

DISTRIBUTION CHANNELS OF ORGANIC FOOD IN THE REPUBLIC OF CROATIA

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Summary

Organic agriculture is a new agricultural production system that tries to fully utilize farming potential and to satisfy all the social and economic needs while preserving the natural ecosystem and ensuring environmental protection. This paper gives an overview of the state of organic agriculture in the Republic of Croatia – the area under organic production in hectares (ha) by land-use, state of the areas under organic production per county, number of domestic producers of organic food in the period from 2002 to 2010, and distribution of domestic producers of organic food per county. By analyzing the available literature, the following distribution channels of organic food have been identified: direct, indirect and emerging distribution channels and they are described in more detail. Primary research was conducted among domestic organic food producers and the aim of the research was to assess the structural characteristics of production units (farm size, location and agricultural activities), the organizational characteristics of the production units (organization and management, farm management, organization of labor), distribution channels of organic food and the producers' suggestions for further development of the organic food market in the Republic of Croatia.

Key words: *organic agriculture, organic food producers, distribution channels, organic food, Croatia.*

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1. INTRODUCTION

The world organization of organic agriculture *International Federation of Organic Agriculture Movements (IFOAM)* has defined organic agriculture as a holistic production system which sustains the soil's biological activity, ecosystems and people.² It enhances ecological processes, biodiversity and biological cycles, taking into account local conditions and excluding inputs of non-organic origin. Organic agriculture comprises tradition, innovation and science, contributes to the environmental protection and promotes fair relations and good life quality for those involved in the process.

The legal framework for regulating and developing organic agriculture in Croatia is presented through the *Act on Organic Production of Agricultural Products and Foodstuffs (Zakon o ekološkoj proizvodnji poljoprivrednih i prehrambenih proizvoda)* passed in 2001.³ The Act regulates organic production of agricultural and food products, processing in organic agriculture, trade in organic products, unprocessed plant and animal products and products which entirely or partially contain such products. It also regulates labeling in organic agriculture, expertise and inspection, certification and subsidies for organic agriculture. The aim of agricultural production is the protection of health and people, protection of nature and the environment and consumer protection.⁴ The *Act on Organic Production of Agricultural Products and Foodstuffs* is in conformity with the Council Regulation (EEC) 2092/91 and the IFOAM principles.

Organic is any agricultural and food product which is produced and labeled pursuant to the *Act on Organic Production of Agricultural Products and Foodstuffs* and the accompanying ordinances and lists.⁵ Pursuant to the *Act on Organic Production of Agricultural Products and Foodstuffs*, legal and natural persons entered in the *Register*⁶ can engage in organic production, the import of organic products, technical inspection, assessing basic requirements and approval.

After the introduction, the paper gives an overview of organic agriculture in Croatia. In the third part of the paper organic food distribution channels are described. Next, the objectives of the paper and research hypotheses are explained, together with development of the research instrument, sampling and description of the data collection method. After that, structural and organizational characteristics of production units are described. Furthermore, research results on the distribution

² International Federation of Organic Agriculture Movements (2012) *Definition of Organic Agriculture*. Available at: http://www.ifoam.org/growing_organic/definitions/doa/index.html, 10 March 2012

³ Act on Organic Production of Agricultural Products and Foodstuffs, Official Gazette (Narodne novine), No. 12/01, 14/01, 79/07

⁴ *ibid*

⁵ Šamota, D., Jakšić, P., Stipešević, B., Miličević, I., Radić, S., Primožič-Radić, G. (2005) *Vodič za uključenje u sustav ekološke proizvodnje*, TIPO Osijek, Osijek, p. 3

⁶ Refers to one of the following Registers: Register of producers in organic production of agricultural and food products (*Upisnik proizvođača u ekološkoj proizvodnji poljoprivrednih i prehrambenih proizvoda*), Register of organic food importers (*Upisnik uvoznika ekoloških proizvoda*), Register of controlling stations for technical inspection of organic production (*Upisnik nadzornih stanica za obavljanje stručnog nadzora nad ekološkom proizvodnjom*), Register of authorised laboratories (*Upisnik ovlaštenih laboratorija*), Register of legal persons authorised for certification (*Upisnik pravne osobe za potvrđivanje*).

channels of organic food produced by domestic producers as well as producers' suggestions for further development of the organic food market in Croatia are highlighted. Before concluding remarks, the paper states limitations of conducted research and guidelines for future research.

2. ORGANIC AGRICULTURE IN CROATIA

For a deeper understanding of the paper, the terms used in the *Act on Organic Production of Agricultural Products and Foodstuffs* will be explained.⁷ After that, the situation in Croatia concerning organic agriculture will be presented.

A *producer in organic production* is a natural or legal person who produces, processes and trades in agricultural and food products pursuant to the *Act on Organic Production of Agricultural Products and Foodstuffs* and ordinances on organic production and who is registered in the *Register of organic producers or importers* with the Ministry of Agriculture, Fisheries and Rural Development.

Period of conversion in organic production is a prescribed period for the change from conventional⁸ to organic production pursuant to regulations. In the production of plants and plant products the period lasts for at least one year for annual plants and three years for perennials. In livestock breeding the conversion period depends on the animal breed. It lasts for five years at the longest. The period of conversion in plant production begins on the day of the first inspection.

Production unit in organic production is the whole farm or a part of the farm which is clearly separated from any other unit and which produces in accordance with the provisions of the *Act on Organic Production of Agricultural Products and Foodstuffs* and related ordinances. The production unit is usually a mixed-farm, but it can also be focused on production of a certain product, pursuant to a special regulation. After the first inspection the unit attains a transitional status, whereas after the conversion period expires it is given the status of an organic farm.

Materials for reproduction in organic production (seeds, fertilizers, plant protection, food and veterinary drugs and additives in processing) refer to living organisms or their parts by which the organic production starts or is maintained, apart from genetically modified organisms and their parts. The materials for reproduction have to meet the requirements for a certain type of organic production.

Certificate is a document by which a legal person in charge of performing the accreditation procedure confirms that the products, processes or services meet the prescribed basic requirements of organic production.

⁷ Act on Organic Production of Agricultural Products and Foodstuffs, Official Gazette, No. 12/01, 14/01, 79/07; Šamota, D., Jakšić, P., Stipešević, B., Miličević, I., Radić, S., Primožič-Radić, G. (2005) *Vodič za uključenje u sustav ekološke proizvodnje*, TIPO Osijek, Osijek

⁸ Conventional production of agricultural products and foodstuffs does not meet the standards of organic production and the products cannot be labeled as organic.

Organic product label is a unique, prescribed mark of organic products in the territory of Croatia which are produced in accordance with the *Act* and the ordinances on organic products, which have been inspected and for which a certificate of organic production has been issued. The right to use the label '*organic product*' for a period of one year is given by the Ministry of Agriculture, Fisheries and Rural Development at the producer's request. Since 2008, the label ORGANIC PRODUCT OF CROATIA (HRVATSKI EKO PROIZVOD) has been used (*Figure 1*).

