Research Article

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Challenges and opportunities for young farmers in the implementation of the Rural Development Program 2014–2020 of the Republic of Croatia

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Abstract: Today, all sectors of the economy are confronted with the problem of demographic renewal. The low number of young farmers and the lack of development opportunities for them pose major challenges for the agricultural sector. This study focuses on the Rural Development Program (RDP) 2014–2020 of the Republic of Croatia, which provided many opportunities for young farmers through its measures. The study is based on a qualitative approach that includes two research methods to identify the benefits and limitations of the RDP measures as well as the challenges that Croatian young farmers still face after the implementation of the Program. The first involved the descriptive analysis of secondary data, while the second was based on the collection of primary data using the interview method. Eight semi-structured interviews (N = 8) were conducted with farmers aged 18–41 years in all four Croatian NUTS2 regions. In almost all 20 Croatian counties, the number of young farm owners has increased and the level of education acquired has also increased accordingly, with a decrease in the number of uneducated and those with only primary education and the largest increase in those with secondary education. The interviews revealed that all respondents see similar benefits in continuing farming as a profession: they are their own boss and have strong work motivation and job satisfaction. However, they also mention similar problems that persist: financial insecurity, insufficient labor, high dependence on climate change, and problems related to land.

Keywords: Croatia, generational turnover, RD measures, RDP 2014–2020, young farmers

1 Introduction

Over the last three decades, one of the biggest challenges for the Republic of Croatia has been the demographic decline, characterized by falling birth rates and the emigration of mainly young and educated people. Rural areas and the agricultural sector are particularly affected by this. It is therefore not surprising that the Rural Development Program (RDP) 2014–2020 in Croatia focused primarily on young farmers, with the primary aim of promoting generational renewal in agriculture. The new Croatian Common Agricultural Policy (CAP), which is planned for the period between 2023 and 2027, also emphasizes generational renewal as one of the nine main objectives aimed at the survival and development of the agricultural sector by ensuring a sufficient number of qualified and motivated young farmers [1].

Generational renewal in agriculture, i.e., the effective and efficient transfer of farms between generations, is seen as crucial for the survival, continuity, and future of the agricultural sector, the traditional family model of farming, farm management systems, and the overall sustainability of rural society [2,3]. Generational renewal is a fundamental issue in European agriculture and young people are seen as a key resource for the development of a modern and competitive agricultural sector [4]. Despite the ongoing efforts of EU governments and the Council, the aging of farmers seems to be an unstoppable process that goes hand in hand with the issue of the concentration of land, the decline in agricultural activity, and the transformation of Europe's rural areas. Consequently, we loose the potential that young

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farmers and new entrants[1] bring to the agricultural sector. Thus, the "young farmer problem" in Europe is seen in the context of a modernist agenda for agriculture, whereby greater efficiency and innovation lead to higher levels of production and economic development [5].

The transfer of managerial control between generations on the family farm has long been understood as a critical and often problematic phase, impacting both the individual farm business and more broadly, the sustainability of family farming systems [6]. Current research also shows that the young farmer problem consists of a number of different factors, which can vary greatly depending on the region under consideration [7]. Nevertheless, based on an EU research study, Coopmans *et al.* [8] identified three conceptual phases and fourteen factors that contribute to the understanding of generational turnover on farms in general. The authors found that the generational renewal has these important elements: psychological, institutional, and the need for further farm development. The psychological element (formation of the successor identity) refers to the personal characteristics of the farm successor while the institutional element refers to the process of farm succession, which includes the managerial, practical, legal, and symbolic measures required for the transfer of the agribusiness. The authors put a special emphasis on the need for further farm development, especially in relation to the change in farm organizational structures and strategies associated with the generational transfer. When analyzing the reasons why young people might have an aversion to professions such as agriculture, the authors show that this is associated with low incomes, long and insecure working hours, little rest, living in remote rural areas, and many other uncertainties [9–13].

1.1 Common agricultural policy

Through the creation of specific policy measures, the European Union has started to address the problem of generational turnover in agriculture since 2007, with a focus on supporting the development of an economy with young farmers in charge. These support measures included payments to young farmers under the first pillar and support for business start-ups by young farmers under the second pillar [5]. In Croatia, young farmers have exercised the right to receive payments for young farmers under the first pillar of the CAP. This support is an additional amount equal to 25% of the national average amount per hectare for the first 50 ha for a maximum period of 5 years and is available to persons who are not older than 40 years in the first year of application if they have started or taken over a farm in the 5 years preceding the first year of application. The prerequisite is a high school education in the fields of agriculture, nutrition, or veterinary medicine or the completion of an agricultural vocational program. Support for the young farmers from the second pillar of the CAP is described in Section 3.1.1.

The CAP Strategic Plan of the Republic of Croatia continues to focus on young farmers, funding sources, environmental issues, and market problems. Croatia's strategy aims to support the sustainable development of economically viable farms, the processing sector, and the improvement of living and working conditions in rural areas. It will support the protection of natural resources, biodiversity, and the climate through a number of incentives. "It will also focus on young and small farmers thanks to various farm investments and business development projects, as well as on higher standards of animal welfare in five livestock sectors (cattle, pigs, poultry, goats and sheep)."[2]

However, there are some limitations. For example, the CAP does not mention the simplification of the application process, a better information platform, and training for writing plans and projects, which are a necessary part of the process of taking over farms and their functioning and which are mentioned in existing literature as constant challenges that young farmers face and identify.

