

What Croatian farmers think about situation in agriculture?

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Abstract

Analysis of the attitudes of the Croatian agricultural producers on the situation in agriculture was obtained through a survey carried out in the framework of IPA project “Contribution of agriculture to a clean environment and healthy food”. The aim of the study was to investigate the individual attitudes of agricultural producers about the basic problems and the situation in the agriculture of Croatia. The study involved 57 agricultural manufacturers from the area of Osijek-Baranja and Vukovar-Srijem County. Respondents are primarily registered as family farms (70%) and crafts (16%). 81% of producers are inscribed in the Register of agricultural producers, 68% are in the VAT system, and 72% receive agricultural subsidies in the form of direct payments. Although general attitudes in Croatian society regarding cooperation in agriculture are pretty complicate and divided, farmers are aware of its benefits (evaluated better than problems). According to them, the main problem in Croatian agriculture are high input prices, slow administration and low market food price. Although farmers blame government and its ministries the most for unfavorable situation in agriculture, in the same time they expect the most improvement driven by government decisions. Farmers see themselves primarily as hardworking, dedicated to their job, nature loving people, but at the same level they are disappointed and underestimated due to current long-standing problems in agriculture.

Keywords: farmers, attitudes, agriculture, cooperation, EU funds

Introduction

After the proclamation in 1990, the Republic of Croatia turned to an open market model and an integration process of transition. Today Croatian economic development is based on export orientation with and important

role of agriculture due to the limited domestic market and a loss of traditional markets. The transition from central planned to the market economy caused many difficulties in agricultural sector: loss of tradition markets, war destructions, failure in privatization of state-owned land, unorganized market and sale problem, high input prices, technological and educational production limits, producers insolvency causing lower inputs and lower yields, agricultural and vegetable export-import deficit etc. (Lončarić et al., 2005.)

Croatia, as well as most of Western Balkan countries, has quite high but unused potential for agriculture, characterized by small-scale and fragmented nature of private farming, a long-term decline in the volume of agricultural production, rather low yields that still lag behind the EU average and rather high agricultural producer prices, mostly above the EU average, indicating weak price competitiveness (Volk et al., 2012). However, agriculture and food production are of exceptional importance for Croatia and constant work on production competitiveness are necessary for successful integration of Croatian agricultural sector in EU market (Gelo and Gelo, 2008).

Since Croatian self-sufficiency in food products is still very low, the first policy objective is to increase domestic supply with high quality products at reasonable prices. However, in Croatia there is no sufficient demand to motivate domestic producers to increase their production, and domestic policy makers to present the policy of geographical indications as a key to solve the problems of small producers. Within the EU context, agrifood sector is of little importance with a share of only about 1% in main economic indicators. Despite favorable natural resources, historical, organizational, economic and institutional reasons explain difficult situation in agriculture and in rural areas. Policy makers are trying to resolve these issues, now by available CAP mechanisms of income support and rural development. Despite considerable financial resources available for Croatian farmers, there is fear that the funds will not be adequately utilized (Franić et al., 2014.). Franić et al. (2003) investigate Croatian agricultural policy in its elements (policy objectives, measures and methods, stakeholders, results). The authors evaluate foreign trade protection and domestic support by state intervention indicators. Although the nominal indicators point out a relatively highly protected agricultural sector, effective protection of domestic producers has been considerably lower, due to high costs of agricultural inputs and the influence of world prices.

Župančić (2009) researches farms structure in Croatia, trying to explain differences between farms types. The author stated that a traditional type of family farming holdings existed for a long time in Croatia, although in the last 25, 35 years under the influence of different factors, a modern

agricultural holding is being born, capable of sustaining the market competition and to some extent compatible with the European surrounding.

One of the concepts of the modern agriculture is a larger and technologically better equipped farm. The efforts of the state policy during the transition and privatization process, which led to a new structure of the Croatian agriculture, have taken that course. A bigger polarization in the ownership structure of the family agricultural holdings has occurred, within which a smaller number of larger and market oriented holdings has been singled out, co-existing at the same time with a huge majority of small and tiny holdings, who still maintain many traditional characteristics. Numerous issues have yet to be resolved and the overall situation in agriculture is stagnating and potentially very conflicting.