Figure 1: Label ORGANIC PRODUCT OF CROATIA



Source: *Ordinance on labeling and marking of organic products, Official Gazette, No. 10/07*

Concerning the area of agricultural land under organic production in Croatia from 2002 to 2010, a significant increase is noted (*Table 1*). The increase has to be observed in the context of utilization of agricultural land.⁹

Table 1: Areas (ha) under organic agriculture in Croatia from 2002 to 2010

Year/Area (ha)	2002	2003	2004	2005	2006	2007	2008	2009	2010
arable land	49,50	2,494	2,386	2,214	2,957.92	2,915.69	2,800	9,766	17,066
orchards		27	34	84	200.93	574.72	792	1,264	1,770
vineyards		43	30	30	31.93	74.84	212	191	400
olive-groves		2	3	26	36.98	82.83	100	228	322
meadows and pastures		940	146	740	2,620.10	3,495.81	5,603	1,998	2,452
fallow land	2.29		3	27	101.80	40.15	100	84	156
forests (uncultivated land)			52	60	58.58	86.94	82	315	444
vegetables						92.17	95	68	284
medicinal plants						214.14	226	279	388
Total	51.79	3,506	2,386	2,214	6,008.24	7,547.23	10,010	14,193	23,282

Source: *Ministry of Agriculture, Fisheries and Rural Development (2012) Organic agriculture. Available at: <http://www.mps.hr/default.aspx?id=6184>, 11 March 2012*

⁹ Renko, S., Bošnjak, K. (2009) Aktualno stanje i perspektive budućeg razvoja tržišta ekološke hrane u Hrvatskoj, *Ekonomski pregled*, 60 (7/8), p. 378

The analysis of the distribution of agricultural land under organic production shows that in Croatia, in the period from 2002 to 2006, most areas were arable land. In 2007 and 2008 meadows and pastures dominated, whereas in 2009 and 2010 organic production was again concentrated on arable land.

Total agricultural land under organic production includes areas in conversion and those with organic status. *Table 2* shows the distribution of agricultural land under organic production in Croatia per year (from 2008 to 2010) and county. In 2008 Sisačko-moslavačka County had the highest proportion (2,401.76 ha) of land under organic production, followed by Osječko-baranjska County (2,337.34 ha). For the first time, although in a conversion stage, organic production was registered in Dubrovačko-neretvanska County. Total area under organic production in 2010 was 23,282.37 ha.

Table 2: Area under organic production (ha) in the period from 2008 to 2010

County	Area (ha) in 2008	Area (ha) in 2009	Area (ha) in 2010
City of Zagreb	26.63	23.81	967.44
Zagrebačka	880.23	1,150.39	561.04
Splitsko-dalmatinska	195.09	105.58	174.93
Osječko-baranjska	2,337.34	3,693.62	7,911.52
Istarska	98.48	133.91	173.26
Požeško-slavonska	1,019.03	1,240.26	1,324.35
Šibensko-kninska	139.50	160.60	304.64
Koprivničko-križevačka	66.24	82.60	144.09
Bjelovarsko-bilogorska	201.78	623.16	812.44
Međimurska	67.26	323.39	358.35
Karlovačka	365.82	717.93	887.78
Vukovarsko-srijemska	212.43	303.38	867.46
Varaždinska	79.94	73.61	57.99
Ličko-senjska	283.85	311.68	325.58
Brodsko-posavska	860.68	1,329.62	2,364.33
Virovitičko-podravska	305.27	395.72	2,490.07
Sisačko-moslavačka	2,401.76	2,525.86	1,995.14
Zadarska	356.66	863.84	1,003.68
Krapinsko-zagorska	11.54	19.63	53.38
Dubrovačko-neretvanska	5.29	17.00	69.70
Primorsko-goranska	96.05	98.14	435.20
Total	10,010.87	14,193.73	23,282.37

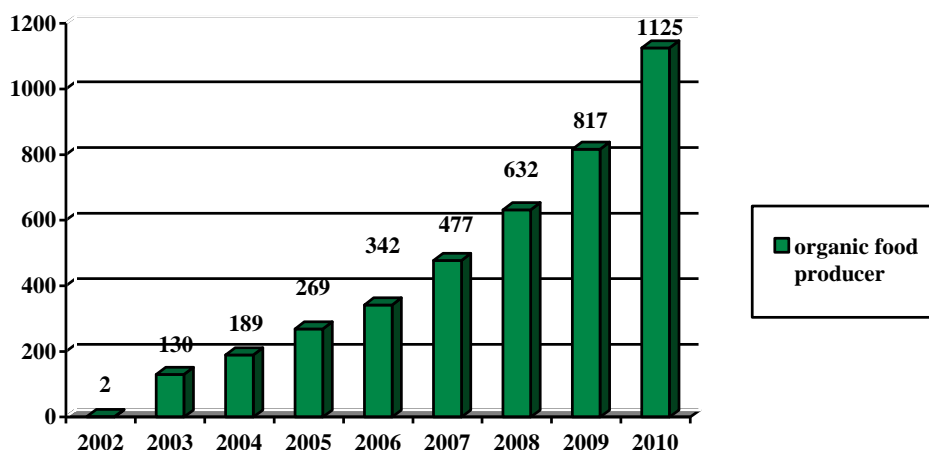
Source: Ministry of Agriculture, Fisheries and Rural Development (2012) *Organic agriculture*. Available at: <http://www.mps.hr/default.aspx?id=6184>, 11 March 2012

In 2000, there were 17 producers of organic food on the area of 12.5 ha and they had a certificate issued by internationally recognized organizations.¹⁰ The

¹⁰ Grahovac, P. (2005) *Ekonomika poljoprivrede*, Golden marketing-Tehnička knjiga, Zagreb, p. 155

number of producers in 2001 increased to 25 and the area under organic production totaled 100 ha. Due to the fact that the above data refer to the period before passing the *Act on Organic Production of Agricultural Products and Foodstuffs*, they were not officially recorded and thus the evidence of the number of domestic producers began in 2002 when two producers were recorded. In 2003, 130 producers were registered, whereas in 2005 a significant increase in the number of organic food producers for more than 100% as compared to 2003 was observed. Since then, the number of organic food producers has been continuously increasing, which is shown in *Graph 1*.

Graph 1: Organic food producers entered in the Register of producers in organic production in the period from 2000 to 2010



Source: Ministry of Agriculture, Fisheries and Rural Development (2012), *Organic agriculture*. Available at: <http://www.mps.hr/default.aspx?id=6184>, 11 March 2012

When analyzing the number of organic food producers, the most reliable data are those published in the Official Gazette in the *List of legal and natural persons entered in the Register of producers in organic production of agricultural products* and the Amendments of the *List of legal and natural persons entered in the Register* as well as the *List of legal and natural persons erased from the Register*. Table 3 shows the distribution of organic food producers per year (from 2008 to 2010) and county.