By carrying out a greater number of studies, it will be possible to better highlight the problems that plague young farmers and help decision-makers devise solutions that will facilitate the generational renewal of agriculture, which is proving to be key to the survival of rural areas and the production of sufficient quantities of food for a growing population.

1.2 Aims and methods

The aim of this study is to examine the RDP 2014–2020 of the Republic of Croatia, which included measures that particularly focused on young farmers, especially on improving the age and educational structure and increasing gender equality. The study examines the opportunities created for young farmers in Croatia in the context of the

1 New entrants refer to individuals starting new farms who had no previous agricultural experience (those entering farming from other sectors) while young farmers come from a farming background and generally enter via succession.

2 https://agriculture.ec.europa.eu/cap-my-country/cap-strategic-plans/croatia_en.

implementation of the RDP 2014–2020, as well as the limitations of these measures and the challenges that remain after its implementation.

The study relies on a qualitative approach using two research methods. The first involves the analysis of secondary data – two key documents RDP 2016–2020 and CAP 2023–2027 in Croatia and the statistical data from the National Register of Farmers between 2016 and 2021. The second includes the analysis of primary data collected using the interview method with N = 8 young farmers aged 18–41 in four Croatian NUTS2 regions. The main findings show that the implementation of the RDP 2016–2020 has led to positive improvements (new opportunities for young farmers, an increase in the number of younger, better educated and female farm-owners). Young farmers see many advantages in farming, but also share some disadvantages. Considering that some of the problems mentioned by young farmers are not addressed in the documents, this study can help to better tailor future strategies to the needs and problems of young farmers in Croatia.

2 Methodology

The study relied on a qualitative approach that included two research methods to identify the benefits and limitations of the RDP 2014–2020 measures as well as the challenges that young Croatian farmers still face after the implementation of the Program. The first involved the descriptive analysis of secondary data, including policies and measures for young Croatian farmers and statistical data from the National Register of Farmers between 2016 and 2021, while the second was based on the collection of primary data using the interview method.

The analysis of secondary data was used to identify the key measures promoted by the CAP and RDP 2016–2020 in Croatia, opportunities for young farmers as well as limitations of these policies and measures. In addition, changes in the age and education structure of family farm owners were analyzed using available data from the National Register of Farmers, which is maintained by the Paying Agency for Agriculture, Fisheries and Rural Development (PAAFRD). The data for the years prior to the implementation of the measures of the RDP 2014–2020 (2016) and the latest available data (2021) were taken into account. The changes in the shares of each age group in the total number of farm owners, the changes in the shares of the highest education attained by family farm owners, and the changes in the gender structure of family farm owners in 2021 compared to 2016 were calculated.

The selection of respondents for the qualitative analysis in this study was conducted through purposive sampling which is described as a non-probability sample in which the researcher aims to sample participants in a strategic way so that those sampled are relevant to the research questions that are being posed [14]. It is also connected to choosing a target group out of a population that is experienced in a certain type of phenomena (Andersson and Eke-Goransson, 2024). In the case of this study, this phenomenon is being a young farmer according to the EU and Croatian definition.[3] After defining the conditions that the respondents must fulfill, we contacted the Local Action Groups (LAGs) from different NUTS2 regions in Croatia so that they could provide us with the contact details of the farmers from their area who fulfill the conditions. In the author's experience, farmers who participate in the work of the LAG usually use EU funds, mainly through the LAG, but also in tenders at the state level. Some of the respondents were selected from their own circle of acquaintances, as they knew that they use or will use funds from the RDP. In the end, eight semi-structured interviews (N = 8) were conducted with farmers aged 18–41 in all four Croatian NUTS2 regions: Pannonian Croatia, Adriatic Croatia, City of Zagreb, and Northern Croatia (two respondents from each region). Since the size of a sample is not so crucial in qualitative studies [16], we decided that it would be enough to get the first results.

Two women (25%) and six men (75%) took part in the survey, which roughly corresponds to the proportion of women who run family farms in Croatia. The youngest respondent was 31 and the oldest was 39 years old. In terms of professional qualifications, the lowest level of education was secondary school, and the highest was a doctorate. The largest proportion of respondents had a university degree (62.5%), while a smaller proportion had a secondary school degree (37.5%). It is also important to point out that 50% of respondents did not state farming as their main occupation. Convenient sampling was used and the respondents were selected partly through personal acquaintances and partly with the help of the LAGs, who were asked to help us get in touch with some young farmers from their region. All interviews were conducted in person between June and

3 "A young farmer is a person who is older than 18 but not older than 40 (on the day before their 41st birthday), has professional knowledge and skills and is setting up an agricultural holding for the first time in which they have the status of holder/responsible person or has acquired the status of holder/responsible person for the first time within 5 (five) years up to the date of submission of the application for support, and in the case of a company, they are also a responsible person only if they are the owner of at least 50% of the company capital" [15].