Croatia's share of agriculture in GDP is about 5.1% in 2011 (Eurostat 2012). For comparison, the share of agriculture in GDP of the EU-27 amounts to 1.7%. In Croatia, as much as 13.8% of the working population is employed in the agricultural sector while in EU-27 only 4.7% in 2010 (Eurostat 2011). According to the research on the agricultural farms structure, spent 2010 by Croatian bureau of statistics (2010), agricultural production in the Republic of Croatia was taking place at 233.280 agricultural farms which cultivated 1.316.000 hectares of agricultural land. Family farms makes 99% of the total number of farms or 231.070, while only 1% or 2.210 farms acts as a legal entity. The average farm size is about 5,6 ha, while in EU the average farm size is 14,5 ha. According to the land use, fields and gardens participate the most (67,1%), permanent grassland - meadows and pasture (26,9%), orchards (2,2%), vineyards and olive groves (1,4%) of utilized agricultural land.

In Croatian crop production, the importance of cereals in agricultural production is indisputable, participating with 67.6% in arable land sown. Traditionally, our most important cereals are maize (49% of all cereals sown) and wheat (31%). Nevertheless, joining the European Union and exit from CEFTA did not endanger the balance of agricultural and food products because the recorded increase in exports value was 20% and in import 18% (Lončarić et al., 2014.). The average unemployed rate in 2013 amounted 20,2% in Croatia, while in EU 10,4%. According to CBS data, average net paid wage per employee in 2013 was around 5.515 kn (1 € is about 7,6 HRK). The average net salary paid per employee in agricultural activity in 2013 is less than the average net salary in Croatia and it amounts 77% of the average net wages paid per employee in the Republic of Croatia.

In these circumstances, Croatian agricultural producers are demotivated, insolvent and disappointed. The aim of paper was to investigate the individual attitudes of agricultural producers about the basic problems and the situation in the agriculture of Croatia by using the questionnaire.

Material and Methods

Analysis of the attitudes of the Croatian agricultural producers on the situation in agriculture was obtained through a survey carried out in the framework of IPA Croatia-Serbia project “Contribution of agriculture to a clean environment and healthy food”.

Other than the economic issues, this extensive survey also involved issues related to fertilization and protection of agricultural production. The study involved around 56 agricultural manufacturers from the area of Osijek-Baranja and Vukovar-Srijem County. These two counties are the most important agricultural areas in Croatia. The research was conducted in 2014. The questionnaire was consisted of questions regarding:

- socio-demographic characteristics of farmers/respondents,
- farm legal and administrative features,
- attitudes regarding bad situation in agriculture, adjustment in the EU and EU funds involvement,
- farmers data about agricultural production (size, fragmentation of farm land, crops and livestock production),
- farmers attitudes about cooperation in agriculture,
- the most significant problems of Croatian agriculture, who is responsible for that and who can improve situation in agriculture
- personal characteristics of Croatian farmers

Socio-economic part of questionnaire was consisted of 26 questions.

Most of the questions were two or multiple answer questions and three questions were open-ended questions. Some answers were measured by means of five-point Likert scale anchor when 1=low or bad degree of the characteristic and 5=high of good degree of the characteristic (Likert, R., 1932).

The data obtained from the survey were analyzed with PC applications SA for Windows (SAS Institute Inc., Cary, NC, USA), StatSoft Statistica and Excel for determination of variance analysis (ANOVA) and correlations dependences.

Results

Socio-demographic characteristics of farmers/respondents

Respondents were mostly from rural areas (75%). The average age of respondents were 41,8, what is very good because the average age of Croatian farmer is 59,8 (Horvat, 2014). Regarding farmers education level (Table 1), significantly better situation is among farmers covered by survey compared to average Croatian agricultural producer. Major differences in favor to farmers/respondents is higher levels of high school degree (56,14 vs. 29,07%) and university degree (26,32 vs. 2,14%).

Table 1. Comparison between farmers/respondents and average Croatian farmer educational structure (%)

Education level	Farmers/respondents	Average Croatian farmer
Incomplete elementary school	0,00	9,33
Not updated educational background	1,75	30,62
Elementary school	10,53	26,40
High school	56,14	29,07
College	1,75	2,44
University	26,32	2,14
PhD	3,51	Not researched

But when farmers/respondents were asked about their agricultural education, the most frequent answers were high agricultural school diploma (28,07%) or family tradition (21,05%), while 14,03% have university degree in field of agriculture. Less frequent answers were: long-life learning (10,53%), no education in agriculture (8,77%), specialized courses (7,02%), college (5,26%) and incomplete faculty of agriculture (3,51%). The average number of farm employees is 2,48 while month income per farm was 2.073 € Their income mostly come from agricultural activities (51%) or agricultural mixed with non-agricultural activities (31%), while share of income based on non-agricultural activity amounts 15,79%.

