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**Macro- and micro-level factors of successful agricultural co-operation in a transition
country: the case of Hungary**

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Abstract

The main research questions of present study are to examine the most important reasons and explanations for failure or success of new, emerging co-operatives and to analyse the main macro- and micro-economic conditions for successful collective action (e.g. marketing) done by producer-owned organisations (formal co-operation, e.g. co-operatives, producer organisations etc.) or by collaboration of agricultural producers without a legal form or written agreement (informal co-operation) in a NMS like Hungary. We use literature review and secondary data collection as well, but our main focus is on empirical level. In collaboration with Hungarian Chamber of Agriculture we gained information from 7,728 of its agricultural producer members on their co-operation activity through an on-line based empirical survey in summer 2015. According to the findings of the above national survey more than 51% of the respondents do not cooperate at all in any forms of cooperation. The biggest obstacle to co-operation is in the attitude of the farmers: they do not like to depend on anybody else and/or they do not like to commit themselves. Huge lack of information is also a big barrier. We conclude with listing the micro- and macro-level factors economic conditions for successful collective action.

Keywords: Trust, Co-operation, Hungary, Agriculture, Transition country

JEL Code: Q13, Q14

1 Introduction: background, aims and methods

According to a recent (2011-2012) European Research Project (“Support for Farmers’ Cooperatives” – hereafter SFC) agricultural co-operation is underdeveloped in most of the 27 member countries (Bijman et al., 2012). The latter statement is especially true in case of the Eastern and Central Europe hence in Hungary as well (see reports regarding Hungary: Szabó, 2012a,b; Ton and Szabó, 2012). Despite the many economic non-economic advantages of co-operatives and other producer owned organisations in co-ordination of agricultural producers, hence the apparent importance of the topic, there is still limited theoretical and empirical research on the emerging agricultural co-operatives in the New Member States (NMSs).

The main research questions of present study are to examine the most important reasons and explanations for failure or success of new, emerging co-operatives and to analyse the main macro- and micro-economic conditions for successful collective action (e.g. marketing) done by producer-owned organisations (formal co-operation, e.g. co-operatives, producer organisations etc.) or by collaboration of agricultural producers without a legal form or written agreement (informal co-operation) in a NMS like Hungary.

The two most important background researches behind the paper are the above mentioned SFC (see the general report by Bijman et al., 2012) and an on-going Hungarian research project. The general aim of our current research (OTKA Nr. K105730) is to examine the economic, sociological and psychological prerequisites and constraints in the agri-food economy in Hungary including the role of trust in co-operation.

Regarding methods we use literature review and secondary data collection as well, but our main focus is on empirical level. In collaboration with Hungarian Chamber of Agriculture we gained information from 7,728 of its agricultural producer members on their co-operation activity through an on-line based nationwide empirical survey in summer 2015. After data clearing we got 6,573 farms in our sample. We also conducted 33 semi-structured deep interviews in the Hungarian cereal, sugar beet, pig, dairy, fruit and vegetable, wine and sheep sectors in 2011-2012. In 2015, supplementing the above survey, we have made 32 more interviews with producers and also 25 more with integrating organisations in different sectors on co-operation issues.

2 Theoretical framework and main findings regarding NMSs of the ‘Support for Farmers’ Cooperatives’ Research Project

According to the above European Research Project (SFC) there are at least three main factors that determine the success of cooperatives in current food chains (Bijman et al., 2012: 16-17).

These factors relate to (a) position in the food supply chain, (b) internal governance, and (c) the institutional environment. The position of the cooperative in the food supply chain refers to the competitiveness of the cooperative vis-a-vis its customers, such as processors, wholesalers and retailers. The internal governance refers to its decision-making processes, the role of the different governing bodies, and the allocation of control rights to the management. The institutional environment refers to the social, cultural, political and legal context in which the cooperative is operating, and which may have a supporting or constraining effect on the performance of the cooperative (Bijman et al., 2012: 16-17). We use the above theoretical framework in our research.

As we mentioned in Introduction agricultural co-operation is underdeveloped in most of the 27 member countries (Bijman et al., 2012, COGECA 2015, Bíró et al. 2015 etc.) and market shares are very low in most of the examined sectors with the exemptions of dairy, fruit and vegetable as well as wine. The situation in the NMSs is even sadder, co-operatives have a very low market shares compared to the older member states, all of them are in the second half of the list of countries with less than 30% market share even in the most co-operatively developed ones. In Hungary the average market share of producer owned organisations is below 20%.