Table 3: Distribution of organic food producers per year (from 2008 to 2010) and county

County	Number of producers (2008)	Number of producers (2009)	Number of producers (2010)
City of Zagreb	44	57	91
Zagrebačka	61	84	67
Splitsko-dalmatinska	17	25	41
Osječko-baranjska	89	116	290
Istarska	18	25	40
Požeško-slavonska	27	33	37
Šibensko-kninska	10	12	19
Koprivničko-križevačka	17	19	19
Bjelovarsko-bilogorska	46	61	65
Međimurska	13	19	21
Karlovačka	23	27	44
Vukovarsko-srijemska	28	32	24
Varaždinska	14	17	19
Ličko-senjska	9	11	8
Brodsko-posavska	39	44	52
Virovitičko-podravska	23	29	52
Sisačko-moslavačka	94	123	128
Zadarska	28	41	34
Krapinsko-zagorska	9	14	17
Dubrovačko-neretvanska	5	8	22
Primorsko-goranska	18	20	35
Total	632	817	1125

Source: Ministry of Agriculture, Fisheries and Rural Development (2012) *Organic agriculture*. Available at: <http://www.mps.hr/default.aspx?id=6184>, 11 March 2012

In 2007 the largest number of domestic producers of organic food was present in Osječko-baranjska County, 75, whereas in Bjelovarsko-bilogorska County 49 producers were registered. In Zagrebačka County, there were 44 producers and in Dubrovačko-neretvanska there were no registered organic producers. Therefore, it can be concluded that Osječko-baranjska County had a leading position regarding the number of organic food producers. However, in 2008 the figures changed due to a significant increase in the number of organic food producers, in Sisačko-moslavačka County in particular, (94 producers), followed by Osječko-baranjska County (89 producers). In 2008, for the first time, organic food producers were registered in Dubrovačko-neretvanska County.¹¹ As shown in *Table 3* the number of organic food producers was increasing over the period from 2008 to 2010. However, in Zagrebačka, Ličko-senjska and Zadarska County in 2010 the number of producers decreased. In

¹¹ Petrović, T. (2007) Organic product of Croatia, presentation held at the round table 'Organic agriculture in Croatia' during the 'Eko-etno Hrvatska' event in Zagreb

Koprivničko-križevačka County the number of organic food producers remained the same in 2010 as compared to the previous year.

3. ORGANIC FOOD DISTRIBUTION CHANNELS

Based on the available literature, it has been established that there are no reliable data on the value and size of the organic food market in Croatia. According to Bajt¹², the share of the organic food market is less than 1% of the conventional food market value in Croatia.

One of the first researches on the organic food distribution channels was conducted in the market of Eastern Croatia¹³, when the marketing-mix and the characteristics of organic food were investigated. Results show that in Eastern Croatia, organic food is distributed through direct distribution channels, in the open markets and fairs mainly, and through door-to-door sales. On rare occasions organic food is distributed through indirect distribution and then mainly through specialized *health* food shops¹⁴ and supermarkets. The authors have concluded that indirect distribution of organic food is becoming more significant.

Research on consumers' habits when buying organic food, conducted by Zanolli and Jukic¹⁵, has revealed that consumers buy organic food mostly in supermarkets and specialized *health* food shops, based on which Bošnjak¹⁶ concludes that the share of *health* food shops is relatively low and of supermarkets high, which implies that the main distribution channels of organic food in Croatia are specialized *health* food shops.

Pejnović, Ciganović and Valjak¹⁷ investigated the present state and development of organic agriculture in Croatia, the distribution of producers per county and their attitudes towards problems in organic production, measures which would enhance further development and their reasons for engagement in organic production. As the possibility of organic food marketing is one of the key factors of development, the authors analyzed the distribution of organic products in Croatia. Results show

¹² Bajt, B. (2009) Organskom hranom u borbu za snagu brenda, *Progressive magazin*, 7 (85), p. 34

¹³ Tolušić, Z., Zmaić, K., Deže, J. (2002) Marketing-mix in the Function of the Organic Food of Eastern Croatia, *Ekonomski pregled*, 53 (7/8), pp. 782-794

¹⁴ *Healthy* food and organic food are not synonyms. Namely, it is necessary, terminologically, to separate the *healthy* food from the organic. *Healthy* food is low in fat and saturated fat and has limited quantities of cholesterol and sodium, whereas organic food has been inspected, controlled and certified in accordance with the organic agriculture criteria in the respective country; Petljak, K. (2010). Istraživanje kategorije ekoloških prehrambenih proizvoda među vodećim trgovcima hranom u Republici Hrvatskoj, *Tržište*, 22 (1), p. 99

¹⁵ Zanolli, R., Jukic, N. (2005) *Marketing study on organic and other selected special quality products from Croatia*. Available at: http://www.fao.org/docs/eims/upload/229929/2005_12_doc01.pdf, 10 March 2012

¹⁶ Bošnjak, K. (2007) *Čimbenici uspješnosti plasmana ekološke hrane na hrvatskom tržištu*, Faculty of Economics and Business, Zagreb, p. 90

¹⁷ Pejnović, D., Ciganović, A., Valjak, V. (2012) Ekološka poljoprivreda Hrvatske: problemi i mogućnosti razvoja, *Hrvatski geografski glasnik*, 74 (1), pp. 141-159

that the local market is the most important for domestic producers followed by organic associations and the tourist market. Small production capacities are not competitive enough for offering their products in a bigger market. Another reason is the fact that potential customers are not well informed and due to that a consumer-seller (producer) contact is of extreme importance. Significant links in the distribution of products are organic associations and the tourist market which are great potential for future development of organic agriculture in Croatia. Bigger producers sell their products to supermarket chains, the meat industry and butchers, whereas smaller producers have to sell their products to middlemen, usually at a lower price, to prevent their production from going to waste. In addition, they sell their products to cities, restaurants, milk factories and via the Internet.

For further analysis, the distribution channels of organic food in Croatia have been classified into: (1) *direct*, (2) *indirect* and (3) *emerging distribution channels*. Available literature on the emerging distribution channels is scarce and mostly focused on organic agrotourism.¹⁸

3.1. Direct distribution channels of organic food

In Croatia, there are the following direct distribution channels of organic food: (1) *on-farm sales*, (2) *door-to-door sales*, (3) *farmers markets*, (4) *fairs and fair exhibitions*, (5) *farm shops*.

According to Zanolli and Jukic¹⁹, in Croatia, a great number of farms are not capable of producing large quantities of organic food. Thus, the small quantities of organic food they produce are distributed through direct channels. Direct distribution increases the income as the trade margin money stays on the farm. Bošnjak²⁰ points out that direct sales is the most important distribution channel for domestic producers, but it is also important for consumers because through direct contact with producers they develop trust and, at the same time, feedback is more efficacious. For domestic producers of organic food, direct sales are very often the simplest way of selling. The production unit which wants to engage in direct sales of organic food faces numerous organizational changes. In order to begin with direct sales, the producer, in addition to his primary activity of organic production, takes on new responsibilities such as storage, processing and sales of his own products which is time consuming and brings numerous business obligations. Due to direct sales, organic food producers have an additional burden of processing and marketing. The sale of processed products significantly increases income, but also the activities on the farm.