Farms' legal and administrative features

Respondents involved in this study are farmers who had a will to participate in this research and have previous contacts with Faculty of agriculture. So, these farmers take serious their business. In Croatia the most common ways to register farm is: family farm, craft registered for agricultural activity, holding and cooperation registered for agricultural activity. The observed data set showed that family farms participated the most (70%), followed by crafts (16%), holding company (5,26%), cooperation (1,75) and other (5,26%). Most of them are members of Croatian farm register. Croatian farm register is a database that contains information about the farms and their resources and is characterized by a higher level of seriousness of the business. So, it is not surprise that mostly farmers/respondents are involved in VAT system too (68%), what amounts 25% in Croatia and involves farms who earn more than 230.000 HRK/year. Farmers can be involved in VAT if their incomes are more than 80.000 HRK. If it is more than 230.000 HRK they must be in VAT system. Involvements in Croatian farm register and VAT significantly positively correlate ($r= 0,30^*$; $n=56$; $df=55$).

In this survey, 71,93% of respondents are users of agricultural subsidies and the most of them are users of Croatian extension service (71,93%), while 22,81% think they do not need their advices or they use services but do not listen advices (3,51%). Involvement in Croatian

extension service positively correlate with respondents engage in Croatian farm register ($r=0,61^{**}$), VAT system ($r=0,44^{**}$) and taking agricultural subsidies ($0,50^{**}$). Hadelan et al. (2012) conducted the similar survey which included 34 family farms in Croatia and summarizes the main features of business decision making of farmers, with emphasis on information basis, risk aversion, participants and goals. The authors presented similar results claiming that the most often used information sources are the professional journals and the agricultural extension service. According to that research, only 29.4% of respondents use the Internet as an information source.

Attitudes regarding situation in agriculture, adjustment in the EU and EU funds involvement

Taking into consideration bad situation on Croatian agriculture, generally, farmers think that responsibility for that goes to unfavorable conditions for agricultural entrepreneurship (47,37%), followed by bad policy of agricultural subsidies (26,32%) and poor economic situation in the country (22,81%), while 1,75% of respondents do not know the answer.

Prediction of EU joining effects on agriculture gave many Croatian authors. Franić et al. (2012) stated that Croatian accession to the European Union updated the readiness of Croatian agricultural producers to a market that soon awaits them. They reexamined the goals and results of agricultural policy measures, but also the policy's development concerning the harmonization of entire rural areas with the Common Agricultural Policy of the EU. The socio-economic changes haven't significantly altered the main objectives of agricultural policy (providing enough food for consumers at reasonable prices, and an equal standard of living for farmers), but they have just changed the instruments and measures of the states with regard to the economic conditions and political circumstances. The authors also gave a review of scientific paper themes in the field of agriculture, so they state that papers of the late 20th century emphasize the impossibility of mapping individual solutions from the EU to the Croatian situation.

Farmers/respondents' attitudes regarding situation in Croatian agriculture after joining EU are quite pessimistic because 47,37% of them think joining the EU did not help, 26,32% of them think it help, while 24,56% do not know. So, it is not surprising that 85,96% farmers covered by survey believe that Croatia was not good prepared for joining EU. The farmers think the main reasons for fear of joining the EU is that they will not meet EU standards (42,11%), fear of unknown (35,09), and lower prices in the EU (17,54%), and the rest of them do not know the answer (3,51%). Although farmers haven't got a good general opinion regarding joining EU, they still believe that Croatian food can be successfully marketed to the EU (54,39% of respondents).

Božić et al. (2009) point out the necessity of taking advantage of the EU pre-accession funds as most favorable external help instruments for the adjustment process, and the importance of the challenge and the opportunities such activities bring. Croatian unpreparedness for joining the EU can be drawn from fact that we could use 858 millions of EU funds euros in period 2006-2013, but we used only 186 million. Only 10,53% of farmers/respondents participated in EU project fund applications, but positive data is 83,28% of that number is financed. Expectedly, there is a positive correlation between submitted and financed projects ($r=0,49^{**}$).

