

Wishes versus Capacities: Organic Farmers and Potential for Cooperation

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Summary

The aim of this research was to identify the potential for cooperation and association among organic farmers. We measured the level of trust of organic farmers towards different social groups, their collaboration experience and their willingness to associate. We conducted the survey in six counties of North-Western Croatia on a sample of 77 organic farms, using the structured and personal interview survey method. The results showed that organic farmers generally have no formal agricultural education and that they gain most of their specialised knowledge through informal training. Although most of them cooperate with other organic farmers, their cooperation is based only on the exchange of experience in production. They show a low level of trust in key agricultural services and institutions as well as towards people in general, but nevertheless, they want to cooperate with other organic farmers. Furthermore, the results show that the desire for mutual cooperation of organic farmers is related to good cooperation and a higher level of trust in local government and other organic farmers. The survey also highlights the many obstacles faced by organic farmers that can be overcome by coordinating institutional logistic support, which would increase the prospects for their association and business networking, and thus facilitate a more prosperous development of organic production.

Key words

organic farmers, level of trust, willingness to associate, cooperation

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Introduction

A continuous increase of organic agriculture in Croatia, both in number of farmers and cultivated area, leads to the conclusion that it is a prosperous type of agricultural production. Namely, in the period from 2013 to 2018¹, the number of organic producers as well as the size of utilised agricultural area used for organic production increased by 25% annually on average. In the last 11 years (2007-2018), however, the areas² grew 13.6 times³, the share of organic farming in total production grew 10 times, while the number of farms grew nine times.

Presented figures suggest that organic agriculture is growing in Croatia and this article aims to furthering our knowledge about this growth by examining whether organic agriculture is developing as well. The issue of development includes many aspects, but here we will focus our attention on farmers' association which is one of the most successful and sometimes the only way of survival for small and especially organic farms on the market (Darnhofer, 2005; FAO, 2013, Freyer et al., 2015; Willer et al., 2016).

Association and cooperation among farmers do not happen by chance alone, on the contrary there are numerous preconditions for their appearance. Association and cooperation depend primarily on trust, which is a basic measure of social capital. In our research, we measured generalised trust as well as trust towards different social groups and institutions among of organic farmers. Additionally, we measured the successfulness of their previous cooperation with relevant actors in their environment and tested if there are differences in trust and successfulness of cooperation between organic farmers that wish to and those who do not cooperate further. Furthermore, we have determined how organic farmers cooperate with each other. Finally, the aim was to find out what difficulties organic farmers are faced with in agricultural production and sales.

Theoretical Framework

The last two decades have seen an intensive debate in Europe about redefining the role of agriculture. There is a consensus that agriculture should no longer be equated with the production of raw materials for food industry alone, but that it should contribute to rural development through its multifunctional roles as well. Moreover, "organic farming is sometimes seen as a panacea for addressing the environmental, animal welfare and food safety

¹ The statistical data for 2007-2017 were obtained from the Paying Agency for Agriculture, Fisheries and Rural Development (PAAFRD). The data for 2018 were taken from the website of the Croatian Bureau of Statistics

² According to the data of the Ministry of Agriculture (2019), from 2007 to 2017 (and of the CBS for 2018) the area under organic cultivation grew from 7,577 ha to 103.166 ha, while the share grew from 0.63 to 6.46% area under organic cultivation in the total utilized agricultural area. More specifically, area of arable land and orchards grew 15 times, olive groves more than 20, vineyards 13, meadows and pastures 12 times, vegetables 4 times, medicinal plants 24 times, while the number of farms with plant production grew 8.5 times. During the same period, some livestock organic production increased while other decreased. Therefore, the number of heads of bovine animals increased six times, ungulate 14 times, sheep 8.5 times, pigs three times, and aquaculture products (t) 4.5 times, while the number of goats decreased (by almost 4%), poultry (by 25%), hives (by 36.5%) and rabbits (by 94%)

³ The number of 4,374 producers should be increased for the number of those registered as organic agricultural producers in 2019, which makes a total of 5,480 (as on 25th September 2019, PAAFRD, 2019), out of which 4,971 have applied for Measure 11 (organic farming)

concerns driving CAP⁴ adjustments", especially so, as there is often a perceived link "between organic farming, on-farm processing and direct marketing, and the potential contribution of short food supply chains to rural development" (Darnhofer, 2005: 308). One of the research questions is whether organic farms, in order to survive, resort to adapting to modern conventional agricultural models, which involves increasing the amounts produced while reducing costs, thus diverging from other rural activities. In other words, organic farming is becoming less distinct from conventional agriculture – "highly regulated and capital-intensive food industry differing little from its conventional counterparts" (Lockie and Halpin, 2005: 284). This conventionalization thesis implies that organic farming is losing the potential of paradigm shift⁵ in production of food and in rural development activities. Farms opting for this alternative approach are shifting goals from producing low-cost food to provision of public goods and services. Thus, they contribute to rural development practices by creating new forms of social cohesion, for example, cooperation between farms and both rural and urban populations, leads to diversification of farm and local economic activities, including agricultural and non-agricultural activities (Darnhofer, 2005). In this way, organic farms become a multifunctional agriculture that helps sustain the vitality of rural economy, environment and rural communities by making them synergistically connected (Marsden and Sonnino, 2008).