¹⁸ Brčić-Stipčević, V., Petljak, K. (2010) Ekološko gospodarstvo u funkciji distribucije turističkih usluga u ruralnom prostoru, Second Croatian Congress on Rural Tourism with international participation, Mali Lošinj, 21-25 April 2010, Proceedings of the Congress, Volume 1, pp. 61-64

¹⁹ Zanolli, R., Jukic, N. (2005) *Marketing study on organic and other selected special quality products from Croatia*. Available at: http://www.fao.org/docs/eims/upload/229929/2005_12_doc01.pdf, 10 March 2012

²⁰ Bošnjak, K. (2007) *Čimbenici uspješnosti plasmana ekološke hrane na hrvatskom tržištu*, Faculty of Economics and Business, Zagreb, p. 94

Only farms with well developed entrepreneurial characteristics can meet all the requirements. Moreover, these farms also have to meet other requirements of direct sales such as the type of the product sold at the farm, the vicinity of the market and farm capacities. The farm which wants to engage in direct sales more seriously, has to invest in storage areas, processing and distribution facilities²¹, in particular if it is in the stage of conversion from conventional to organic production when it is necessary to prevent contact of conventionally produced products with the organic ones.

Door-to-door sales include on-line sales²², orders per telephone or fax and a permanent order: box-schemes (*zelena košara*). The organic box-scheme is a system of organic food delivery to the customers' address. Consumers themselves decide on the frequency of delivery (usually once a week), whereas the content of delivery depends on the consumers' needs, but also on the seasonal offer. The box-scheme is a mutual project of the Sever family farm (*obiteljsko poljoprivredno gospodarstvo – OPG*) and the Ecologica Association launched in 2005. The Box-scheme Gazette (*Vjesnik Zelene eko-košare*), with the information on the offer, but also recipes of the family farm Sever, is published on the Ecologica website.²³

Farmers markets are traditionally one of the most important ways of direct sales in Croatia, fresh fruit and vegetables in particular.²⁴ This way of organic food sales involves transportation costs and the costs of the stall at the market which include daily and monthly reservation. There are no official records of domestic producers selling at farmers markets, but it is known that, for example, the Sever family farm offers its products at Dolac, Trešnjevka and Utrine farmers markets in Zagreb.

Fairs are occasional sale events which are usually organized at the time when certain products are harvested. They are mostly held in bigger towns and in large open areas or halls attended by numerous organic food producers. Apart from the sales effect, they are important for the promotion of organic food.²⁵ One of the most significant fairs at which domestic producers of organic food exhibit their products are Croatian Village Products (*Proizvodi hrvatskog sela*)²⁶ and the international fair of rural products and services Eko Etno Hrvatska²⁷. Fairs and exhibitions are held in different counties at different intervals. The most famous world fair of organic food is BioFach in Nürnberg (Germany). The Ministry of Agriculture, Fisheries and Rural

²¹ Črep, R., Jelaković, K. (2006) *Oblici izravne prodaje seljačkih proizvoda*, Hrvatski zavod za poljoprivrednu savjetodavnu službu, Zagreb, p. 12

²² Some of the organic farms which sell organic food on-line are: the Sever family farm, the Grbić family farm.

²³ Ecologica (2012) *Box-scheme Gazette*. Available at: <http://www.ecologica.hr/vjesnici-zelene-eko-kosare.aspx>, 10 March 2012

²⁴ Črep, R., Jelaković, K. (2006) *Oblici izravne prodaje seljačkih proizvoda*, Hrvatski zavod za poljoprivrednu savjetodavnu službu, Zagreb, p. 19

²⁵ ibid

²⁶ Klaster proizvodi hrvatskog sela (2012) *11th Fair – Products of the Croatian Village*. Available at: <http://www.phs.hr/>, 10 March 2012

²⁷ Eko Etno Hrvatska Europa Tour (2012) *International Fair of Rural Products and Services*. Available at: <http://www.ekoetno-sajam.com/>, 10 March 2012

Development, supported by the Croatian Chamber of Economy (*Hrvatska gospodarska komora*), financed the presentation of organic food produced by Croatian producers at BioFach.²⁸

Producers of organic food also sell their products in their own shops. Zlata Nanić has been selling organic food in her own shop Zrno in Zagreb²⁹ since 2003. Data on this distribution channel are rare in domestic literature.

3.2. Indirect distribution channels of organic food

Indirect distribution channels of organic food in Croatia are: (1) *wholesale* and (2) *retail*.

Company Biovega is the leading distributor of organic food in Croatia. Biovega distributes domestic organic food (wheat products, barley, rye, corn, fresh fruit, vegetables and processed products). The company has signed agreements on cooperation with domestic producers of organic food. Biovega guarantees purchase and payment. Cooperation between Biovega and domestic producers began with the producers from Bjelovarsko-bilogorska County and producers from other counties joined later. The company offers organic food in its own specialized bio&bio shops, but also through supermarket chains (Konzum - EKOZONA³⁰), and some of the products are exported to foreign markets³¹. EKOZONA is Biovega's brand with an assortment of 108 products from the packaged and fresh program in 14 different categories. Attention has been paid to choosing the product categories for which it is convenient to replace conventional products with organic ones.³²

Company Pretti has been a distributor of organic food for 20 years already. The assortment includes more than 400 products (organic juices, drinks, cereal desserts, cereals, food supplements, spices, sweets, gluten free products, spreads and pasta). The company is a distributor of the following brands: Biotta, Lima, Vivani, Natur Comagnie, Dr. Schaer and Granovita. The products are distributed through specialised bio&bio shops, organic food supermarkets (Garden), pharmacies and supermarket chains (Konzum, Plodine, Tommy, Mercator, Billa, Spar, Metro, Getro, Kaufland, Diona, Brodokomerc Nova).³³

²⁸ Ministry of Agriculture, Fisheries and Rural Development (2012) *International Fair BIOFACH*. Available at: <http://www.mps.hr/default.aspx?id=6466>, 10 March 2012

²⁹ Sedlar, M. (2009) Pokretači eko uzgoja, *Progressive magazin*, 7 (85), pp. 34-36

³⁰ By introducing the EKOZONA assortment, Konzum has become the first conventional retail chain in Croatia which has devoted prominent shelf-space for organic labeled products.

³¹ Ministry of Agriculture, Fisheries and Rural Development (2009) *Brochure Croatian Agriculture*. Available at: http://www.agroklub.com/upload/dokumenti/brosura_croatian_agriculture.pdf, 10 March 2012

³² Biovega (2010) *Biovega's brand EKOZONA, exclusively in Konzum*. Available at: <http://www.biovega.hr/index.php/hr/novosti/biovegina-robna-marka-ekozona-ekskluzivno-u-konzumovoj-ponudi>, 11 March 2012

³³ Pretti - potpis prirode (2012) *Partners*. Available at: <http://www.pretti.hr/index.php?opt=content&id=40&lang=hr>, 10 March 2012

Organic food retail includes supermarkets and hypermarkets, specialized *health* food shops and, as a recent type of retail in the Croatian market, organic supermarkets.