Farmers data about agricultural production (size, fragmentation of farm land, crops and livestock production)

After transition to market oriented economy, family farms in Croatia are mostly private. Farmed land mostly is in private ownership (70%), land in a lease amounts 15,45% and land taken into concession amounts 14,55%. Interestingly, private ownership is in negative correlation with a number of employees ($r=-0,31^*$) but number of employees is in positive correlation with land in concession ($r=0,30^*$). It can be explained that private family farms mostly have a small farm size so they do not have a high demand for extra work in relation to big agricultural holding companies that have more land so they take land into concession and employ more workers.

The average farm size in survey is 18,91 ha, fragmented in average on 4,23 particles. Fragmentation of farms is a big problem for Croatian farm efficiency and competitiveness. Respondents have in average 11,66 pieces of big livestock and 7,05 pieces of little livestock. A relatively small number of livestock is logic, because the farmers from researched area of East Croatia are mostly crop producers, less livestock breeders. Mostly, farmers grow corn (34 out of 56 respondents), wheat (33), soybean (25) and sunflower (18). Barley, sugar beet, rapeseed and sunflower are less frequent. Expectedly, crop production is in strong correlation to all crops, while livestock production correlate to fodder crops ($r=0,62^{**}$), barley ($r=0,48^{**}$) and corn production ($r=0,28^*$).

Considering small average farm size, completed farm machinery is often a problem for continuous production, so only 33,93% have all machinery they need, but the rest of them addresses to friends/neighbors/cousins for borrowing (32,14), mechanization service agencies (28,57) or they are involved into hardware rings (5,36%).

Farmer's attitudes about cooperation in agriculture

Attitudes regarding cooperation in agriculture are pretty complicate and divided. On the one hand, producers are familiar with benefits arising from cooperation, but on the other side, they are still reluctant to involve.

The primary reason is a bad experience from the past, because during socialism farmers are involuntarily associating into agricultural cooperatives.

Matijašević (2009) explore legislation regulating the registration, activities and structure of co-operatives, primarily the agricultural ones, in Croatia. The analysis of regulations from the socialist period between 1945-1990 shows that the co-operative was an instrument servicing the state interests and not the interests of its own members. This is obvious from the standardized goals among which the first one was the nationalization i.e. the socialization of the agriculture (following the breakdown of its concept and the campaign of collectivization in 1953). Nevertheless, after 1974 and the reform, the co-operatives became an important economy subject. The author has given special attention to the current Law on co-operatives of the Republic of Croatia. New legislation on co-operatives and other measures of economy policy should provide quality incentives for the co-operatives in Croatia in order for them to become more competitive.

Božić, 2009 also addressed to the importance of cooperatives in joining EU process and stated that they will play a significant role in the adjustment process, since the EU gives particular attention to them in the new member countries as well.

Farmers/respondents were asked to evaluate the importance of problems as well as positive effects of agricultural association in Croatia (Table 2). The respondents highly evaluated problems, as well as the positive effects of cooperatives, so the average values range from 3,98 to 4,46. Due to small differences in responses there were not estimated statistically significant differences between the answers. However, farmers evaluate better the effects (average value of all effects is 4,32) than the problems connected with associations (4,03).

Table 2. Average value of association problems and effects in Croatia

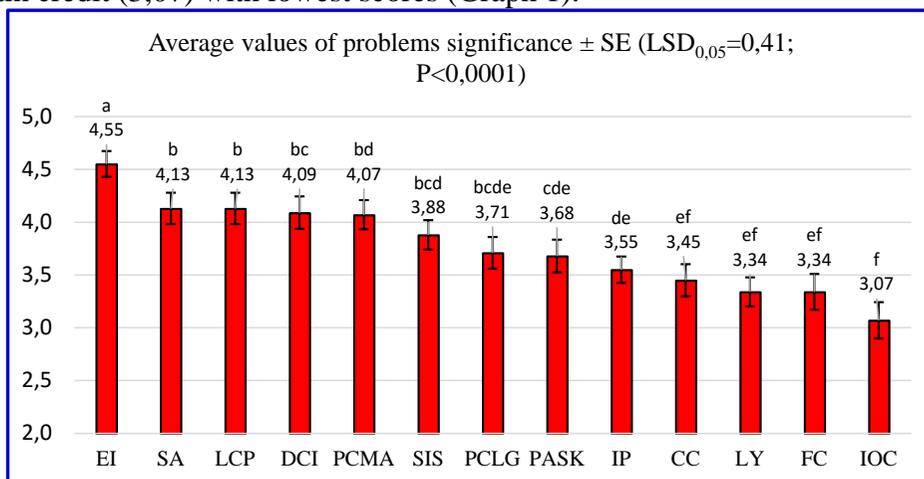
Problem	Average value (1=strongly disagree, 5=completely agree)
Investments and profit distribution issues	4,11
Lack of trust	4,11
Inadequate legislation	4,11
Lack of information and farmers knowledge	3,96
Bad experiences in the past	3,98
Average	4,03
Effect	Average value (1=strongly disagree, 5=completely agree)
Better connections with the market	4,46
The acquisition of new knowledge and education	4,30
Better information and assistance	4,29
Easier to financial compensations and subsidies	4,21
Average	4,32