Although "organic farming is developing in distinct ways in different national contexts and one has to be cautious about drawing general conclusions", many developmental features are common to many countries (Hall and Mogyoródy, 2001; Knudsen et al., 2006: 30). Organic farmers face many obstacles in achieving undisturbed development, which are at the same time obstacles to contributing to rural development, where the development can be related to improving the quality of institutional support, networking among various social agents, availability of continuing education, access to information, market access and developing the capacity of organic farmers in general in order to become resilient within their local communities, as well as in the globalised market.

When organic production first started developing, the greatest problems that farmers faced were in the domain of technology of production, and research focused on soil, pests and plant diseases. With the evolution of organic production and growth of its international trade, the focus has shifted in recent times, revealing an increasing number of market related problems. For example, on the one hand, attempts are being made to harmonise the standards of organic production and trade aimed at facilitating the development of international trade, while on the other hand, there is a strong tendency towards domestic organic food sales

⁴ Common Agricultural Policy

⁵ There is a similar debate about the concept of rural development. On the one hand, rural development is considered to be a qualitatively different model from the modernisation model, while, on the other hand, it is considered part of (flexible) modernisation through mere development of multifunctionality and endogenous development (van der Ploeg and Renting, 2004; Goodman, 2004). "The difference lies in the categorisation of the new activities. If they represent a form of diversification, they can be considered as merely incidental add-ons to the farm business, just another activity to generate income. If they are part of rural development, they imply an integral restructuring of the farm, a fundamental readjustment where processes of change are causally linked" (Darnhofer, 2005: 310)

beneficial to local farmers (Wynen, 2003; Wynen, 2006). Some of the obstacles to the development of organic production related to technical, economic and social problems are similar for farmers throughout the world. In organic production practices, farmers often complain about a lack of knowledge in organic farming methods or the availability and effectiveness of organic plant protection products (Wynen, 2003; Wynen, 2006). Moreover, organic farms often require additional investments, in the initial transition period in particular.

Although on the global level, organic farming is growing at the rate of about 20 per cent annually, its development has been slowed down by many obstacles, most notably a lack of information and support from advisory services, farmers' negative attitudes towards organic farming, inadequate weed and pest management, declining yields, lack of organic farming plant protection products, lack of labour force, insufficient research and development, poor infrastructure, complications in standardising organic products, lack of information about existing standards and certifications, underdeveloped organic products market, lack of consumer awareness, price problems and inaccessibility of organic production cultivars (Padel et al., 2003; Reganold and Wachter, 2016; Nandwani and Nwosisi, 2016; Némethová et al., 2017; Jouzi et al., 2017). However, organic farmers' problems are not the same in all parts of the world. Some problems are more usual in developing countries, while others are typical for developed countries, with possible overlapping. Limitations most commonly encountered by organic farmers in developing countries are: insufficient technical knowledge (due to a small number of experts in the field), lack of organic production resources (compost, biopesticides, biofertilizers), shortage of research and development (on varieties and cultivation methods), transition methods causing low-yields, infrastructure deficiencies (transportation and storage), insufficient knowledge of the market and sales channels, labour shortage, non-compliance of products with existing standards, and a necessity to import foreign professional certification expertise in order to export products (Twarog and Vossenaar, 2003).

Furthermore, although the European Union (EU) has a highly developed organic farming on average and does not suffer from the problems of developing countries, other obstacles to the development are evident. According to a report of the International Federation of Organic Agriculture Movements (Willer et al., 2016), obstacles affecting further development of organic agriculture in the EU include disparity in priorities given to organic farming between member states⁶, inefficiency of organic supply chains, and higher production of raw materials with less developed processing as compared to conventional production. Low market transparency results in insufficient information available to manufacturers, customers and future investors. Research and literature on the obstacles and problems in organic farming in Croatia identified unorganized and underdeveloped market (Pejnović et al., 2012; Bošnjak, 2007), lack of willingness to associate among farmers and other people living in rural areas, underdeveloped communication and organizational skills necessary for cooperation among (organic) farmers and inadequate institutional support for small family farms (Obad and

Bokan, 2019) as the biggest problems.

Furthermore, research shows that knowledge management is crucial for the development of organic agriculture. High financial investment required for organic farming is partly compensated for by knowledge and information about consumer needs, potential processors and traders, certification institutions and policy makers (Schmid et al., 2009). In this way, (small) organic farmers can receive information, advice, education and financial support, especially during their transition to organic production. It is the very support that farmers receive from different stakeholders, such as competent institutions or associations and organic farmers' cooperatives, that is the most important factor in deciding to opt for organic farming (Panneerselvam et al., 2012). For instance, excellent cooperation based on trust with public bodies was particularly relevant for the processing and marketing of the wide range of organic products in Austria (Münchhausen et al., 2017).