Generally speaking, supermarket chains show different levels of interest for organic food. Their motives to enter the organic food market differ and they use various strategies when selling organic food.³⁴ The role of supermarkets as distribution channels is becoming more important and through their offer of organic food they can be described as those who take care of consumers' health. According to Zanolli and Jukic³⁵, the main distribution channels of organic processed products in the City of Zagreb and Zagrebačka County are supermarkets. This can be proved by checking the *Register of organic food importers* in which the following supermarket chains are listed: Spar, Kaufland Croatia, Getro and Lidl Croatia. In Croatia, supermarket chains have devoted more and more shelf-space to organic food³⁶.

Distribution of organic food through supermarkets requires assured supplies, homogeneous quality and large volumes.³⁷ This poses a problem, not only for specific organic products which are produced in small quantities (very often it is the case with small producers), but also for processed organic products because of potential bottlenecks at different stages of processing.³⁸ Therefore, in order to ensure sufficient quantities and a continuous supply, supermarkets very often import organic food.

The company *dm* has an assortment of more than 200 products of certified organic food producer Alnatura, and it also offers organic food produced by domestic producers: the Sever family farm and Hladnić Oil Mill. In *dm* shops organic food is offered on separate shelves and it is separated from other products.

Gea shop dominated the market during the 1990s with its offer of organic food, whereas today bio&bio shops are more represented in the Croatian market. Their assortment includes more than 2,000 products of certified producers, both domestic and foreign brands.

Competition in the area of organic food is getting stiffer, which can be proved by a new retail format on the Croatian market – organic food supermarket. Organic food supermarkets are the fastest developing distribution channel and they have significant shares in the respective market.³⁹ Garden supermarket was opened in 2008

³⁴ Lyons, K. (2007) *Supermarkets as organic retailers and impacts for the Australian organic sector*. Available at: http://www98.griffith.edu.au/dspace/bitstream/10072/17653/1/48327_1.pdf, 10 March 2012

³⁵ Zanolli, R., Jukic, N. (2005) *Marketing study on organic and other selected special quality products from Croatia*. Available at: http://www.fao.org/docs/eims/upload/229929/2005_12_doc01.pdf, 10 March 2012

³⁶ Results of the research on organic food offer among leading food retailers can be found in: Petljak, K. (2010) Istraživanje kategorije ekoloških prehrambenih proizvoda među vodećim trgovcima hranom u Republici Hrvatskoj, *Tržište*, 22 (1), pp. 93-112

³⁷ Wier, M., Calverley, C. (2002) Market potential for organic foods in Europe, *British Food Journal*, 104 (1), p. 56

³⁸ *ibid*

³⁹ Bolten, J., Kennerknecht, R., Spiller, A. (2006) *Perspectives of Small Retailers in the Organic Market: Customer Satisfaction and Customer Enthusiasm*. Available at: <http://ageconsearch.umn.edu/bitstream/10042/1/sp07bo08.pdf>, 10 March 2012

(at present, there are three supermarkets in Zagreb) and what makes it different from other specialized organic food shops (especially bio&bio shops which offer products of plant origin) is its offer of organic food of animal origin (e. g. San Daniele ham). At present, there are more than 3,300 products on offer, and the offer is based on the following brands: Ecor, Sonnentor, Schedel, Andechser Natur, Hollinger and Herbaria.⁴⁰ There are 40% of organic products made by domestic producers on offer and the plan is to further expand cooperation with domestic producers.

3.3. Emerging distribution channels of organic food

Emerging distribution channels include Ho.Re.Ca (hotels-restaurants-café) and public institutions (canteens, schools, hospitals, and army), as well as the distribution of organic food via organic agrotourism.

4. RESEARCH ON ORGANIC FOOD DISTRIBUTION CHANNELS OF DOMESTIC PRODUCERS

4.1. Development of research instrument

Regarding insufficient research on organic food producers and generally insufficient research on distribution channels, it is necessary to investigate organic food distribution channels in Croatia in terms of domestic producers.

The research process had two phases. In the first phase, preliminary research was conducted including five domestic producers of organic food. The research instrument was the interview reminder and research was conducted by telephone in the period between 13 and 15 July 2009. Based on the analyzed literature and on the data obtained by the interview, a *questionnaire on distribution channels of organic food* was designed. Justification for the research on distribution channels of organic food lies in the fact that there has not been comprehensive research in Croatia so far, whereas in other countries research has been conducted by Waltz⁴¹, Kis⁴², Dyrtrtová⁴³ and many others. The main objective is to analyze the existing distribution channels of the organic food produced by domestic producers. The research was conducted using the online questionnaire among respondents who have an email address. Other respondents were given a choice of a telephone survey or regular mail (to return the questionnaire in the enclosed envelope), so as to increase the response rate. The research was conducted between 17 July and 17 August 2009.

⁴⁰ Garden (2012) *On Garden*. Available at: <http://mojgarden.hr/o-gardenu/>, 12 March 2012

⁴¹ Waltz (2003) *Final results of the fourth National Organic Farmers' Survey: Sustaining Organic Farms in a Changing Organic Marketplace*. Available at: http://ofrf.org/publications/pubs/4thsurvey_results.pdf, 10 March 2012

⁴² Kis, S. (2007) Results of a questionnaire of Hungarian organic farms, *Studies in Agricultural Economics*, 106, pp. 125-148

⁴³ Dyrtrtová, K. (2007) *Organic Farming in the Czech Republic*. Available at: http://www.organic-europe.net/country_reports/czech_republic/bioinstitut-probio-2007-yearbook-2007.pdf, 12 March 2012

4.2. Sample and description of data collection method

As the list of population items the *List of legal and natural persons entered in the Register of producers in organic production of agricultural products* and the *List of legal and natural persons erased from the Register of producers in organic production of agricultural products* was used. According to the lists published in the Official Gazette in 2009, there were 638 domestic producers of organic food in Croatia (N=638).

The approximate size of the sample (n) had been calculated using the formula for estimation of the main set proportion⁴⁴, where a previous sample size n_0 , is $q = 1 - p$. The variable $z_{\gamma/2}$ is the estimation reliability coefficient, where d refers to estimation precision and p is the value of the population proportion with the analyzed feature. The parameter pq is the measure of dispersion (variance). If the dispersion is lower, a smaller sample is needed to ensure a representative picture of the basic set, but also vice versa. Very often the data needed for the sample size calculation can be found in the previously conducted research⁴⁵, or using the available research it is possible to approximate dispersion of the population⁴⁶. In their research, Zanolli and Jukic⁴⁷ give a percentage of 70% of small producers of organic food in Croatia which will be used when calculating the research sample. Based on the above, $p=0.70$, $q=0.30$, and the variance is $pq=0.21$. With a desired level of reliability of 95% ($z=1.96$) and a deviation in parameter value estimation of 10% ($d=0.1$), and the correction of the previous sample size, a final sample size of 71 respondents was determined ($n=71$).