The most significant problems of Croatian agriculture, who is responsible for that and who can improve situation in agriculture

According to farmers opinion, the most important and first problem in Croatia agriculture is high level of input prices (the average value from 1 to 5 is 4,55).

On the second level of statistical importance ($P < 0,0001$) is slow administration (4,13), low market price (4,13), problem of debt collection (4,09), poor cooperation with Ministry of agriculture (4,07), small and irregular subsidies (3,88) and poor cooperation with local government (3,71).

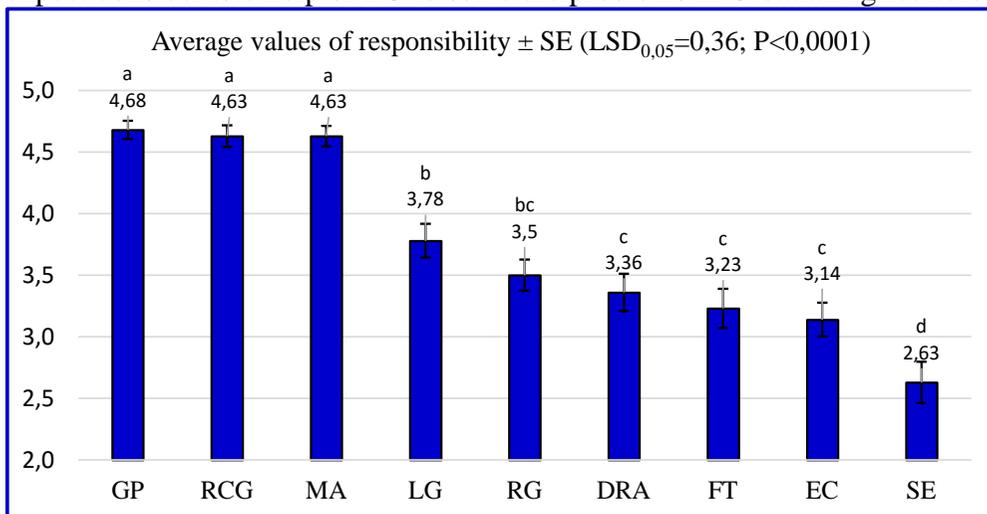
The less important problems are poor application of scientific knowledge (3,68), inefficient production (3,55), climatic changes (3,45). Farmers rate low yield (3,34), foreign competition (3,34) and inability to obtain credit (3,07) with lowest scores (Graph 1).