Organic farming is deeply rooted in the concept of sustainable development due to the application of environmental and ethical principles. In scientific and political discourse, there is a consensus that social capital⁷ plays a key role in the development of agriculture (organic included) and sustainability of rural communities as it "facilitates the utilisation of material and immaterial resources through the creation of shared values and identities, inclusive networks, participatory governance structures and democratic decision-making mechanisms (Christoforou, 2017: 44). The development of social capital establishes social relationships and networks that provide conditions for an exchange of information and ideas, create potential business opportunities, provide economic, social and emotional support to an individual or community, facilitate collaboration and build trust (Woolcock and Narayan, 2000). The importance of social capital in rural development is confirmed by empirical research. Rivera et al. (2018) have cross-analysed seven case studies in Europe, finding that social capital, appearing in the form of trust, cooperation, sense of community, culture and tradition, plays a significant role in agricultural and rural development initiatives.

Trust-based social networks are dynamic, encourage and facilitate collaboration, and can lead to effective activities designed to achieve a common goal (Koutsou et al., 2014). In addition, research confirms that strong social cohesion and partnership within an organic farmers' community facilitate connections with institutions and market access (Knudsen et al., 2006; Scialabba and Hattam, 2002), which makes agricultural associations and cooperatives possibly the most valuable source of information and cooperation. Business collaboration through collectives enables organic farmers to build strong consumer relationships, organise local markets, benefit joint marketing activities and lower transaction costs, share new perspectives and innovative practices in organic production through exchange of knowledge and social learning, and leverage all social benefits (and values) that cooperative movement rests upon.

Since cooperation and association of farmers is a key prerequisite for the development of organic farming and its

⁷ Currently, there is no consensual definition of social capital. Although scholars adapt it to their respective disciplines and level of research, most see it as a multifaceted concept defining it as a "resource" composed of social networks, norms, values and trust, which contributes to achieving certain common goals (more on definitions and conceptualisation of social capital see Claridge, 2004)

⁶ For instance, subsidies funded from the Rural Development Programme for Remaining in and Transferring to Organic Production vary greatly, from 0.2% in Malta to 13.2% in Denmark (Willer et al., 2016)

market, measuring the level of social capital is necessary in order to determine the potential for the development of this type of production and its prosperity. It is for this reason that in this study we were interested in how developed two essential components of social capital are – trust and cooperation of organic farmers. We focused on trust⁸ and cooperation as key dimensions through which the social capital of organic farmers is mobilised (or can be mobilised), that is, we were interested in how much trust they have in others, how much they cooperate, and whether they want to cooperate with other farmers in the future.

Methodology

Data sources, sample and description of variables

The data were collected in six counties of North-Western Croatia on a convenience sample of 77 organic farms⁹. In the majority of counties, the sample covered 8% to 13% of the total number of organic farms, with an exception of Varaždin county where it included only 4%. A structured and personal interview survey was conducted with a prior consent for the researcher to visit the family farm. Participation in the survey was voluntary and anonymous. The questionnaire consisted of a total of 90 items measuring participants' socio-demographic characteristics, socio-economic characteristics of the household and the farm, motives for engaging in organic production, cooperation with organic farmers, the local community and relevant institutions, experience and desire for cooperation, trust in different groups of people and institutions, and channels for organic products trade and promotion. Most of the questions were closed-ended.

In this study, we have analysed three blocks of questions: the first block on education and ways of acquiring knowledge about organic farming; the second referred to the potential for collaboration, which included questions about trust and participants' experiences of working with other organic farmers and related actors, and a block of questions about the problems and challenges they face in practicing organic farming.

Data processing

We first performed the data processing at the descriptive level. Thereafter, using a t-test we tested if there are statistically significant differences in level of trust and cooperation successfulness between farmers who want and who do not want to cooperate with other organic farmers. The data analysis was carried out using the IBM SPSS Statistics 17 program package.

⁸ Trust is seen as a key component of social capital and can be built through interpersonal and institutional relationships. In social capital analysis, scholars distinguish personal trust, institutional trust and generalised trust. "Generalised trust refers to trust in people who are not known to the participant or to trust in situations where the person being trusted is not specified" (OECD Guidelines on Measuring Trust, p. 43). In our study we have not explored trust in multi-perspective approach since we used only a simple measure of generalized trust

⁹ The survey was conducted as part of a broader survey on organic farmers within the project of the Institute for Agricultural Economics and Rural Development entitled "Socioeconomic Aspects of Organic Agriculture" conducted in 2014 and 2015. Lists of organic producers with addresses and telephone numbers were obtained from the Ministry of Agriculture and the Paying Agency for Agriculture, Fisheries and Rural Development

Participants

The data were obtained from 77 organic farmers in Croatia. Roughly two thirds of participants were males ($f = 50$; 65%) and one third were females ($f = 27$; 35%). Most of the participants, 77%, were aged from 40 to 60 ($f = 55$; 71%), while the rest were younger than 40 ($f = 15$; 20%) or older than 60 years of age ($f = 7$; 9%). The participants reported their highest level of education mostly as high school ($f = 51$; 66%). The farmland of the participants in our study was most frequently less than 3ha ($f = 24$; 31%) or bigger than 10ha ($f = 22$; 29%). Roughly one fifth of the participants had farmland sized from 3 to 5ha ($f = 17$; 22%) and from 5 to 10ha ($f = 14$; 18%).