July 2022. Before the interview was conducted, each interviewee was given two copies of the text of the consent form and was assured anonymity in the presentation of the research findings. The interviews took place on the farms whose owners we spoke to, so that they could be undisturbed during the interview and were conducted by the authors of this study Helena Šiftar and Mateja Jež Rogelj. The interviews were structured and conducted according to a pre-formulated protocol consisting of 6 questions and one additional question for women only. The protocol was developed by the authors of this study. The questions were devised according to the main aims of this study and the analysis of the secondary data. The questions included more factual information about the farms and farm owners (size in ha, economic size, types of agricultural produce, number of farmers/employees, brief history of the farm/farm owning, and the use and experience with government and EU policies, measures and grants), as well as more comprehensive questions on young farmers' perspective of the advantages and disadvantages of farming as a profession and their plans for the future development of the farm. There was an additional question relating to the challenges for female farm owners, as this was especially emphasized in the analyzed documents. The interviews lasted about 13 min on average, with the longest interview lasting for 18 min. The length of the interviews reflects the fact that the protocol was not long and most questions were informational in nature, which fulfilled the aims of this study. Future studies that would want to rely more heavily on the interview data could expand our protocol further to include more open-ended, in-depth questions. The field research was part of the scientific research project funded by the Croatian Science Foundation "SECRURAL" (UIP-2019-04-5257) at the Department of Sociology of the Faculty of Humanities and Social Sciences at the University of Zagreb.

After the interviews were conducted, they were listened to again and transcribed, followed by a thematic analysis of the data according to the instructions of Braun and Clarke [17]. A deductive approach to coding was used so the interview data was analyzed in relation to the themes that emerged from the analysis of the existing literature and secondary data. The key themes were extracted from the analyzed documents according to the main aims of the study (farms and their owners – main characteristics, agricultural measures – use and experiences, farming as a profession – advantages and disadvantages, and plans for future farm development). No new information, i.e., themes emerged during data analysis.

The thematic analysis was carried out in NVivo 12 Plus. All the interviews were translated from Croatian into English by the authors.

Consent: Consent has been obtained from all individuals included in this study.

3 Results

3.1 Policies and measures for young farmers in Croatia

3.1.1 RDP 2014–2020

On May 26, 2015, the European Commission approved the RDP for the period 2014–2020. The program defines 20 measures aimed at increasing the competitiveness of Croatian agriculture, forestry, and processing industries and improving living and working conditions in rural areas in general. Eligible investments within the measures of the RDP 2014–2020 are mostly co-financed by the European Union through the European Agricultural Fund for Rural Development (EAFRD), while the rest is financed from the state budget of the Republic of Croatia.

In the period from 2014 to 2020 (and in the transition period 2021 and 2022), young farmers in Croatia had the opportunity to apply for support through various measures under the RDP 2014–2020.

The first in a series of support measures is Measure 6 "Support for young farmers" type of operation 6.1.1, which is aimed at users up to 41 years of age with appropriate qualifications who have been holders of an agricultural holding for the first time for a maximum period of up to 2 years prior to applying for the tender. One of the conditions for receiving the grant was that the economic size of the registered farm had to be between EUR 8,000 and EUR 49,999. In this way, it was possible to finance the costs of expanding the farm, infrastructure, and increasing the quality of work through mechanization and other things. The amount of funding was up to EUR 50,000. In one of the tenders, there was an opportunity for young people working in agriculture to apply in addition to another permanent job, and for them, the support amounted to EUR 20,000.

According to the available data, a total of four tenders were held, for which 3,146 applications were received, and 1,509 grants for young farmers were finally awarded, with the total amount of grants awarded amounting to EUR 68,822,304.73. It is important to note that payments were made in three installments within 3 years of signing the financing agreement [18].

3.2 Age, gender, and educational structure of farmers in Croatia

As can be seen from the data presented in Table 1, the share of women as owners of agricultural holdings in the period from 2016 to 2021 is on average 30% in all counties of the Republic of Croatia. In some counties, the share of female owners has decreased (City of Zagreb −15.38%; Varaždin County −7.58%), while in some counties, there has been an increase (Zadar County +10.56% and Šibenik-Knin County +9.85%). The overall change in the average share of women as owners of agricultural holdings in this period is −1.63%, as shown in Table 1.

A look at Table 2 shows that in the period from 2016 to 2021, there is a certain positive trend in terms of the increase in the proportion of farm owners under 41 years of age, with Varaždin County (11.80%) and Međimurje County (9.46%) leading the way, while a negative trend can be observed in Zagreb County (−4.45%) and Vukovar-Srijem County (−3.92%).

According to Đapić [21], the counties with better results in the tenders intended for young farmers have a more favourable age structure of farm owners, i.e., there is a higher proportion of young farm owners. This is in line with our research, which confirmed that young farmers are more active when it comes to tenders and subsidies.

The percentage of farm holders in the 65 and older age group ranges from around 5% (in Germany) to more than 46% (in Portugal). The percentage of young farm holders (age group under 35 years) ranges from around 2% (in Portugal) to almost 15% (in Poland). This means that the age structure in individual countries significantly varies. This is particularly the case in Portugal, Cyprus, Italy, and Slovenia, where there is a high proportion of older farm holders and a low proportion of young farmers, and small-scale farms tend to predominate [5]. In Croatia, the share of young farmers (up to 41 years old) varies from county to county. It is lowest in Split-Dalmatia (7.89%) and highest in Vukovar-Srijem county (23.16%).