Agricultural economy in transition economics can be described by considerable uncertainties (Szabó, 2008; Mészáros and Szabó, 2014) especially because of underdeveloped market institutions. Apart from the traditional economic advantages (like increasing market power, reducing transactions costs and market risk for the producer-members etc.), co-operatives and other producer-owned organisations in NMSs have additional (often non-economic) advantages as well; for example they can contribute to rural development and secure jobs (by multifunctional agriculture, rural tourism, employment by the co-operative etc.) which are very important tasks especially in less favoured areas. In most new member states the above functions are essential for the population living in the country side.

In some other countries, like Hungary and Poland they also help to save the environment by offering traceability partly due to the long and close social relationship. Theoretically the co-ops contribute to social benefits (ethics, values etc.) as well as being socially responsible by nature however the latter statement has to be proved in cases of NMSs.

Apart from the above roles, there are some countries, like Hungary, Poland, Lithuania and Latvia where new types or emerging marketing co-ops and other POs are active in some sectors, like for example in dairy, cereals and fruit and vegetables and to some extent in pig sector (Poland). However, the most important problem is that those organisations are small and their

secondary level organisation and internationalisation level is very limited. Most of the co-ops in the MNSs belong to the emerging type of co-operatives.

Regarding trust and willingness to co-operate issues in NMSs, there is ‘.... a clear correlation between the level of general trust (operationalized as “trust in people”), and cooperative performance. Most of the countries with a high market share for cooperatives are high-trust countries’ (Bijman et al., 2012: 88).

Main conclusions of SFC project which can be drawn from the perspectives are the followings. There is more than one way of co-operative development in EU according to different history, different political history, different types of co-operatives, different identities. In case of NMS: social and cultural background, history and political context are extremely important. In most of NMS (like for example in Hungary) supports are indispensable while in other countries (e.g. Lithuania) the co-operation process strictly is a bottom-up one. While it is true that problems of farmers coming from market imperfections and co-ordination in the chains cannot be solved simply by the EU and/or government support, but they seem to be vital in the case of emerging producer groups, like co-operatives, to be able to set up. Trust and willingness to co-operate are key issues in all NMs. In the next sections we analyse Hungary as a transition country and NMS from the development of agricultural co-operation point of view.

3 Constrains of collaboration – co-operation among producers in the Hungarian agri-food economy

There are fundamental problems in Hungary concerning the emerging new agricultural co-operative system, like the share of the production-type co-operatives continuously decreases and the concentration of the emerging marketing co-operatives is limited especially because low level of secondary co-operation. Lack of transparency of the economy (black and grey markets) also makes negative impact on formal co-operation, as well as low level of capital endowment is a big problem in case of co-operatives and it is hard to get access to capital for most of them.

Of course the recent financial and economic crisis caused a lot of problems, especially due to the general lack of capital and insolvency of some trading partner as in the case of the flagship co-op Mórakert which had been a good positive example in a number of publications earlier (Bakucs et al., 2007, 2008a, b; Felföldi, 2005; Szabó and Fertő; 2004a,b) but it is under bankruptcy in the last years. It is very interesting that smaller co-ops (like Csabai Raktárszövetkezet) have less financial problems (e.g. demand for revolving capital) due their smaller marketed volumes.

However, apart from some legal regulation and macro-economic issues the main problem of the co-operation in Hungary is the lack of trust and the low level of social capital (Szabó, 2010, 2011, Szabó et al., 2011). A number international (Wiesinger et al., 2008) and Hungarian researches (Barta et al., 2010; Kapronczai et al., 2005, Szabó and Barta, 2014 etc.) showed that the willingness to cooperate is very low in Hungarian agriculture. In some cases support measures like purchasing machinery were counterproductive since crop farmers were not forced to co-operate because they could get access to all machines they needed. However farmers invested heavily into machines therefore they got less capital to invest in more value added activities. Producers often choose less formal co-operation, like in cases of machinery arrangements (Baranyai, 2015; Takács-Baranyai, 2010; Takács et al., 2012).

One of the obstacles of practical co-operation in Hungary is that in agriculture everybody knows the “secret” and does not like to accept somebody else’s decision. Sometimes producers think they know everything, so they do not need advices or collaboration and they often lack expertise and information how to set-up and run a co-op.