The agricultural land size used for organic production was equally divided among the participants in the following categories – less than 1ha ($f = 21$; 27%); from 1.1 to 3ha ($f = 21$; 27%), and from 3.1 to 10ha ($f = 21$; 27%). The rest of the participants ($f = 14$; 18%) used 10.39 to 40ha for organic farming. The participants' county of origin is shown in Table 1.

Table 1. Frequency and proportion of participants by county of origin

County of origin	<i>f</i>	%
City of Zagreb	22	29
Zagreb county	17	22
Krapina-Zagorje county	10	13
Bjelovar-Bilogora county	15	19
Varaždin county	3	4
Koprivnica-Križevci county	10	13
Total	77	100%

Results and discussion

Education

Results regarding participants' agricultural education showed that most of the participants have no formal education in agriculture ($f = 56$; 73%). Those who do have formal agricultural education identified it as university ($f = 6$) or high school education ($f = 4$), while the rest attended courses in agriculture ($f = 11$).

In regard to education in organic farming, participants reported various sources of knowledge with on-line sources ($f = 47$; 61%) and professional journals ($f = 43$; 56%) being the most frequent. At the same time, only 40% of them acquire knowledge in organised courses and workshops, as well as through advisory services. The data show that the majority of today's organic farmers have professional backgrounds other than agriculture. In general, there are no formal educational requirements prescribed for engaging in organic production, therefore most of expert knowledge among organic producers is acquired through informal forms of learning, which is confirmed by our research. Moreover, this clearly demonstrates a great role of informal forms of education, gathering information and knowledge acquisition such as online sources on the one hand, and competent (organic) agriculture services on the other. This, however, may be indicative of the

problem of insufficient number and availability of educational activities for organic farmers, especially since the lack of education is identified as one of the major developmental constraints on organic agriculture in Croatia (BBŽ, 2011; MAFRD, 2011).

Table 2. Frequency and proportion of different sources of organic farming knowledge

Sources of organic farming knowledge	<i>f</i>	%
On-line sources	47	61
Professional journals	43	56
Agricultural advisory services ¹⁰	31	40
Professional workshops and lectures	31	40
Parents	24	31
Institutions	17	22
Colleagues	11	14
University	7	9
Personal experience	4	5

Note: For every source of knowledge participants answered with yes or no

Potential for cooperation among organic farmers in Croatia

In today's age of growing competitiveness on the food market, cooperation and partnership is one of the most important factors for the development of local organic economies and integration of organic farmers in the food supply chain. Therefore, in the study we investigated whether there is cooperation among organic farmers and which domains they cooperate in. First of all, most of them reported they are interested in cooperation with other organic farmers ($f = 63$; 85%). At the time of the study only about one third of participants knew many other organic farmers ($f = 27$; 35%), more than half knew a few ($f = 42$; 55%), while seven participants (10%) did not know any other organic farmers. Most of the participants had some experience in cooperating with other organic farmers, primarily through exchange of experience ($f = 29$; 63%), and less frequently through trade or exchange of products ($f = 10$; 21%), or through farmers' associations, when applying to calls or while participating in fairs ($f = 6$; 13%). Only one participant cooperated with others through lending mechanisation. However, from the results it can be concluded that there is no "solid" cooperation (rather, it is occasional cooperation) that would contribute to a joint promotion and sale of products, facilitate the exchange of organic farming related information and practical knowledge, as well as procurement of necessary products. Of those who had experience in cooperation with other organic farmers, 87% said they would like to cooperate with them again in the future.

In the light of the aforementioned it comes as no surprise that there is a rather small proportion of the participants who volunteer ($f = 17$; 23%) or participate in local community projects. A little less than half of the participants reported that they are members

¹⁰ Today it is part of the Ministry of Agriculture and is named Administration for Professional Support to the Development of Agriculture and Fisheries

of various non-governmental organisations ($f = 34$; 45%), out of which the majority ($f = 27$; 75%) are members of agricultural or environmental associations, while others are members of local cultural, hunting or volunteer associations. Poor engagement of organic farmers in local initiatives and work for the common good could be closely linked to a lack of skills for interpersonal communication which can make it difficult for them to work together and cooperate as partners.

Level of trust and experience of cooperation in relation to the wish to cooperate further

The most common measure of generalised trust is summed in the question whether one thinks people can generally be trusted or that a person can never be cautious enough. Our participants show very low level of generalised trust in people. When asked to choose between these two options, only a quarter of them chose the response that people could be trusted ($f = 20$; 26%), while a large majority chose the other response - that a person can never be cautious enough ($f = 56$; 74%). The low level of generalised trust in people can affect their desire for association (Putnam, 1993). Furthermore, the participants reported on their level of trust in relevant actors in their environment. Table 3 shows that they have the highest level of trust in other organic farmers and agricultural advisory service. The data show that organic farmers have more trust in advisory service than the Paying Agency, and least in local government (Table 3). Low level of trust in local government is a significantly aggravating factor in the potential association of farmers, especially since trust in local government is related to desire for cooperation, as shown in Table 4.