The study conducted by Dwyer et al. [22] also found evidence that the CAP as a whole has a positive effect in fostering generational renewal, particularly in agriculture, which varies from significant to only weakly effective across member states and territories.

In today's world, in any industry, including agriculture, education, and monitoring of evolving technologies and practices are very important. The existing educational programs provide adequate agricultural training at various levels of education. The fact is that there are certain problems in the professional development and additional education of farmers.

Table 3 shows that, in the period from 2016 to 2021, there are certain positive changes in all counties of Croatia in terms of increasing the level of education of farm owners. In all counties, the number of farm holders with incomplete primary education (referred to as IPE) or with completed primary education has decreased. The smallest decrease in the number of farm owners with no primary education was recorded in Primorje-Gorski Kotar County (−0.86%) and in the City of Zagreb (−0.76%), while the smallest decrease in the number of farm owners with only primary education was recorded in Istria County (−2.86%) and in Šibenik-Knin County (−2.70) (Table 3).

It is interesting to note that all counties except Međimurje (−2.40%) recorded an increase in the number of secondary school (SS) holders, with Požega-Slavonia (11.64%) and Lika-Senj (11.60%) leading the way (Table 3).

Table 1: Proportion of farm owners by gender in 2016 and 2021 by county in Croatia (%)

Year	2016		2021	
County	Women	Men	Women	Men
Bjelovar-Bilogora	36.42	63.58	34.19	65.81
Brod-Posavina	27.94	72.06	24.78	75.22
Dubrovnik-Neretva	24.00	76.00	24.05	75.95
EU*	46.43	53.57	39.22	60.78
The City of Zagreb	39.40	60.60	24.02	75.98
Istra	23.83	76.17	30.92	69.08
Karlovac	32.61	67.39	34.12	65.88
Koprivnica-Križevci	35.89	64.11	30.61	69.39
Krapina-Zagorje	31.50	68.50	35.12	64.88
Lika-Senj	40.01	59.99	33.54	66.46
Međimurje	34.50	65.50	27.94	72.06
Osijek-Baranja	28.55	71.45	23.63	76.37
Požega-Slavonia	26.70	73.30	32.01	67.99
Primorje-Gorski Kotar	31.12	68.88	30.90	69.10
Sisak-Moslavina	32.73	67.27	25.92	74.08
Split-Dalmatia	25.52	74.48	25.40	74.60
Šibenik-Knin	24.12	75.88	33.97	66.03
Varaždin	35.53	64.47	27.95	72.05
Virovitica-Podravina	30.06	69.94	23.81	76.19
Vukovar-Srijem	25.62	74.38	24.88	75.12
Zadar	23.09	76.91	33.65	66.35
Zagreb	35.07	64.93	34.19	65.81
Average	31.39	68.61	29.76	70.24

Source: Authors' calculation according to the data from the Register of Farmers [19,20].
*EU stands for European Union.

Table 2: Analysis of changes in the share of owners of agricultural holdings by age in 2021 compared to 2016 (%)

County	<41	41–45	46–50	51–55	56–60	61–65	>65
Bjelovar-Bilogora	3.19	−0.74	−1.77	−1.29	−0.72	−0.08	1.55
Brod-Posavina	5.23	−1.55	−1.67	−1.72	−0.67	−0.06	0.61
Dubrovnik-Neretva	0.33	−0.18	−1.06	−1.66	−2.40	−0.23	5.33
EU*	−4.90	0.11	−12.61	1.05	8.40	−10.50	16.60
The City of Zagreb	2.33	−4.02	−1.17	−1.03	−1.43	−2.04	5.46
Istra	4.49	−5.92	−0.05	−1.72	−2.06	−1.16	3.84
Karlovac	3.22	−3.18	−0.59	−0.20	−0.96	−0.90	−1.60
Koprivnica-Križevci	2.04	−4.95	−1.16	−0.76	−0.51	−0.75	1.42
Krapina-Zagorje	8.38	−2.11	−2.31	−3.72	−0.64	−0.88	1.88
Lika-Senj	2.55	−2.18	−0.55	−0.21	−1.16	−0.76	−3.34
Međimurje	9.46	−2.97	−0.34	−1.16	−0.59	−1.24	3.06
Osijek-Baranja	3.89	−6.51	−1.92	−2.00	−1.14	−0.05	1.65
Požega-Slavonia	0.02	−4.28	−2.75	−5.66	0.01	−0.74	−0.47
Primorje-Gorski Kotar	4.62	−3.21	1.61	−1.43	−2.08	−1.64	4.07
Sisak-Moslavina	−3.83	−7.38	−0.83	−2.53	−1.98	−1.08	1.62
Split-Dalmatia	3.40	−1.35	−0.69	−2.96	−2.09	−0.81	4.14
Šibenik-Knin	5.40	0.74	−0.45	2.68	−2.64	−1.81	2.68
Varaždin	11.79	−0.56	−1.27	−0.78	0.21	−0.68	1.71
Virovitica-Podravina	7.42	−7.18	−2.55	−2.89	−1.10	0.25	0.76
Vukovar-Srijem	−3.92	−10.01	−1.57	−4.81	−1.24	0.37	−0.19
Zadar	4.83	−1.46	−0.85	−1.13	−1.62	−0.79	0.78
Zagreb	−4.45	−4.45	−1.02	−10.93	−1.04	−1.49	2.07

Source: Authors' calculation according to the data from the Register of Farmers [19,20].
*EU stands for European Union.