A *systematic random sample* was chosen from the population. The first element was chosen randomly and from then onwards every k^{th} element was selected.⁴⁸ Thus, from the list of 638 organic producers registered in the period from 2001 to 2008, 71 had to be chosen for the sample, or every ninth producer of organic food entered the research respectively. Before sending the survey questionnaire, a preliminary testing of the data base had been conducted. Namely, there was an attempt to contact a few producers by telephone. Many of them had stopped being active in organic agriculture, but were not erased from the *Register of producers in organic production of agricultural products*. In relation to that and with the assumption that it would not be possible to contact all domestic producers, the questionnaires were sent to postal and email addresses of a larger number of producers. Therefore, more producers than originally planned were involved in the research, altogether 93 producers of organic food in Croatia.

⁴⁴ Šošić, I. (2006) *Primijenjena statistika*, Školska knjiga, Zagreb, p. 200

⁴⁵ Marušić, M., Vranešević, T. (2001) *Istraživanje tržišta*, Adeco, Zagreb, pp. 266-267

⁴⁶ Cooper, D. R., Schindler, P. S. (2006) *Market Research*, McGraw Hill, New York

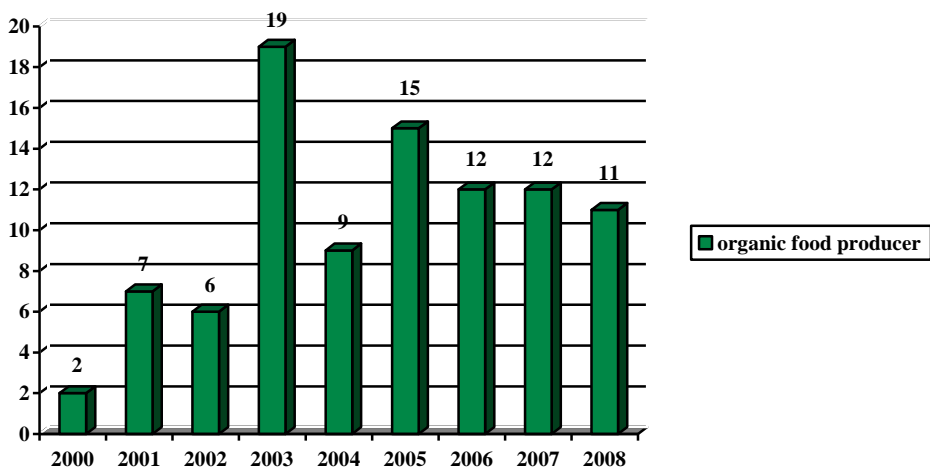
⁴⁷ Zanolli, R., Jukic, N. (2005) *Marketing study on organic and other selected special quality products from Croatia*. Available at: http://www.fao.org/docs/eims/upload/229929/2005_12_doc01.pdf, 10 March 2012

⁴⁸ Marušić, M., Vranešević, T. (2001) *Istraživanje tržišta*, Adeco, Zagreb, p. 279

4.3. Structural characteristics of production units

According to their status, the *majority of farms are organic* (n=63), 29 of them are in conversion, whereas one farm has a status of a biological dynamic production⁴⁹. In relation to the year of registering into the *Register of producers in organic production of agricultural and food products*, most producers (20.4%) were registered in 2003, when the number of organic food producers increased significantly⁵⁰. *Graph 2* shows the registration of organic food producers per year.

Graph 2: Registration of organic food producers per year



Source: *research*

According to *Graph 2*, two respondents stated they had registered in 2000, but as the organic agriculture was legally regulated in 2001, their answers should be taken with caution because in 2000 the *Register* did not formally exist.

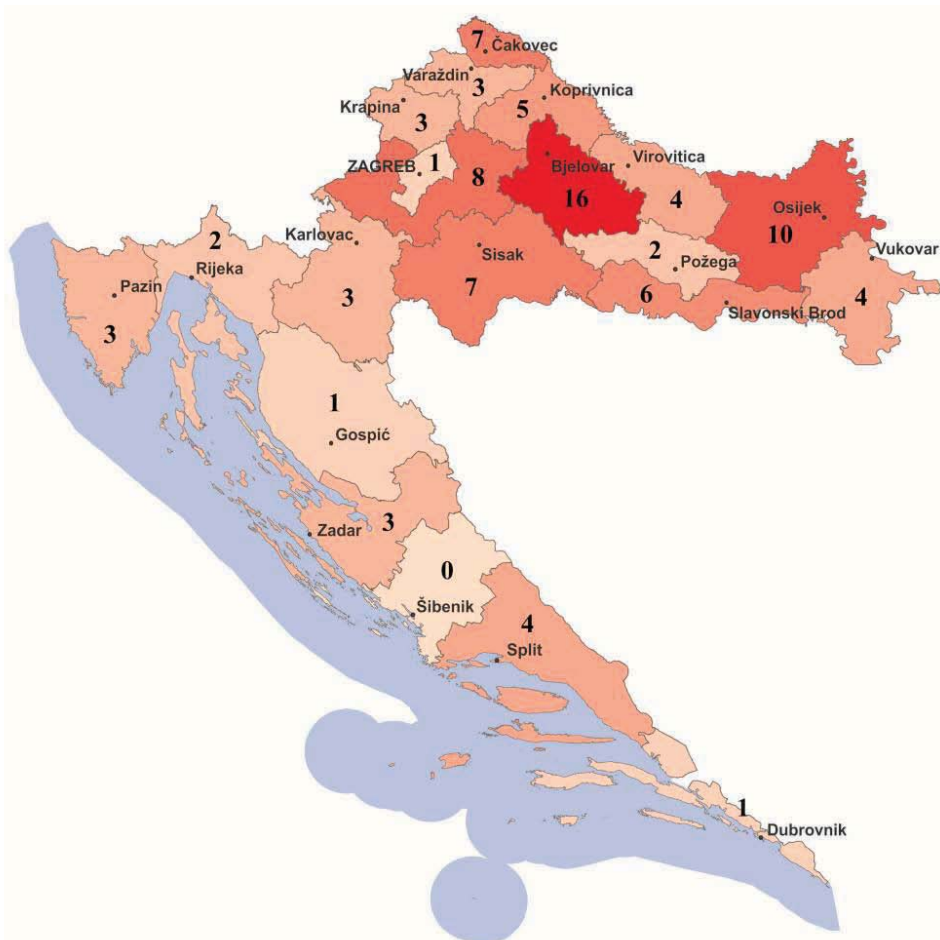
Organic food producers from almost all counties in Croatia, except Šibensko-kninska County were included in the research. The number of organic food producers who participated in research is as follows (*Map 1*): Bjelovarsko-bilogorska (n=16), Osječko-baranjska (n=10), Zagrebačka (n=8), seven organic food producers came from Međimurska and Sisačko-moslavačka County, from Brodsko-posavska (n=6), Koprivničko-križevačka (n=5), and there were four producers in Virovitičko-

⁴⁹ Biological-dynamic production is the oldest known type of organic agriculture which was developed in Germany in 1924 by the anthropologist and philosopher Rudolf Steiner on the principles of his "agricultural course in eight lessons". In this type of agriculture the soil is treated as a living creature and the objective is to have at least one head of livestock for each hectare of production area.