Heterogeneity of (potential or would-be) members might cause a problem in decision-making in co-operatives, however since the level co-operation is very low, it is not the uppermost question. It is also true that in some cases bigger farmers are not willing to co-operate with small ones, but generally speaking it mostly depends on the charisma of the founders/leaders of the co-operative to be able to handle this phenomenon (trust issues).

Among economic reasons the lack of capital is apparent that is why all the interviewed producers emphasised the importance of support measures. Co-ops have very limited ownership in processing industry due to lack of capital and vertical strategy thinking.

On macro level the very high level of VAT and the connected black and grey trade (which is estimated about 40% in some sectors) are very bad for co-ops and other producer organisations since they are less competitive due to the fact that they do everything white which is good for the whole economy but not for the members. Members could gain much from selling black for cash without any contracts or papers.

The other main problem regarding regulation is that administration is very sophisticated and the present upper limit of support (100,000 EUR in case of a producer group) is not preferential for concentration since producers will set-up more smaller organisation in order to get more support. That is one of the reasons why secondary co-operation is rare and not efficient. In the next session we present results from a nationwide empirical survey among agricultural producers.

4 Results of the empirical survey and interviews

First of all, some features of the examined sample are outlined. By analysing the staff conditions of farm management, the following main conclusions can be drawn: the leader of the farm in more than three-fourth of surveyed farms is male, the average age is around 50 years. The heads of the farms have 20-year experiences in farming on average. As regards their qualifications, it can be declared that most of the respondents have high-school qualifications (29.7%), skilled worker (23.7%) or college/BA/BSc (21.4%) qualifications. 66.4% of respondents reported about agricultural qualifications. Regarding the dependence on income from agricultural activities, it can be declared that about one-third of them have no income from other than agricultural sources; while one-fifth of respondents use the income from farming activities only as a supplementary source of subsistence, which provide less than 25% of their full income. The question must have been rather delicate considering that 793 respondents ticked „I cannot judge/do not want to respond” option when completing the questionnaire.

By examining the material conditions of farming, it can be concluded that most of the responding farms own some land, only 259 farms have no land at all. As regards livestock, 2,662 farms have some in different volumes. The average value of technical resources used for the support of farming was around HUF 18.8 million (approx. EUR 63,000) per farm.

The average annual sales revenues – indicating the economic performance by the economic units – amounted to HUF 14.3 million (approx. EUR 48,000). As it had been presumed, most of the farming units had less than HUF 1 million (about EUR 3,300) revenues, while altogether only 247 farms realized more than 100 million HUF (approx. EUR 330,000) revenues in 2014. Around 500 respondents refused to answer or could not give any substantive information regarding the question. The major proportion of surveyed farms were typically field crop farms (58.3%), or vegetable and fruit producers (17.6%), which means that most of their revenues come from these types of activities.

One of the main objectives of research was to give an overview of sales channels used by Hungarian agricultural enterprises. The monitoring results about the sales channels reveal that farmers sell their produce through multiple channels: 6,573 farms were surveyed in the sample and they named altogether 9,427 channels that they actually used. This means 1.43 channels on average per farm.

The outcomes of the survey have proved that the sale of produce supply from farming the most frequently is carried out via wholesalers/engrossers. Within this category the sales to organisations owned by non-producers are dominant: 3,302 respondents, that is 50.2% of the whole sample marked this channel, while producers’ organisations were named by 33.7%.

This latter can be explained by an empirical experience collected during in-depth interviewing in the frames of a former OTKA Research Project (K68467). According to this, the disadvantages of cooperatives compared to Ltd companies are as follows:

1. There are no significant differences in taxation and the existing neutrality in the field of competitive policy obviously results in competitive disadvantage.
2. In terms of financing, it is more reasonable to operate as a business association because it is easier to define the risk-taker and ensure bank capital, although some executives say that own capital and operating results are more important for the banks to assess creditworthiness.
3. Asset conditions are more obvious in Ltd companies, which have an impact on the ownership attitude as well.
4. More direct management which – as some may consider – is more flexible and quicker than the deferred management structure of a cooperative.
5. Smaller cooperatives are not able or willing to employ and pay for professional managers, which may backfire above a certain company size and market presence. .
6. The managing director, if employed, does not mix up their own (member) interests with the interests of the corporation.
7. The phrase ‘cooperative’ does not sound too good for many people therefore it is “cooler” to establish an Ltd. There are some opinions, however, contradicting to this and retail chains also more and more frequently express their content with the supplies arriving from cooperatives.
8. The cooperative is good as an ideology, but it is a retarding factor. .