Similarly positive, but slightly less pronounced changes were also observed among holders of agricultural holdings with higher education (HE label), with the City of Zagreb (5.42%) and Primorje-Gorski Kotar (4.74%) in the lead (Table 3).

It is striking that in the period from 2016 to 2021, there was an increase in the educational level of farm owners in all counties of the Republic of Croatia, which is at least partly due to the implementation of generational renewal measures in agriculture, as Dwyer *et al.* [22] found that a significant proportion of farmers, experts, and policymakers in case studies and EU interviews stated that knowledge, skills, and innovation had improved as a result of CAP-GR-supported farm transfers.

In their study based on Kovách, Kovách *et al.* [7] state that in Hungarian agriculture, there is a significant statistical correlation between the level of education of farmers and the size of the land used. Almost half (43%) of the owners of farms with more than 200 ha of land have tertiary education. One-third of farmers who farm between 100 and 200 ha have a university degree. Among farmers with over 100 ha, there are virtually no farmers with only primary education.

3.3 Interviews

3.3.1 Advantages and disadvantages of farming as a profession

Working in agriculture brings with it a number of advantages, but also problems. The most important advantage mentioned by respondents is the fact that they work for themselves, which gives them greater motivation to improve and learn from their own mistakes. They also emphasize the love of work and the fact that it is seasonal, which, if well organized, leaves more time for family or other interesting activities. This is evident from their statements:

> "…that's one of the advantages of being your own boss, even if you work a lot more than you would if you were working for someone else. And considering that I am a woman, that I have a family and children, the advantage is that I can spend a lot more time with my children than if I went to work somewhere. And they benefit a lot more from the fact that I am there and they work with me and we spend time together and talk." (F, 35, Koprivnica-Križevci county)

> "…I love it, it's my job, my profession. So, I do it with love and it's nice that I do it in my own way, that someone else doesn't tell me what to do." (F, 35, Koprivnica-Križevci county)

Table 3: Changes in the shares of the individual education groups in the total number of holders in 2021 compared to 2016 (%)

County	SS	HE	PE	IPE
Bjelovar-Bilogora	4.80	1.48	−5.33	−3.33
Brod-Posavina	4.95	1.52	−5.42	−2.91
Dubrovnik-Neretva	3.85	2.25	−3.86	−1.02
EU*	4.83	−0.63	−3.36	0.00
The City of Zagreb	3.28	5.42	−3.42	−0.76
Istra	4.69	2.40	−2.86	−1.57
Karlovac	10.62	4.19	−6.65	−4.91
Koprivnica-Križevci	5.68	1.75	−5.41	−3.18
Krapina-Zagorje	9.66	2.81	−3.20	−2.08
Lika-Senj	11.60	3.92	−7.09	−4.67
Međimurje	−2.40	0.75	−6.25	−1.90
Osijek-Baranja	5.83	1.83	−5.32	−2.33
Požega-Slavonia	11.64	3.76	−5.03	−3.13
Primorje-Gorski Kotar	5.39	4.74	−3.47	−0.86
Sisak-Moslavina	3.88	1.93	−5.15	−2.98
Split-Dalmatia	4.27	2.62	−2.82	−1.75
Šibenik-Knin	4.49	2.28	−2.70	−3.64
Varaždin	7.33	2.24	−4.73	−1.50
Virovitica-Podravina	9.30	2.03	−3.67	−2.62
Vukovar-Srijem	10.84	3.61	−4.43	−2.39
Zadar	2.88	1.46	−4.74	−3.07
Zagreb	6.51	2.43	−5.73	−2.40

Source: Authors' calculation according to the data from the Register of Farmers [19,20].
Markings used are as follows: IPE – incomplete primary education, PE – primary education, SS – completed secondary education, HE – higher education.
*EU stands for European Union.

> "...as an advantage I would highlight the fact that you are still your own boss, that you are in nature, you are outside, there is always something going on." (M, 39, The City of Zagreb)

> "...An advantage. I mean, you work for yourself. As much effort as you put in, that's how much you will get. That's my personal opinion. Advantage, the more you try, the more you are going to get. The more you invest, the more you will get. Let us say it's an advantage." (M, 31, Primorje-Gorski Kotar county (I4))

> "...Farming is a job you have to love. If you don't like it, you can't do it. You have to be crazy about it." (M, 39, The City of Zagreb)

> "...the ambition is a bit greater, and also the, the will to learn, to research, is probably much greater than if I were working for someone else. So, I can say that I might develop more in this particular direction than if I were working for an employer. That's the way it is." (F, 35, Koprivnica-Križevci county)

> "...That you are free. You work when you want." (M, 31, Primorje-Gorski Kotar county (I3))

Our research shows that the main problems they face are primarily related to market instability, prices, and demand. Although it is a seasonal business, it is clear that any change in the environment can have a negative impact on production.