Table 3. Descriptive statistics for level of trust

Level of trust in ...	<i>n</i>	<i>M</i>	<i>SD</i>
Organic farmers	74	3,04	0,84
Agricultural advisory service	70	3,03	0,87
Paying Agency for Agriculture, Fisheries and Rural Development	69	2,77	0,97
Local government	71	2,06	0,88

Note: For each question participants could answer selecting a number that best describes their level of trust, from 1 (I do not trust them at all) to 4 (I trust them completely)

To test the differences in the trust level between the participants who wish to cooperate with other organic farmers and those who do not, a series of t-tests were conducted. Results presented in Table 4 show that those who wish to cooperate have higher trust in other organic farmers and local government in comparison to those who do not want to cooperate, while other differences are not significant.

While the relation between trust and the desire to cooperate with other organic farmers is logical and expected, differences in trust toward local government make this result important. On the one hand, this shows that the participants recognise the importance of the local government's role and their support in lobbying, coordinating and connecting with relevant stakeholders

Table 4. Differences in level of trust between participants who wish to cooperate with other organic farmers and those who do not

<i>Trust in ...</i>		<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Organic farmers	No	11	2,18	0,87	-4,06	,000
	Yes	61	3,20	0,75		
Local government	No	11	1,55	0,82	-2,23	,029
	Yes	58	2,17	0,86		
Agricultural advisory service	No	11	2,73	0,91	-1,25	,214
	Yes	58	3,09	0,86		
Paying Agency for Agriculture, Fisheries and Rural Development	No	10	2,30	1,16	-1,65	,105
	Yes	58	2,84	0,93		

at the local, regional and national levels. On the other hand, we can assume the low level of trust in local government is a consequence of the prevailing narrow political and economic interests of local government (Žutinić and Zrakić, 2018), which limits the actual impact of organic farmers on the development of organic farming. In addition, the lack of trust in local government also points to the fact that it is rather unlikely that we will see vibrant rural development activities (such as association) in the local communities, and a flourishing of cooperation and partnership any time soon. However, it should be noted that there is considerable difference in group sizes, thus these results should be interpreted with caution.

The participants also reported on the level of successfulness of their cooperation with relevant actors in their environment. Table 5 shows that the highest level of success is reported for cooperation with buyers and other organic farmers, while cooperation with the Ministry of Agriculture and local government was rated least successful. These data support previous findings on trust. The lowest rating was given to successfulness of cooperation with local government, indicating multidimensional problems in their relationship. Further (preferably qualitative) research on the reasons for such a situation is needed to identify the causes of low trust and poor cooperation, and consequently low social capital.

Table 5. Descriptive statistics for level of successfulness of cooperation

<i>Level of successfulness of cooperation with...</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Buyers of their organic products	59	8,22	2,12
Organic farmers	65	7,48	2,39
Agricultural advisory service	70	7,14	2,69
Paying agency for agriculture, fisheries and rural development	68	6,56	2,84
Ministry of agriculture	64	5,69	2,81
Local government	66	5,44	2,45

Note: For each question participants could answer selecting the number that describes the successfulness level of their cooperation from 1 (bad) to 10 (excellent)

Such information could encourage local communities, including local government, as well as other institutions and agents, to take action to improve such, somewhat deteriorated, relationships.

For the level of cooperation successfulness, we also tested differences between participants who wish to cooperate with other organic farmers and those who do not want, using a series of t-tests. As with the level of trust, results have shown that those who wish to cooperate with other organic farmers had more successful cooperation with local authorities and other organic farmers. Again, these results should be interpreted with caution due to considerable differences in group sizes. These results indicate that the experience of successful cooperation with other organic farmers and local government is encouraging for continuation as well as for expansion of cooperation among organic farmers. The question remains why the success of cooperation did not prove statistically significant in the case of advisory services, the line ministry or Paying Agency.

Challenges and problems

According to experts, organic agriculture in Croatia faces many problems including complex rulebooks and procedures for certification of organic products, an underdeveloped market and poor consumer awareness, poor organic producers' organisation and a lack of institutional forms of information and education on organic production (MAFRD, 2011). At the same time, there is almost no research addressing problems related to organic production from the perspective of the producers, with a particular lack of qualitative research. Studies in other countries show that the problems faced by organic farmers are numerous and diverse (Némethová et al., 2017; Jouzi et al., 2017; Reganold and Wachter, 2016; Nandwani and Nwosisi, 2016; Wynen, 2006; Wynen, 2006; 2003; Padel et al., 2003; Twarog and Vossenaar, 2003).

Our participants were asked to list the biggest problems and challenges that they encounter in organic farming. Their answers were summarised in several categories. The majority of problems mentioned by farmers were threats to yield such as wild animals, parasites, diseases and weeds ($f = 26$; 36%) as well as challenges with placement and price of their products ($f = 20$; 27%), which points to an underdeveloped and poorly organised market. Some of them mentioned problems with administration and law ($f = 10$; 14%), and misunderstandings with neighbours (8%). When

Table 6. Differences in level of cooperation successfulness between participants who wish to cooperate with other organic farmers and those who do not want