Another typical way of selling is the sale directly to the final consumer. The most common form of this is the sale from house (1,549 respondents, 23.6% marked this). 774 (11.8%) farms sell directly to processing plants, while the number of those who sell to retail outlets (too) is negligible among the surveyed farms (Table 1)

The analysis of features for choosing a sales channel was extended regionally. In general, it can be concluded that there are no substantial differences in the choice of channels in the seven statistical regions of Hungary. There are, however, smaller differences, these include but not limited to the following on the basis of Table 1: the choice of selling on the wholesale market is strikingly high (16.8%) in the Southern Great Plain region (S-G-P) compared to values in other regional units; while the other Great Plain region (N-G-P) is more active in the sales through producer-owned engrosser/wholesaler organisations. Another experience to note is that the sales from the house, directly to the final consumer was marked by more than 30% of

respondents in three regions (North Hungary (N-H), Central Hungary (C-H), and Central Transdanubia (C-T), compared to the 23.6% national average.

Table 1: Choices of marketing channels

Marketing channels	National	Regions						
		S-G-P	N-G-P	N-H	C-H	C-T	W-T	S-T
	%							
Wholesale (spot) market	6,9	16,8	3,9	6,3	8,8	2,0	0,8	3,1
Engrosser/wholesaler(s)								
Producer owned (POs, Co-ops)	33,7	37,5	40,4	30,1	24,0	30,7	29,3	28,9
Non - producer owned (joint stock comp., Ltd)	50,2	51,2	53,9	44,8	36,7	44,6	52,7	54,1
Directly to final consumer								
From house	23,6	21,2	11,8	34,6	39,5	35,0	24,8	22,8
Producers' market	9,7	8,9	5,5	12,6	19,9	12,8	10,3	9,0
Directly to processor	11,8	9,5	13,7	14,6	16,5	13,1	9,7	9,5
Directly to retailers								
Chains	1,5	1,5	0,6	2,4	2,3	2,3	1,9	0,9
Individual shop	2,8	2,1	1,5	4,0	6,2	4,8	2,2	2,9
Other	3,2	3,3	1,5	3,9	5,4	4,9	2,8	3,2

Source: own calculation

The main target of research was to give an overview about the cooperation activity of farms. It is very regrettable that more than half of the surveyed farms (3,352; 50.9%) do not take part in any form of cooperation at all (see Figure 1). There are relatively substantial differences among the regions of Hungary. The North Hungarian region (N-H) is outstanding in terms of cooperation activity, here about 60% of respondents are engaged in some form of cooperation, but there is considerable activity in the Central Transdanubian (C-T), Western Transdanubian (W-T) and Southern Transdanubian (S-T) regions as well (50.5-54%). The lowest activity can be measured in the Southern Great Plain (S-G-P) region, where the participation rate is only 42%.

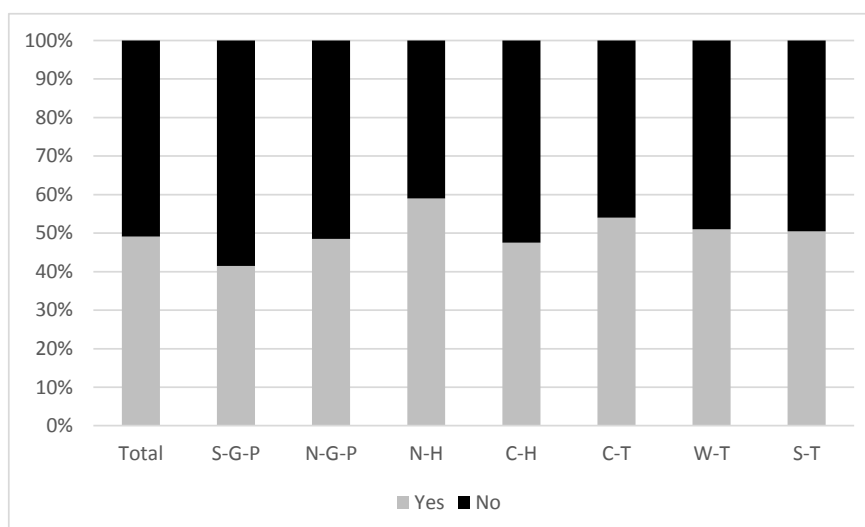


Figure 1: Do you participate in any form of co-operation?