> "...the biggest disadvantage in agriculture in general, not just for me as a young farmer, is our unstable market. The worst thing is that the product, the basic product that you produce, has an unstable price and an unstable demand. And you don't know whether you can sell the product or not. At what price will you sell it? So there's no certainty at all. And that's really a big shortcoming." (F, 36, Koprivnica-Križevci county)

> "Low purchase prices." (M, 32, Virovitica-Podravina county)

> "...the biggest disadvantage is mainly the price fluctuation and the placement problem." (M, 33, Virovitica-Podravina county)

Almost all respondents face land problems related to the fragmentation of plots, i.e., the impossibility of land consolidation. The problems in agriculture are also related to the lack of suitable labor, insecurity of farmers, insufficient and untimely information, administration, and bureaucracy that make work difficult.

> "...in this area where I live, the biggest disadvantage is actually the fragmentation of land. That's a problem that I do not think can be solved. Because all these plots are privately owned, it's impossible to merge them. And that is something that significantly increases the costs for the company itself." (M, 39, The City of Zagreb)

> "The biggest problem for us, let's say small family farms and young family farms, is the problem of getting land. So it's very expensive under number 1. And under number 2, we cannot compete with these big family farms that have hundreds of hectares each. Then it's no problem for him to get even ten thousand euros for one hectare. And for me that's inconceivable, isn't it?" (M, 33, Virovitica-Podravina county)

> "...the greatest disadvantage is the fragmentation of the land." (F, 36, Koprivnica-Križevci county)

3.3.2 RDP 2014–2020 and the use of rural development measures

The participants in our survey were eligible for support under RDP measures 6.1 (37.5%) and 6.3 (62.5%), either at the state level or through the LAG. 37.5% of respondents applied for this measure and were granted an entitlement. Most respondents (62.5%) applied for and were granted a claim under measure 6.3.1, the so-called support for the development of small farms with an economic size of EUR 2,000 to 7,999 in the micro or small enterprise sector, either at the state level or through the LAG. The aim of these measures is to support small farms in their conversion to market-oriented production, sustainable development, and

the reduction of unemployment in rural areas. The total amount of public funding available per call for proposals amounted to EUR 14931315.95 [18]. As they themselves indicated, the measures were mostly used for modernization and capacity expansion through the acquisition of additional land or livestock depending on the activity.

It is interesting to note that only 12.5% of respondents considered participating in the tender for measure 4 "Investments in fixed assets" and sub-measure 4.1 "Support for investments in agricultural holdings." This is a very surprising fact, considering that according to the available data, 774 beneficiaries under 40 years of age with a total amount of 203908956.96 EUR and an investment value of 304257643.20 HRK [18]. On closer inspection, this is not so surprising when you consider that our respondents were young farmers who mostly applied for tenders with 100% co-financing because they do not have sufficient financial resources of their own and are intended more for farms of a larger economic size.

It should be said that all respondents in our survey have used some of the financial measures available to them in Croatia.

Most respondents, however, list similar key problems with the measures, including the lack of adequate and timely information, followed by bureaucracy and lack of time to deal with it:

> "…the biggest problem in my opinion, to be honest, is the paying agencies, because we don't usually get any concrete information from them. And when tenders are issued, all you get is information about whether something is right, whether it's wrong, whether you can apply or not. And the other thing that comes from the agency is that payment and checks take a very long time at this state level. At the local level, through the LAG, everything is much quicker and easier than at the state level. That's where we have the biggest problems." (M, 31, Primorje-Gorski Kotar county (I3))

> "…Disadvantages. Bureaucracy, small subsidies. You never know how much money you will get and when it will be paid out, weather disasters (hail, drought), no irrigation, lack of land, small plots, labor." (M, 32, Virovitica-Podravina county)

> "I believe that many people, young and old, give up farming for this very reason. It's quite difficult to understand everything. I have now teamed up with a few young farmers so that we can each explore one area. Because I would hardly be able to research everything myself. Now, each of us is pursuing a measure and we report back to each other. It's really hard to keep track of everything. There's a lot of administrative work that you don't have time for." (F, 35, Koprivnica-Križevci county)

> "When we need paperwork, we have no one to turn to for advice. Even our County counseling offices are not very good at giving advice." (M, 31, Primorje-Gorski Kotar county (I4))

3.3.3 Plans for future development of farms

The vast majority of respondents plan to expand existing agricultural production through some of the available measures and to expand their agribusiness activities. They believe that such measures are necessary and very helpful, which is evident from their statements:

> "…these are very useful funds that are of great help to today's young farmer, and not just the young. I think that without them our agricultural holding would hardly exist at all, because we were just thinking about closing it down." (F, 35, Koprivnica-Križevci county)

> "We started with this measure 6.2.1. We turned to tourism and saw it as an opportunity to maybe make money in an easier way (laughs) and survive in agriculture, so maybe we will reduce the volume of pure agricultural production and market our products at home in our own tourist facilities. That will be through a tasting room, in the form of a kind of rural household serving food, we will see." (F, 35, Koprivnica-Križevci county)