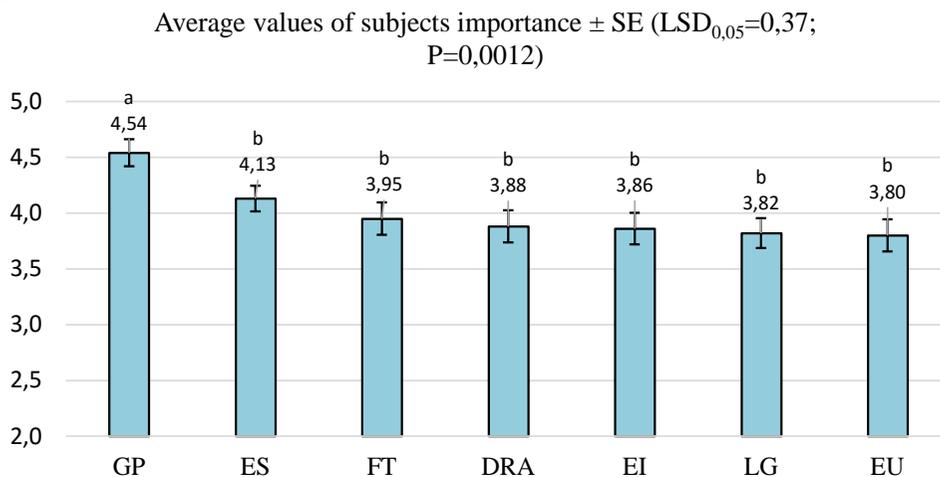
Graph 1. Farmers' evaluation of significance of the main problems in Croatian agriculture (EI=expensive inputs; SA=slow administration; LCP=low cost of products; DCI=debt collection issue; PCMA=poor cooperation with the Ministry of Agriculture; SIS=too small and irregular subsidies; PCLG=poor cooperation with local governments; PASK=poor application of scientific knowledge; IP=inefficient production; CC=climatic conditions; LY=low yields; FC=foreign competition; IOC=inability to obtain credit)

Very interesting results are obtained by evaluation responsibility of some subjects regarding unfavorable situation in agriculture (Graph 2). According to farmers' view, the most responsible entities are Government (4,68), Republic of Croatia in general (4,63) and Ministry of agriculture (4,63). Less responsible are local (3,78) and regional (3,50) governments. The least evaluated responsibility takers are development & regional agencies (3,36), farmers (3,23), entrepreneurialship agencies (3,14) or someone else (2,63). So, farmers think level of responsibility goes from the highest institutions, via regional institutions to the micro institutions and themselves. Differences between the answers mostly are statistically significant ($P < 0,0001$).

But, when farmers are asked what entities can improve the situation, on the top is government as well (4,54), extension service (4,13) and farmers themselves (3,95). The second group of data makes development & regional agencies (3,98), educational institutions (3,86), local governments (3,82) and EU (3,80). There is statistically significant difference ($P = 0,0012$) between these two sets of answers (Graph 3). It is interesting that farmers do not expect considerable help of EU to solve the problems in Croatian agriculture.



Graph 2. Farmers' value of responsibility degree for the situation in in Croatian agriculture (GP=Government and Parliament; RCG=Republic of Croatia in general; MA=Ministry of Agriculture; LG=Local government; RG=Regional government (Counties); DRA=Development & Regional Agency; FT=Farmers themselves; EC=Enterpreunership centers; SE=Someone else)

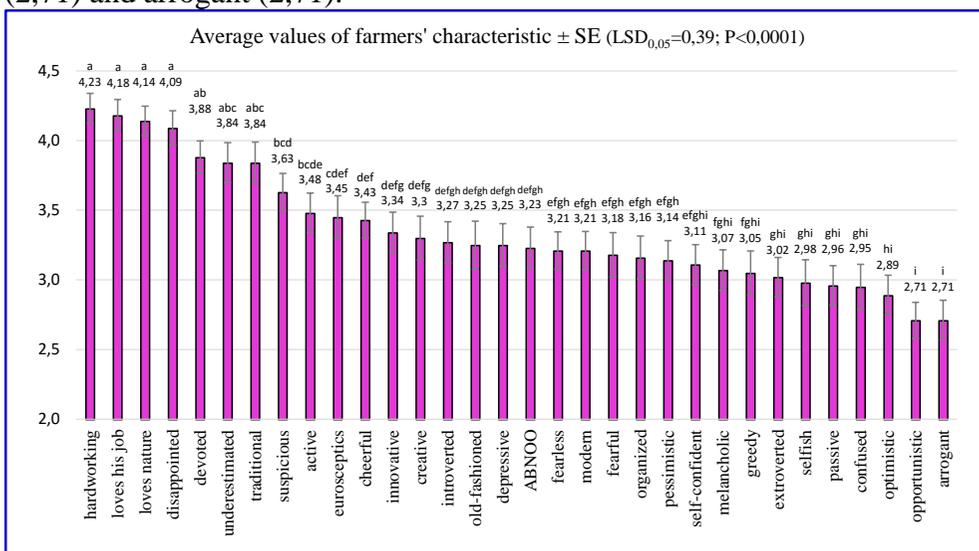


Graph 3. Farmers' evaluation of the importance of individual subjects for improving the situation in agriculture