⁵⁰ Pejnović, D., Ciganović, A., Valjak, V. (2012) Ekološka poljoprivreda Hrvatske: problemi i mogućnosti razvoja, *Hrvatski geografski glasnik*, 74 (1), pp. 141-159

podravska, Vukovarsko-srijemska and Splitsko-dalmatinska County. Three organic food producers from Varaždinska, Krapinsko-zagorska, Karlovačka, Istarska and Zadarska County participated in this research. From Požeško-slavonska and Primorsko-goranska County two organic food producers participated, whereas from Ličko-senjska, Dubrovačko-neretvanska County and City of Zagreb only one producer was involved in the research. Out of 93 producers, 94.6% of them claimed that *all parcels were situated in the county in which they had their production unit.*

Map 1: Number of organic food producers who participated in research



Source: *research*

According to the type of the registered subject⁵¹, a majority of the producers (n=73, or 78.5%) are registered as producers – family farm, trade or limited liability company. As mixed units for production and processing, 19.4% producers are registered, whereas, one producer is a registered processor and one belongs to other types of registered units.

Majority of producers have up to 5 ha of agricultural land (n=62), whereas 30 producers (32.2%) belong to the category of medium sized and big producers. Namely, according to the available literature, producers with more than 5 hectares of agricultural land are classified as medium sized and big producers.⁵²

Fruit growing is the most dominant activity in which 52.7% of producers are engaged, whereas the least represented activities are mushroom growing and fisheries. However, not all producers engage in only one activity, e. g. besides crop growing they also grow vegetables. Table 4 shows the structure of producers in relation to the activity.

Table 4: Structure of producers in relation to activity

Activity	n	%
crop production	28	30.1
vegetables growing	32	34.4
fruit growing	49	52.7
wine growing	5	5.4
medicinal plants and herbs	16	17.2
forage crops	11	11.8
bee keeping	5	5.4
livestock breeding	25	26.9
flowers, shrubs and trees	3	3.2
olive growing	4	4.3
mushroom growing	1	1.1
fisheries	1	1.1

Source: research

4.4. Organizational characteristics of production units

Out of the total number of production unit owners, 53 are male and 40 female. The largest number of owners (n=29) belong to the 51 to 60 age group, followed by the 41 to 50 age group (n=27), then older than 60 (n=19), 31 to 40 (n=13), 21 to 30 (n=4), whereas the least number of owners is younger than 20 (n=1).

⁵¹ A – registered producer; family farm, trade, limited liability company; B – registered processor; C – registered importer; AB – mixed unit – production/processing; AC – mixed unit – production/importer; BC – mixed unit – processing/importer; ABC – mixed unit – production/processing/importer; D – other types of registered units.

⁵² Zanoli, R., Jukic, N. (2005) *Marketing study on organic and other selected special quality products from Croatia*. Available at: http://www.fao.org/docs/eims/upload/229929/2005_12_doc01.pdf, 10 March 2012

As regards the educational background of the production unit owners, the highest percentage, (58.06%), has secondary qualifications, whereas 8.60% of the owners have not completed primary education. In 84.9% of the cases, the owner is also the head of organic production at the production unit.

The motives for becoming engaged in organic agriculture were also investigated. Most of the domestic producers (n=61) are engaged in organic agriculture because of *their worldview*, followed by medical reasons (n=11), environmental protection (n=9), unemployment (n=5), whereas the smallest number of producers are engaged in organic agriculture because they were persuaded by their acquaintances or by ecological associations (n=3). Two respondents began with organic production because of government subsidies (n=2) and two for financial reasons (n=2).

According to results, *there are usually five employees at the production unit* (dominant (the most frequent) value (D)=1; mean (M)=1.20; standard deviation (sd)=0.618)). *The average number of working days in a week is five* (D=1; M=2.4; sd=1.36), whereas the *average number of working hours per week* at the production unit is *less than 40 working hours* (D=1; M=2.11; sd=1.184).

Organic food is exported by only 4.3% of producers and to the following countries: Austria, Germany, France, Great Britain, the USA, Hungary, Slovenia, Bosnia and Herzegovina, Serbia and Italy. Out of the total number of respondents, 39.8% of them are, *in addition to organic agriculture, engaged in other activities and mostly in production of autochthonous products or tourism. The least percentage of respondents is engaged in the catering trade.*

4.5. Research on distribution channels of organic food produced by domestic producers

According to the literature, retail is a significant distribution channel for organic food market supply in Croatia⁵³ and the ***objective of the research was to check the hypothesis that retail is a significant distribution channel for domestic producers.*** The structure and frequency of organic food sales through intermediaries are shown in *Table 5*.

Table 5: The structure and frequency of organic food sales through intermediaries

Organic food sales through intermediaries	n	%
wholesalers (e.g. Biovega)	36	38.7
associations	3	3.2
specialised shops	11	11.8
retail chains (supermarkets, hypermarkets)	3	3.2
small shops in the vicinity of the place of residence	6	6.5
restaurants, catering, schools	9	9.7

Source: *research*

⁵³ Vaclavik, T. (2009) *Specialised Organic Retail Report Europe 2008*. Available at: <http://orgprints.org/15482/03/vaclavic-2009-cee.pdf>, 10 March 2012

When domestic producers sell organic food through intermediaries, it is usually through wholesalers (38.7%). A smaller number of producers market their products through retail in shops (specialized shops, retail chains and little shops in the vicinity of the place of residence). Namely, 11.8% of producers sell through specialized shops, 6.5% through little shops in the vicinity of the place of residence, whereas only 3.2% of them sell their products through retail chains. Concerning other distribution channels, 3.3% of organic food is marketed through associations, whereas 9.7% of producers sell through restaurants, schools and catering.

In addition, the objective of the research was to determine whether small producers (those who produce on less than 5 ha), are in the position to reach certain distribution channels. The size of small producers' production units limits the quantities they can produce and therefore, the hypothesis is that they sell their products directly to consumers.

In order to examine the statistically significant correlation between distribution channels and the size of the area under organic production, chi-square (χ^2) test was calculated (Table 6). The obtained results ($\chi^2=19.622$; $p>0.05$) show that there is no statistically significant correlation between distribution channels and the area of agricultural land under organic production.