> "…I will continue to work on this. I see my future in it, because this time I didn't start from scratch, I already have something, now it's already a circle that has turned a little. I plan to enlarge it a little. I am going to change it and buy a special vehicle to transport the hives. So, I would go a bit, a bit further, if I had different types of honey. The other plan is to expand into tourism. So, I would have an apartment that's really set up like a classic apartment, and a couple of units that are rural style, so to speak. Wooden, wooden, stone buildings, etc. Placement, I hope, placement on my own, on my own farm." (M, 31, Primorje-Gorski Kotar county (I3))

> "…we have decided to join forces and we have founded the API Kvarner agricultural cooperative, where we are, where we want our family farm to be raised to an even higher level, because the family farm, through the family farm we are perhaps less able to sell our own product, and so with, with the association we can achieve higher price and market the product better. We have leased a building from the town of Novi Vinodolski for forty years, where, where, where we will set it up. Through the measure of 16.4.1, there will be a store for domestic products in this sales room, where we will market our honey and honey products, a tasting room with up to seventy seats, where we will present the same honey to customers or tourists." (M, 31, Primorje-Gorski Kotar county (I4))

> "That. Well, I see the future. Now the family farm is developing. Every year I increase the hectares and plant, and now I have withdrawn some of the money, so I think we will finish the project, and my goal is twenty hectares. Five hectares of walnut trees and fifteen of arable land." (M, 32, Virovitica-Podravina county)

> "In the next round, we will focus more on animal welfare. For example, we plan to install tires in the barn. This means that we will enrich the bedding and reduce the number of cattle in order to increase the floor area by ten percent. In this way, we will use

measure 14 of the Rural Development Program to promote animal welfare." (F, 36, Koprivnica-Križevci county)

4 Discussion

Karas [23] points out in her study that around 25% of respondents apply for one of the financial measures, be it EU or state funding. Most participants stated that they never applied because the information was insufficient, the application was complicated, there was too much paperwork, or they did not even know there was a competition [23]. Although 100% of respondents in our survey took up some financial measure that was available to them in Croatia (this could be due to the convenient sampling and the way respondents were recruited for the interviews through the LAGs, which generally encourage and support their members in applying for the measures), these issues are consistent with our research.

Although a total of 13,424 young farmers in Croatia were supported by the payments for young farmers in the period from 2015 to 2020 and further funding of EUR 7,488,342 is planned, there are still problems with the application process and paperwork. In the analyzed CAP and RDP 2014–2020, it is certainly positive that priority is given to young farmers and that the creation of conditions for sustainable income and development and the resilience of farms on the market is promoted, with the corresponding improvement of the position of farmers in the food supply chain. It is also good that climate change, biodiversity, energy, and the socio-economic development of rural areas through agriculture are taken into account. This is probably why all respondents, when thinking about the future development of their farms, are positive about the measures and plan to continue using them for their farms and agribusiness.

However, the remaining challenges should be considered for future RDP, especially since they are recognized by the young farmers themselves and are consistent in this and other similar studies. All respondents in our survey, which is in accordance with the existing literature [24–26,22,27], emphasize the problem of information, application process, and document collection and submission. In the age of booming digital technologies, it is incomprehensible that information is not verified, not reliable, and not available in a timely manner. Looking at the problem of paperwork, it is clear that the average young farmer does not have sufficient skills and knowledge to write complex reports, and looking at the current situation, it is clear that there are no opportunities for education or training in this direction. The current practice is unsustainable, especially when you consider how small a proportion of farmers actually apply for the tenders and the problems they face.

In their study, Dwyer *et al.* [22] concluded that bureaucracy and costs associated with accessing aid for young farmers have positive and negative impacts. Some of the cited authors in the mentioned study judged bureaucracy positively as it discouraged less entrepreneurial farmers and taught new skills to those who persevered. But in our opinion, there are main more negative effects like the fact excessive administration and strict requirements can be (and often are) a barrier to farmers accessing support [22]. If young farmers have problems accessing support, there will also be problems in improving rural vitality in marginal rural areas with economic and demographic decline, poor infrastructure and services, low economic diversification, and low value-added in agriculture and forestry [22].

Creating an environment where committed young farmers can access productive assets and thus improve the competitiveness of the agricultural sector is crucial. While accountants, lawyers, and financial advisors play an important role in this process, the complex human dynamics that influence and hinder the decision-making process of the older generation (Conway *et al.*, 2016; 2017; 2018) suggest that policymakers and practitioners should avoid the often implicit assumption that financial incentives and the presence of an enthusiastic potential successor are all that is required for a successful generational transition [2]. These ingredients are undoubtedly important, but it is equally critical that these practitioners are well informed and aware that the extent of effective generational transition planning is highly dependent on the acceptance and willingness of the older generation to engage with the process [2].

The advantages of a farming as a profession our respondents list: better quality of life, they are their own boss and have strong work motivation and job satisfaction. In her survey of 183 young farmers in three NUTS2 regions of the Republic of Croatia (excluding Adriatic Croatia), Karas [23] showed that the participants had similar views on the advantages and benefits of farming as a profession as in our survey. "The results of the survey show that most young farmers are engaged in agriculture because they continue the family tradition, i.e., they continue the family business, which means that they work on an already existing farm and see it as a source of self-employment. Considering that the majority of respondents live in rural areas and work in agriculture, the next motive for young people to work in agriculture is precisely the love of farming and life in the countryside" [23].

