, only family members	Conventional field crop production; engineering activity
P <sub>HU</sub> 12	2	Mostly conventional, partially organic; touristic activity (water tour organization)
P <sub>HU</sub> 13	2	Organic farm; ecotourism, agrotourism, farm tourism
P <sub>HU</sub> 14	No employees, only family members	Conventional farm; some lease work in the summer, direct selling
P <sub>HU</sub> 15	2	Conventional farm; artisanal cheese making, direct selling
P <sub>HU</sub> 16	No employees, only family members	Conventional farm; direct selling, e-commerce
P <sub>HU</sub> 17	35	Mixed production (11 ha organic); trade with traditional supermarkets, duty-free shops (airport), e-commerce
P <sub>HU</sub> 18	No employees, only family members	Conventional farm; direct selling
P <sub>HU</sub> 19	1	Conventional farm; export to trader (Italy)
P <sub>HU</sub> 20	2	Conventional farm; selling to trader
P <sub>HU</sub> 21	No employees, only family members	Conventional farm; selling to vinery, and direct selling to small private cellars

P <sub>HU</sub> 22	No employees, only family members	Conventional farm; selling to vinery
P <sub>PL</sub> 1	1	Cherry production
P <sub>PL</sub> 2	3	Chickens production for own needs and for agritourism; agrotourism + educational farm
P <sub>PL</sub> 3	5	Vegetable production of cereals + hardware/grocery store
P <sub>PL</sub> 4	1	Orchards, pastures + goats + cheese production
P <sub>PL</sub> 5	3	Orchards: apple, pear, plum, cherries + production of fruit juices
P <sub>PL</sub> 6	1	Vineyard, meadows, forest + agrotourism, hen parties, wine tasting
P <sub>PL</sub> 7	2	Orchards, clover, the rest are meadows, pastures + goats + cheese production
P <sub>PL</sub> 8	1	Cereal, wheat, phacelia, mustard (crop flowers for bees) + direct sale of honey
P <sub>PL</sub> 9	2	Meadows + goats + cheese production
P <sub>PL</sub> 10	2	Farmland, cereal production, hens + sale of eggs
P <sub>PL</sub> 11	2	Grassland + sheep + cheese production
P <sub>PL</sub> 12	4	Cereals, meadows + pigs + production of cold meats, hams
P <sub>PL</sub> 13	4	Meadows + Polish red cows + cheese production + agrotourism
P <sub>PL</sub> 14	3	Chokeberry, raspberry, plum, black and red currant + certified organic juice production
P <sub>PL</sub> 15	4	Grassland + dairy cows + cheese production
P <sub>PL</sub> 16	1	Vegetable production + educational farm + direct sale of vegetables (Internet)
P <sub>PL</sub> 17	5	Lavender, mint, grapes, orchard + production of syrups, lavender vinegar, natural cosmetics, elderberry, plum, apple, Japanese quince, cherry with lavender
P <sub>PL</sub> 18	2	Vegetable garden, herb garden, meadows and pastures + cattle + educational farm
P <sub>PL</sub> 19	8	White cabbage, dill + cabbage pickling and pickling cucumbers
P <sub>PL</sub> 20	2	White cabbage, green cucumbers, carrots, beets, wheat + pickled cabbage and cucumbers
P <sub>PL</sub> 21	2	Grassland + organic poultry farming: chickens, guinea fowl + direct sale of carcasses, offal
P <sub>PL</sub> 22	2	Grassland + dairy goats + goat milk processing + advertising/marketing agency
P <sub>PL</sub> 23	3	Orchard: apples, plums, pears + agrotourism, sale of ecological products for tourists
P <sub>PL</sub> 24	2	Rye, lupine, meadows, elderberry + forest educational path. Black elderberry for syrups, juices, teas, jams, refreshing drinks, jellies, elderberry silage
P <sub>PL</sub> 25	2	Vegetables + processed vegetables (preserves)