(GP=Government and Parliament; ES=Extension Service; FT=Farmers Themselves; DRA=Development & Regional Agency; EI=Educational Institutions; LG=Local government; EU=European Union)

Characteristics of Croatian farmers

In the last question farmers were supposed to evaluate the characteristics that describe Croatian farmer the best (Graph 4). The highest rates were given to following characteristics: hardworking (4,28), loves his job (4,18), loves the nature (4,14) but disappointed (3,88) in the same time. The average farmers is also devoted (3,88), underestimate (3,84), traditional (3,84), suspicious (3,68), active (3,48), eurosceptical (3,45), cheerful (3,43), innovative (3,34) etc. The farmers don't see themselves as opportunistic (2,71) and arrogant (2,71).



Graph 4. Farmers' answer the question: "To what extent do the following characteristics describe farmers in Croatia?" (ABNOO=in agriculture because (s)he has no other optinos)

Conclusion

Croatia didn't used ten years of preparations for accession to the EU in an optimal way to improve the competitiveness of the food sector, but in the same time there were delays in attracting pre-accession funds. Now, Croatia is in a large, well-organized market with a very strong competition. Farmers younger and better educated than Croatian average participated in a survey. 70% of farmers legalized their business as family farms. These farmers take serious their business because they are members of Croatian farm register, VAT system and they receiving services of Croatian extension service. Inadequate preparation causing joining the EU didn't help situation in agriculture, but farmers still have faith in quality of food they produce

because more than a half believe Croatian food can be successfully marketed to the EU. Although general attitudes in Croatian society regarding cooperation in agriculture are pretty complicate and divided, farmers are aware of its benefits (evaluate better than problems). According to them, the main problem in Croatian agriculture are high input prices, slow administration and low market food price. Although farmers blame government and its ministries the most for unfavorable situation in agriculture, in the same time they expect the most improvement driven by government decisions. Farmers see themselves primarily as hardworking, dedicated to their job, nature loving people, but at the same level they are disappointed and underestimated due to current long-standing problems in agriculture. However, there is a hope that a new system of support for farmers and Rural development program 2014-2020 will help.

References:

- Božić, Miroslav, Gelo Ružica and Sever-Koren Anita. Croatian Agriculture and the European Union: which path for the future? *Sociologija i prostor*. 43 (1). 2009: 129-151
- Statistical yearbook. Croatian Bureau of Statistics. Zagreb. 2013.
- Franić, Ramona, Mikuš Ornella and Grgić Ivo. Agricultural Policy in Research of Croatian Authors of the 20th Century. *Društvena istraživanja*. Vol 21 (4). 2012: 989-1006
- Franić, Ramona, Jurišić Žaklina and Gelo Ružica. Food production and rural development – Croatian perspective within the European context. *Agroekonomia Croatica*. Vol. 4 (1). 2014: 16-24
- Franić, Ramona, Žimbek Tito and Grgić Zoran. Agricultural Policy in the Republic of Croatia from Agricultural toward Sustainable Rural Development. *Društvena istraživanja*. Vol 12 (6). 2003: 1027-1049
- Hadelan, Lari, Karlić Tea, Mikuš Ornella and Par Vjekoslav. Family farms decision making features. *Agronomski glasnik*. 74 (2-3). 2012: 91-107
- Horvat Hrvoje. The future of Croatian family farms (in Croatian: *Budućnost hrvatskih obiteljskih poljoprivrednih gospodarstava*). HND. 2014.
- Likert, Rensis. A technique for measurement of attitudes. *Archives of Psychology* No. 140. 1932: 1-55.
- Lončarić, Ružica, Kralik Igor and Zmaić Krunoslav. The impact of accession to the European union on the trade balance of cereals and milling industry products. *Book of abstracts: Environmentally acceptable production of safe quality food*. Faculty of agriculture. 2014: 21-22
- Lončarić, Ružica, Tolušić Zdravko and Tolić Snježana. Interaction of supply chain participants in the Eastern Croatia vegetable chain. *Acta Horticulturae*. Vol. 699. 2006: 277.-282.

- Matijašević, Anton. Co-operative Laws in Croatia: Development and Problems of Legislation Concerning the Agricultural Co-operatives. *Sociologija i prostor*. 43 (1). 2009: 153-170
- Župančić, Milan. Family Agricultural Holdings and Rural Development in Croatia. *Sociologija i prostor*. 43 (1). 2009: 171-194