It is interesting that the advantages mentioned by Pupak and Poljak [28] are also completely identical to the results of our study (which is not the case with the disadvantages). "All respondents recommend living in the countryside to the younger generation or their children. They believe that this way of life has many more advantages compared to life in the city, especially in terms of long-term health and quality of life working in nature, independent determination of working hours, the versatility of agriculture and the possibility of progress" [28].

As for the disadvantages of farming as a profession, our respondents list financial insecurity, insufficient labor, high dependence on climate change, and problems related to land. Zagata and Sutherland [5] argue in their paper that the problem of young farmers is not a single problem, but a mixture of several regionally different problems, which are also related to the differences between the various farm types and the differences between successor farms and new entrants. The authors claim that countries with predominantly small farms are more likely to face the problem of aging farmers, while countries with a less fragmented agricultural structure have more young farmers, emphasizing that the new EU member states are also more likely to face the problem of generational renewal.

The problem of access to land is also highlighted by Kovách *et al.* [7] in a study conducted in Hungary, where they find that the concentration of land ownership and land use is a strong barrier to new generations' access to arable land, but this can be a structural driver for sustainable development. The response of young farmers to land scarcity has in many cases been a complete or partial conversion to intensive production and alternative forms of agriculture.

Young farmers, in addition to developing their own farms by applying for various measures, are expected to be most involved in planning local development strategies through the LEADER intervention (including the concept of smart villages), which will be the starting point for the development of rural communities in the coming programming period and will ensure progress in the provision of services in rural areas according to the needs of the local population [1]. The Ministry of Agriculture points out that the focus is on increasing the proportion of young farmers in the 25–34 age group and their potential for training and technical efficiency. This is certainly associated with favorable opportunities as more funding is available for young farmers and young farmers are utilizing more and more resources due to their adaptability and training ability.

The main deficits, such as the high proportion of leased agricultural land, the low production potential, the concentration on low-value agricultural crops, and the difficult access to information, should certainly be highlighted here. Problems such as the negative perception of agriculture among young people and the negative demographic development in rural areas are certainly the biggest threats to the further development and future of agriculture in the Republic of Croatia [18].

It is interesting to note that the work of Pupak and Poljak [28], which focused on young farmers in Bjelovar-Bilogora and Požega-Slavonia counties in the Republic of Croatia, provides insights into problems such as transportation and municipal infrastructure faced by young farmers that were not mentioned by the respondents in our study.

5 Conclusion

During the implementation of the RDP of the Republic of Croatia for the period 2014 to 2020, many opportunities have opened up for young farmers. Particular attention was paid to improving the age and educational structure and increasing gender equality through RDP measures. The analyzed statistical data show that the proportion of women owning a farm has remained almost unchanged when comparing the period during (2016) and after the implementation of the RDP measures (2021), and is around 30%. However, there have been significant changes for the better in the age and education structure of farm owners. In almost all 20 Croatian counties, the number of farm owners under the age of 41 has increased and the level of education has also risen accordingly. It is interesting to note that the proportion of uneducated farm owners and those who have only completed primary school has decreased, while the largest increase has been among those who have completed secondary school. These trends are indeed a positive result of the implementation of the RDP 2014–2020 in Croatia.

The analysis of the conducted interviews is in accordance with the existing literature and shows that the advantages of farming as a profession are shared by most young farmers: flexible working hours, being your own boss, having strong work motivation, better quality of life, ability to organize your own time, etc., while the disadvantages are more individual in nature: problems with the weather, fragmentation of the land, insufficient and inadequate information, finding labor, instability of the market and product prices, etc. It turns out that most farm owners have chosen this type of work because it offers decent working conditions and job satisfaction. As for the negative aspects, there is a common problem of a financial nature. In terms of government measures, it is

clear that almost all respondents struggle with problems such as lack of information, excessive paperwork, and lack of time for preparing the applications. Although these issues were not addressed in the RDP, respondents still plan to expand existing agricultural production through some of the available measures.

Ultimately, it can be said that the RDP 2014–2020 measures in Croatia have brought the desired positive results, which are not short-lived, and it remains to be seen how this will develop further. It is an undeniable fact that agriculture is very important and that there is much room for further development in the context of increasing competitiveness in the market, as young farmers themselves recognize. Future research would benefit from a larger interview sample of young farm owners as well as a more comprehensive protocol that would provide a more detailed insight into their everyday experiences and challenges. Furthermore, collected qualitative data can be used for designing a questionnaire and collecting data on a larger representative sample to gain more detailed insights into this complex interdisciplinary problem.

Although a very small sample of respondents was used for this research and no general conclusions can be drawn from it, the data obtained is in line with other similar research in Croatia. An insight into the main problem of young farmers was obtained, which can serve policymakers to make improvements in the future program period. The results can also serve as a starting point for the design of new research that will provide a more detailed insight into the topic, which is very current and important if we want to have a safe food supply and vital rural areas.

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