Source: own construction

The outcomes of research to explore the reasons for abstaining from cooperation have proved that the main motive is the need to maintain independence. It is obvious from the fact that 907 people marked “I do not want to depend on or to be committed to or somebody” response option. Non-cooperating farmers also gave high scores to “I do not have enough information about the different forms of cooperation, I do not know my possibilities” (900 respondents); “I do not need it, I can do it on my own” (794); “There is no such cooperation nearby, which I could join” (727); and “I have had some bad experiences before” (610). It is important to know for the proper assessment of results that the questionnaire contained altogether 15 statements and one “Other, namely:” category. It is also interesting that for example the response “I do not trust my fellow farmers” was indicated by only 186 respondents as a reason for staying away from cooperation (Table 2).

The regional ranking of reasons to stay away from cooperation is basically homogenous, but one interesting feature should be noted: as it has been mentioned already, aversion towards cooperation is the most typical in the Southern Great Plain region (S-G-P) and at the same time the endeavours for independence in farming can be detected the most obviously in this region. As regards the North Hungarian region (N-H), which presented the highest cooperation activity, the respondents referred to the lack of information and possibilities as the most typical reasons. Altogether 3,321 responding farms declared that they were members of a formal or informal cooperation or participated in such cooperation. This group of farmers indicated altogether 8,206 forms of cooperation, which means that one farm was member or participant of 2.5 forms of cooperation on average.

Table 2: Reasons for failure to participate in co-operation - The top five reasons in the order of marking frequency

Top reasons	Total	Regions						
		S-G-P	N-G-P	N-H	C-H	C-T	W-T	S-T
I don't like to depend on or to be committed to anybody	1	1	1	3	3	1	1	3
I don't know my possibilities, I have not got enough information on the different forms of co-operations	2	3	3	1	1	2	2	2
I don't need it, I can do it on my own	3	2	5	4	4	4	3	1
No co-operation activity nearby which I could join to	4	5	2	2	2	2	4	4
I have had bad experiences	5	4	4	5	5	5	5	5

Source: own calculation

As regards formal (4,038), and informal (3,877) forms of cooperation, almost the same number of respondents marked each. The most popular form of formal cooperation, which was marked by the most respondents, was the producer-owned organisations (marked by 1,320 respondents, 41%), which means that 41% of farmers completing the questionnaire are members of this type of cooperation. It is followed – considerably lagging behind in terms of marking frequency - by the producer-owned business corporations (13%). Reviewing it regionally, there are smaller-bigger differences among the regions (Table 3).

Table 3: Activities in formal co-operation (Top 5)

Forms of formal co-operation (Top 5)	Total	Regions						
		S-G-P	N-G-P	N-H	C-H	C-T	W-T	S-T
	Relative frequency - in proportion of the number co-operative farms (%)							
(1) Producer-owned organisational form (POs, co-ops, machinery rings etc.)	41.0	48.2	47.2	34.8	36.4	34.3	35.5	37.9
(2) Producer-owned company (joint stock comp., Ltd. etc.)	13.0	18.8	12.2	10.3	11.4	11.4	8.1	14.3
(3) Product council	12.8	12.0	11.1	10.6	12.5	11.4	17.4	15.7
(4) Professional organisation (providing services like consultancy)	11.5	7.5	11.6	14.7	10.9	12.7	16.5	9.4
(5) Wine community	10.0	9.5	0.7	23.9	9.2	14.0	7.7	13.9

Note: Formal cooperation: mostly formally contracted cooperation, the operation of which is regulated by law.

Source: own calculation

As regards informal forms of cooperation, the most marks were given to „Lending technical resources and equipment to each other” (699), „Work based on reciprocity” (627) and „Machinery custom hire” (518) solutions. There were some minor deviations in responses regionally though (Table 4).