<i>Successfulness of cooperation with...</i>		<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Buyers of their organic products	No	9	7,22	2,949	-1,50	,138
	Yes	49	8,37	1,922		
Organic farmers	No	10	5,20	2,86	-3,65	,001
	Yes	54	7,94	2,05		
Agricultural advisory service	No	10	6,20	3,553	-1,02	,330
	Yes	58	7,40	2,513		
Paying agency for agriculture, fisheries and rural development	No	10	6,10	3,446	-0,67	,507
	Yes	56	6,75	2,725		
Ministry of agriculture	No	10	5,30	3,466	-0,48	,632
	Yes	53	5,77	2,729		
Local government	No	10	3,60	2,066	-2,73	,008
	Yes	55	5,80	2,391		

asked an open-ended question about the problems in organic products sales, participants prevalently indicated the problem of getting the right price for their product, which they explained with a generally low standard of living, but also poor consumer awareness of the advantages of organic products. Organic farmers are more likely to face this problem in smaller communities where there is no demand for organic products, while larger markets such as Zagreb (or other major cities) are largely inaccessible to them because of the additional costs related to transportation and sales organisation. In addition, participants mentioned unfair trading practices, such as blackmailing by traders, paying the lowest price, or extensive deferred payments, which are typical of organic farmers in other developing countries (Twarog and Vossenaar, 2003; Willer et al., 2016).

All the problems listed undoubtedly indicate that there are considerable developmental challenges in organic farming in Croatia hidden behind the growing figures. We suggest they could be avoided or at least minimised through strengthening the capacities for cooperation among organic producers, which would help in encouraging farmers and other related stakeholders towards networking and partnership. However, it is interesting that organic farmers from this study, when asked about problems, did not mention lack of cooperation or cooperatives among organic farmers. It could indicate a very low recognition of how important farmers' cooperatives and cooperation itself are for organic producers, let alone consumers or local economies altogether.

There is an array of studies confirming the long-term, business partnerships founded on trust are a fundamental for values-based food chains¹¹ (e.g. organic food chain), and some recent ones point to the fact that the way partnerships are organized and managed produces the trust in the chain (or not) (Lamine and Noe, 2017, Münchhausen et al., 2017). Some of the issues recently explored

¹¹ „...a particular form of supply chain distinguished by transparent and long-term business relationships based on shared values such as trust, transparent decision-making, communication, and a commitment to furthering equity among all supply chain participants“ (Ostrom et al., 2017b:5)

address the dynamics within values-oriented organic food chains and changes in long term relationships between producers and consumers (Ostrom et al., 2017a), how can values-based food chains improve the local and sustainable food systems (Stahlbrand, 2017) or how values like trust can be stimulated and maintained in growing organic market (Ostrom et al., 2017b). Hence, exploring the trust became much more complex and sophisticated in the last years posing a need for new and multi-perspective approaches. The plethora of research findings and experiences show that those approaches started to accept as common knowledge the fact that growing trust in food supply chain presents an added-value which can transform the usual food supply chain by increasing organic values as well as volume capacity to become higher quality food supply chain.

Conclusion

The developments of organic farming largely depend on logistic support and social networking, and on information, education and institutional support in particular. In this study we have attempted to explore some aspects of the potential for the development of organic agriculture in Croatia. The main challenges that organic farmers are facing are gaining specialised knowledge and the development of partnership and cooperation. The analysis has shown that organic farmers want to associate and cooperate with each other. However, there are obstacles to farmers' cooperation which could be overcome if the logistic support of relevant institutions in the field of organic agriculture was coordinated. Such support is especially needed in contexts where there is a desire for cooperation, but also a lack of knowledge and tools to achieve it. Finally, regarding further research, especially in Croatia's growing organic sector, we see the need to expand and deepen the research of trust and social capital as a whole and its role in organic (and other) supply food chains with multi-perspective qualitative as well as quantitative approaches. Research questions of such studies about trust should tackle the local contexts and multitude of actors within and beyond the food supply chain.