Table 6: Cross tabulation of agricultural land (in ha) under organic production and the distribution channels

Area under organic production (in ha)		Distribution channels through which the organic food is marketed			
		direct sales	sales through intermediaries (wholesale and/or retail)	direct sales and sales through intermediaries	Total
no area	n; % of total	0; 0.0%	0; 0,0%	1; 1.1%	1; 1.1%
less than 5 ha	n; % of total	33; 35.5%	6; 6.5%	23; 24.7%	62; 66.7%
5 to 10 ha	n; % of total	4; 4.3%	6; 6.5%	3; 3.2%	13; 14.0%
10 to 20 ha	n; % of total	2; 2.2%	2; 2.2%	3; 3.2%	7; 7.5%
20 to 50 ha	n; % of total	2; 2.2%	2; 2.2%	2; 2.2%	6; 6.5%
50 to 100 ha	n; % of total	1; 1.1%	0; 0.0%	2; 2.2%	3; 3.2%
more than 100 ha	n; % of total	0; 0.0%	1; 1.1%	0; 0.0%	1; 1.1%
Total	n; % of total	42; 45.2%	17; 18.3%	34; 36.6%	93; 100.0%

$\chi^2=19.622$; $p>0.05$

Source: *research*

Small producers also use other distribution channels to a great extent; *33 of small producers claim they have sold their products through direct distribution channels*, although in a great number of cases (n=23), the products are sold directly to consumers and through intermediaries. *Big producers use both distribution channels equally*. That was confirmed by the chi-square test, which showed that there was no statistically significant correlation between small and big producers regarding the distribution channels. Concerning *direct sales to consumers*, the most frequent direct distribution channel is *on-farm sales* (61.3%), followed by *sales at fairs and fair exhibitions* (40.9%), whereas *sales in farmers markets and door-to-door sales* are two equally used distribution channels (18.3%). The least used distribution channel is *kiosk sales* (2.2%). Research results differ from those obtained in the research conducted by Pejnović, Ciganović and Valjak.⁵⁴

4.6. Producers' suggestions for further development of organic food market

Among the most important actions the *Ministry of Agriculture, Fisheries and Rural Development of the Republic of Croatia* should take in order to improve the market, the domestic producers (n=29) have pointed out *education and informing consumers about organic food*. Domestic producers were given a possibility to add some other necessary actions for further development of the organic food market. A majority of them (n=20) mentioned the *need for reduction of organic food import and stimulation of export, safe marketing, reduction of inspection and certification prices and inclusion of other Ministries in a joint promotion of organic food*.

According to the producers, the most important actions they should take in order to further improve the market is *education and informing consumers about organic food* (n=29). The least number of producers (n=13) think that the promotion of the ORGANIC PRODUCT OF CROATIA label is important for further development of the market.

Significant majority of domestic producers (n=50) speak in favor of forming *an association in order to gain power in negotiations with retail chains*, whereas *reduction of organic food prices is the least important issue for market development* (n=3). The majority of domestic producers (n=53) find *cooperation with retail chains the most important factor for further development of the organic food market*, followed by *consumer education* (n=29).

⁵⁴ Pejnović, D., Ciganović, A., Valjak, V. (2012) Ekološka poljoprivreda Hrvatske: problemi i mogućnosti razvoja, *Hrvatski geografski glasnik*, 74 (1), pp. 141-159

5. RESEARCH LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The main limitation when designing the framework for the research on organic food producers included accuracy and updatedness of the *List of legal and natural persons entered in the Register of producers in organic production of agricultural products* and the *List of legal and natural persons erased from the Register of producers in organic production of agricultural products*. Namely, in the meantime some producers have been erased from the *Register* and some have changed their addresses. In addition, there were no telephone numbers in the lists and collecting them was rather time consuming.

The limitation of research design lies in the fact that the questions about distribution channels of organic food were general. A large number of producers are engaged in several agricultural activities whereas the questionnaire was too general and lacked questions on a specific activity and the respective distribution channel. Therefore, it has not been established whether the producers distribute all of their products through the same distribution channels or whether those channels vary in relation to the activity or organic product. This should be investigated by further research in order to get a more complete picture of distribution channels of domestically produced organic food.

Main limitation of this research was the inconsistency in data collecting. Namely, a certain number of respondents filled in the online survey, some of them sent the filled in questionnaire by regular post, whereas others were contacted by telephone. It is the inconsistency that could influence research results. In addition, the respondents' efforts to meet the researcher's expectations also present a certain restriction.

6. CONCLUSION

Development of organic agriculture in Croatia began with the *Act on Organic Production of Agricultural Products and Foodstuffs* in 2001. This paper investigates distribution channels of organic food by domestic producers based on the analyses of the available literature and presents the results of primary research conducted on the sample of domestic organic food producers.

Research results indicate that the majority of farms are small, less than 5 hectares, with fruit growing being the most prevalent activity. As the main motive for engaging in organic agriculture the producers pointed out their worldview. Research on retail in shops as one of the distribution channels has revealed that a smaller number of domestic producers distribute their products through retail sale. The aim of the research was to determine whether small producers distribute their organic food exclusively through direct channels of distribution. A statistically significant correlation between distribution channels and the agricultural land under organic production has not been determined; consequently, small producers do not sell organic food through direct distribution channels exclusively.

Producers were surveyed with regard to actions needed for further development of the organic food market. They emphasized education and informing the consumers as the most important areas of future activity of the Ministry of Agriculture, Fisheries and Rural Development. In addition, they thought that domestic producers should enter into associations in order to be able to negotiate with supermarket chains, whereas the leading supermarket chains should initiate cooperation with domestic organic food producers. Results of the research can be used for both scientific and practical purposes. Therefore, they are available to domestic organic food producers and food dealers as to enhance better understanding between them and to enable them to reach the desired distribution channels. They can also be used as guidelines for the Ministry of Agriculture, Fisheries and Rural Development to analyze the situation of organic agriculture in Croatia in order to further improve organic agriculture and the organic food market.

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KANALI DISTRIBUCIJE EKOLOŠKE HRANE U REPUBLICI HRVATSKOJ

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Sažetak

Ekološka poljoprivreda sustav je poljoprivredne proizvodnje kojim se nastoje maksimalno iskoristiti potencijali poljoprivrednog gospodarstva uz zadovoljavanje društvenih i gospodarskih potreba, očuvanje prirodnog ekosustava i okoliša. U radu je dan prikaz stanja ekološke poljoprivrede u Republici Hrvatskoj - površine pod ekološkom proizvodnjom u hektarima prema uporabi zemljišta, stanje površina pod ekološkom proizvodnjom po županijama, broj domaćih proizvođača ekološke hrane od 2002. do 2010. godine, distribucija broja domaćih proizvođača ekološke hrane prema županijama. Pregledom literature utvrđeni su kanali distribucije ekološke hrane – direktni, indirektni i nastajući kanali distribucije koji su kasnije u radu detaljnije opisani. Kako bi se prikupila nova saznanja o domaćim proizvođačima ekološke hrane, provedeno je primarno istraživanje. Istraživanjem su se ispitivala strukturalna obilježja proizvodnih jedinica (veličina poljoprivrednog gospodarstva, lokacija parcela i djelatnosti kojima se poljoprivrednici bave), organizacijska obilježja proizvodnih jedinica (organizacija i način gospodarenja, vođenje poljoprivrednog gospodarstva, organizacija radne snage), kanali distribucije domaćih proizvođača ekološke hrane i prijedlozi proizvođača za daljnji razvoj tržišta ekološke hrane u Hrvatskoj.

Ključne riječi: *ekološka poljoprivreda, proizvođači ekološke hrane, kanali distribucije, ekološka hrana, Hrvatska.*

JEL klasifikacija: Q13, Q01

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