The questionnaire applied in the survey tried to identify those factors (see Table 4), which could be regarded as key motivation to enter the different cooperation. (The farmers could rank 25 statements on a Likert scale from 1 to 5 according to their relevance in terms of joining the cooperation (1 – Not at all; 5 – Totally relevant). The results have confirmed that the possibility of improving the safety of sales was the most stimulating to enter the cooperation (average 3.69). Further important motives were: improving the predictability of sales prices (3.37); increasing the bargaining power (3.31) and reducing the production risks (3.19). Regionally, there were not any significant differences in the responses.

Table 4: Activities in informal co-operation (Top 6)

Forms of informal co-operation (Top 6)	Total	Regions						
		S-G-P	N-G-P	N-H	C-H	C-T	W-T	S-T
	Relative frequency - in proportion of the number co-operative farms (%)							
(1) Lending technical resources and equipment (e.g. machinery) to each other	21.7	16.7	20.2	22.0	24.5	24.2	20.6	29.1
(2) Physical or machinery works based on reciprocity	19.5	16.4	17.1	18.2	25.0	20.0	16.7	28.9
(3) Joint selling	16.8	15.5	19.2	12.5	15.2	15.1	12.5	24.9
(4) Machinery custom hire	16.1	15.2	17.6	10.6	14.7	15.1	12.8	24.0
(5) Joint procurement of inputs	15.5	14.5	18.2	10.1	12.0	15.8	11.8	22.0
(6) Storage	15.1	15.5	16.4	10.9	15.2	15.1	10.4	20.4

Note: Informal cooperation: typically oral agreements on cooperation among friends, relatives and acquaintances. The content of the agreements is not regulated in legal terms; the conditions of operation are formed by the participating farmers.

Source: own calculation

We can summarise of the empirical findings of the above mentioned deep face-to-face interviews by listing the conditions for successful collective action (marketing) done by producer-owned organisations (on micro-level) as follows:

1. real economic necessity,
2. willingness to co-operate – demolition of mental/psychological barriers,
3. screening of potential members,
4. strict and exact quality and quantity requirements for products delivered to co-op/producers' groups (total traceability),
5. consistent adherence to delivery obligations regarding both quantity and quality (standardisation of commodities),
6. appropriate logistics, branding, product differentiation,
7. ensuring balanced (liquid) financing both short- and long-term,
8. to get a qualified, skilled and trustworthy manager (either outsider or an active member but professional),
9. efficient and multi-way communication(between members and management),
10. trust between members and management, as well as between members and leadership of the co-operative.

It is not likely that the above mentioned conditions can be found in all cases of successful producer owned organisations but if a co-operation can show most of the above features the organisation has a great chance to be successful in a long term both in development of membership as well as in turnover and market share.

5 Conclusions

According to the findings of the above national survey more than 51% of the respondents do not cooperate at all in any forms of cooperation. The biggest obstacle to co-operation is in the attitude of the farmers: they do not like to depend on anybody else and/or they do not like to commit themselves. Huge lack of information is also a big barrier: farmers do not know their possibilities and have not got enough information on the different forms of cooperation. Producers also choose “the lack of cooperation nearby I could join to” reason and some of them referred bad experiences in the past as a main problem. Most of the producers who do co-operate at all choose formal co-operation more likely and by far the most popular forms are producer owned organisations (like fruit and vegetable Producer Organisations) among them. A lot of producers take up opportunities offered by informal co-operation, the most popular forms being of lending technical resources (e.g. machines) to each other, joint selling, machinery/physical work based on reciprocity as well as machinery services for money. Examination of issues regarding co-operation on regional level shows different picture from the national experiences reported above.

We conclude that EU and/or governmental supports cannot solve all of the problems of agricultural co-operation in Hungary; hence further policy actions influencing macro-level factors are needed in order to demolish mental barriers (e.g. by education) and in order to distribute more information on the different ways and models of collaboration among producers and consumers. Although there are some recent developments going on, solving the problems of the black market and short-term financing of producer owned organisations are still important issues as well. Representatives of the interviewed organisations also emphasis the stabile and reliable legal environment as a prerequisite for more development in formal co-operation.

The other most important factor is the „human” of soft factor of cooperation. Willingness to cooperate and trust should be improved and major psychological obstacles have to be removed in order to facilitate co-operation among the farmers apart from distributing more information on the different models of co-operatives and other POs. Trust (as an input and also as an output of co-operation activity) problems are key issues thus we will pay special attention to it in our future researches and analyses.

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