References

- Bjelovarsko-bilogorska županija (2011). Razvojna strategija Bjelovarsko-bilogorske županije 2011.-2013. Bjelovar, Croatia. Available at: <http://rerabbz.hr/images/dokumenti/926/strategija-bbz-2011-2013.pdf> [Accessed 15th 10. 2019].
- Bošnjak K. (2007). Factors of Successfulness of the Organic Food Placement on Croatian market. Master Thesis. University of Zagreb, Faculty of Economics and Business, Zagreb (in Croatian)
- Christoforou A. (2017). Social capital and local development in European rural areas: theory and empirics. In: Social Capital and Local Development (Pisani E., Franceschetti G., Secco L., Christoforou A., eds), Palgrave Macmillan, Cham, pp. 43-60
- Claridge T. (2004). Social Capital and Natural Resource Management: An Important Role for Social Capital? PhD. University of Queensland, Brisbane, Australia. Available at: <https://www.socialcapitalresearch.com/literature/introduction-social-capital-research/> [Accessed 15th 09. 2019].
- Croatian Bureau of Statistics (2019). CBS Database. Zagreb, Croatia. Available at: <https://www.dzs.hr/> [Accessed 10th 10. 2019].
- Darnhofer I. (2005). Organic farming and rural development: some evidence from Austria. *Sociol Rural* 45 (4): 308-323. doi: <https://doi.org/10.1111/j.1467-9523.2005.00307.x>
- Food and Agriculture Organization of the United Nations (2013). Organic Supply Chains for Small Farmer Income Generation in Developing Countries: Case Studies in India, Thailand, Brazil, Hungary and Africa. Rome, Italy. Available at: <http://www.fao.org/3/i3122e/i3122e.pdf> [Accessed 10th 10. 2019].
- Freyer B., Bingen J., Klimek M. (2015). Ethics in the organic movement. In: Re-Thinking Organic Food and Farming in a Changing World (Freyer B., Bingen J., eds), Springer, Dordrecht, Netherlands.
- Goodman D. (2004). Rural Europe redux? Reflections on alternative agro-food networks and paradigm change. *Sociol Rural* 44 (1): 3-16. doi: <https://doi.org/10.1111/j.1467-9523.2004.00258.x>
- Hall A., Mogyoródy V. (2001). Organic farmers in Ontario: an examination of the conventionalization argument. *Sociol Rural* 41 (4): 399-422. doi: [10.1111/1467-9523.00191](https://doi.org/10.1111/1467-9523.00191)
- International Federation of Organic Agriculture Movements (2015). Organic Cooperative Approaches to Rural Development. Brussels, Belgium. Available at: https://www.ifoam-eu.org/sites/default/files/organic_cooperative_approaches_rdp_stakeholder_guide_201506.pdf [Accessed 15th 10. 2019].
- Jouzi Z., Azadi H., Taheri F., Zarafshani K., Gebrehiwot K., Van Passel S., Lebailly P. (2017). Organic farming and small-scale farmers: main opportunities and challenges. *Ecol Econ*, 132: 144-154. doi: <https://doi.org/10.1016/j.ecolecon.2016.10.016>
- Knudsen M. T., Halberg N., Olesen J. E., Byrne J., Iyer V., Toly N. (2006). Global trends in agriculture and food systems. In: Global Development of Organic Agriculture: Challenges and Prospects (Halberg N., Alrøe H. F., Trydeman M., Knudsen, Kristensen E. S., eds), Danish Research Centre for Organic Food and Farming, Tjele, Denmark, pp. 1-48
- Koutsou S., Partalidou M., Ragkos A. (2014). Young farmers' social capital in Greece: trust levels and collective actions. *J Rural Stud* 34: 204-211. doi: [10.1016/j.jrurstud.2014.02.002](https://doi.org/10.1016/j.jrurstud.2014.02.002)
- Lamine C., Noe E. B. (2017). Values and volume in sustainable organic market chains: A multi-perspectival analysis. *Int J Sociol Agr Food* 24 (1): 15-36
- Lockie S., Halpin D. (2005). The 'conventionalisation' thesis reconsidered: structural and ideological transformation of Australian organic agriculture. *Sociol Rural* 45 (4): 284-307. doi: <https://doi.org/10.1111/j.1467-9523.2005.00306.x>
- Marsden T., Sonnino R. (2008). Rural development and the regional state: denying multifunctional agriculture in the UK. *J Rural Stud* 24 (4): 422-431. doi: <https://doi.org/10.1016/j.jrurstud.2008.04.001>
- Ministry of Agriculture (2019). Popis subjekata u ekološkoj poljoprivredi. Zagreb, Hrvatska. Available at: <https://poljoprivreda.gov.hr/ekoloska/199> [Accessed 20th 10. 2019].
- Ministry of Agriculture, Fisheries and Rural Development (2011). Agenda for Organic Farming Development in Republic of Croatia for the period 2011-2016, Zagreb, Croatia, pp. 21-34 (in Croatian) Available at: http://www.azrri.hr/fileadmin/dokumenti-download/akcijski_plan_razvoja_ekolo%c5%a0ke_poljoprivrede_za_razdoblje_2011-2016.pdf [Accessed 15th 10. 2019].
- Münchhausen S., Häring A. M., Kvam G., Knickel K. (2017). It's not always about growth! Development dynamics and management in food businesses and chains. *Int J Sociol Agr Food* 24 (1): 37-55
- Nandwani D., Nwosisi S. (2016). Global trends in Organic Agriculture. In: Organic Farming for Sustainable Agriculture (Nandwani D., ed), Springer, Switzerland, pp. 1-35
- Némethová J., Dubcová A., Nagyová L., Kramáreková H. (2017). Ecological farming in Slovakia and its regional disparities. *Eur Countrys* 9 (4): 746-768. doi: [10.1515/euco-2017-0042](https://doi.org/10.1515/euco-2017-0042)
- Obad O., Bokan N. (2019). Cross to star to fist: prospects for emancipatory turn in contemporary rural Croatia. Popolo, politica, partecipazione: Il governo delle aree rurali fragili in Italia e Europa, Rovigo, Italy, March 22-23 2019. (Oral presentation)
- Ostrom M., Kjeldsen C., Kummer S., Milestad R., Schermer M. (2017a). What's going into the box? An inquiry into the social and ecological embeddedness of large-scale EU and US box schemes. *Int J Sociol Agr Food* 24 (1): 113-134
- Ostrom M., De Master K., Noe E., Schermer M. (2017b). Values-based food chains from a transatlantic perspective: Exploring a middle tier of agri-food system development. *Int J Sociol Agr Food* 24 (1): 1-14
- Organization for Economic Cooperation and Development (2017). OECD Guidelines on Measuring Trust. Paris, France. Available at: <http://dx.doi.org/10.1787/9789264278219-en> [Accessed 1st 09. 2019].
- Padel S., Foster C., Midmore P. (2003). Expert perspectives on the future of the organic food market: results of a pan-European delphi study. In: Hopkins A. (ed) Organic Farming: Science and Practice for Profitable Livestock and Cropping, Occasional Symposium of the British Grassland Society 37, pp. 39-42. Available at: http://orgprints.org/11001/1/expert_perspectives_on_the_future_of_the_organic_food_market_results_of_a_pan-european_delphi_study.pdf [Accessed 20th 10. 2019].
- Panneerselvam P., Halberg N., Vaarst M., Hermansen J. E. (2012). Indian farmers' experience with and perceptions of organic farming. *Renew Agr Food Syst* 27 (2): 157-169. doi: <https://doi.org/10.1017/S1742170511000238>
- Paying Agency for Agriculture, Fisheries and Rural Development (2018). AGRONET Database. Zagreb, Croatia. Available at: <https://www.aprrr.hr/agronet/> [Accessed 10th 10. 2019].
- Pejnović D., Ciganović A., Valjak V. (2012). Organic agriculture in Croatia: problems and developmental potential. *Hrvatski geografski glasnik* 74 (1): 141-159. doi: <https://doi.org/10.21861/HGG.2012.74.01.08> (in Croatian)
- Putnam R. D. (1993). Making Democracy Work: Civic Traditions in Modern Italy. Princeton University Press, Princeton, N.J, USA, pp. 163-177
- Reganold J. P., Wachter J. M. (2016). Organic agriculture in the twenty-first century. *Nat Plants* 2 (2): 1-8. doi: [10.1038/nplants.2015.221](https://doi.org/10.1038/nplants.2015.221)
- Rivera M., Knickel K., Díaz-Puente J. M., Afonso A. (2018). The role of social capital in agricultural and rural development: lessons learnt from case studies in seven countries. *Sociol Rural* 59 (1): 66-91. doi: [10.1111/soru.12218](https://doi.org/10.1111/soru.12218)
- Schmid O., Padel S., Halberg N., Huber M., Darnhofer I., Micheloni C., Koopmans C., Bügel S., Stopes C., Willer H., Schlüter M., Cuoco E. (2009). Strategic Research Agenda for Organic Food and Farming. TP Organics, Brussels, pp. 22-58
- Scialabba N. E., Hattam C. (2002). Organic agriculture, environment and food security. Food and Agriculture Organization of the United Nations (FAO), Rome, Italy.
- SPSS Inc. (2008). SPSS Statistics for Windows, Version 17.0. SPSS Inc., Chicago, USA.

- Stahlbrand L. (2017). Can values-based food chains advance local and sustainable food systems? Evidence from case studies of university procurement in Canada and the UK. *Int J Sociol Agr Food* 24 (1): 77-95
- Twarog S., Vossenaar R. (2003). Obstacles facing developing country exports of organic products to developed country markets. In: *The Organic Guarantee System: The Need and Strategy for Harmonisation and Equivalence* (Westermayer C., Geier B., eds), IFOAM, Tholey, Germany, pp. 122-128
- van der Ploeg J. D., Renting H. (2004). Behind the 'redux': a rejoinder to David Goodman. *Sociol Rural* 44 (2): 233-242. doi: <https://doi.org/10.1111/j.1467-9523.2004.00272.x>
- Willer H., Shaack D., Lernoud J., Meredith S. (2016). Growth trends in European organic food and farming. In: *Organic in Europe: Prospects and Developments 2016* (Meredith S., Willer H., eds), IFOAM EU Group, Brussels, pp. 20-59
- Willer H., Moeskops B., Busacca E., de la Vega N. (2019). Organic in Europe: prospects and developments. In: *The World of Organic Agriculture. Statistics and Emerging Trends 2019* (Willer H., Lernoud J., eds), Research Institute of Organic Agriculture FiBL and IFOAM - Organics International, Frick and Bonn, pp. 208-216
- Wynen E. (2003). What are the key issues faced by organic producers? In: *Organic Agriculture: Sustainability, Markets and Policies* (Jones D., Poincet T., Patterson M., Bénicourt F, eds), OECD, CABI Publishing, Wallingford, pp. 207-220. <https://doi.org/10.1079/9780851997407.0207>
- Wynen E. (2006). Economic management in organic agriculture. In: *Organic Agriculture: A Global Perspective* (Kristiansen P., Taji A., Reganold J., eds), CABI Publishing, Wallingford, pp. 231-244
- Woolcock M., Narayan D. (2000). Social capital: Implications for development theory, research, and policy. *World Bank Research Observer* 15(2): 225-250
- Žutinić Đ., Zrakić M. (2018). Revitalization of rural areas from the perspective of local action groups. In: *Globalizacija i regionalni identitet* (Šundalić A., Zmaić K., Sudarić T., Pavić Ž., Janković D., Dremel A., Krivokapić N., eds), Filozofski fakultet Sveučilišta Josipa Jurja Strossmayera u Osijeku, Osijek, pp. 165-183 (in Croatian)