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Interdependence between actors in the system and their role in increasing the performance of agribusiness in Albania – in focus Olive branch

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Abstract

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After 1990, olive factories were built mainly by family entities, near olive groves as a necessity for olive oil processing. The district of Vlora, Fier, Berat, Saranda, Delvina, Tirana, etc. mainly concentrated on olive factories. Firms operate mostly within the country. The products are sold in the local or regional market. Few companies have managed to gain access to international markets and export. The factories claim that they produce with high quality and technology, but the products do not meet the necessary standards to be exported by all firms. Most of the factories operate with old technology, but even the few factories that have modern technology in our country, carry out the processing process within 5-6 hours, increasing the acidity of the oil, while the processing must be done within 2-3 hours so that the oil does not contain too much acidity. But in order to be processed at the right time, the olive must reach the agro-processor at the right time, but this does not happen for many factors, thus reflecting a dysfunction of interdependence between the actors in the three links of the agribusiness system.

Keywords: olive factory; processing; agribusiness system; interdependence between actors in the system.

Introduction

After the 90-s, the olive cultivation and processing sector began to develop gradually, albeit at a slow pace. The challenges faced by farmers and processors in our country are many.

Nowadays, there are still many problems in this sector, the solution of which requires special attention from the state. One of the main problems for the processing sector remains the low technological level as well as the exploitation capacities which are very low. Another problem is the fact that these factories function more as service factories to farmers than as processing and selling the product in the market in order to maximize profits. This makes the product not competitive in the market. Also, the quality of the product is very low, the product lacks the relevant logo and brand of the manufacturer, and the storage and packaging facilities of the product also leave much to be desired. The olive production sector also faces a number of problems, among which we can mention: lack of agro-technical services, lack of integration of farmers in the markets, lack of proper tools for harvesting, lack of infrastructure and tools necessary to transport the product to the processor, etc.

Through this study, we will bring to attention some of the problems of non-functioning of the agribusiness system and we will provide some of the possible solutions to the problems in the system.

Justification of the Study

This study is an attempt to assess the state of the agribusiness system by analyzing and evaluating some of the

problems that exist concretely in the whole chain of olive branches and finding tools to increase the performance of actors in the system.

According to current assessments, studies show that the connections and interdependencies between links in the system are almost non-existent as there are a number of problems and a lack of coordination between actors in each link of the agribusiness system which has affected low system performance.

The study aims to realize and evaluate this reality and offer some solutions that contribute to the development of lasting links between the links and the actors of each link. One of the possible solutions that this study will offer, will be the use of agricultural contracts.

For the benefit and function of conducting this research, we will analyze the current state of production and processing of olive oil in fifteen districts of the country, identifying some of the real problems that exist between farmers and agro-processors.

The main objective will be the analysis and evaluation of the links between the actors (farmers and agro-processors) involved in the system, the mutual impacts and effects between them, in order to contribute later (as much as possible) towards the provision of strategies that enable the creation and strengthening of these connections.

Methodology and Data

a. Bibliographic review

b. Office work

c. Field survey (surveys)

d. Implementation of a multifactorial linear econometric model of the form:

$$Y = a_0 + a_1X_1 + a_2X_2 + \ldots. a_kX_k + e,$$

for the assessment of factors affecting the possibility of concluding agricultural contracts.

• Use of analysis of variance (ANOVA) to discuss differences between genders, professions and levels of education in terms of assessing the importance and role of contracts.

Problems that characterize the fillers in the system

The non-functioning of the agribusiness system is characterized by phenomena such as:

• Disconnection between the links of the agribusiness system

• Lack of mutual benefits between links in the system

• Lack of mutual influences between links in the system

• Difficulties in adapting supportive policies, etc.

This situation is presented quite clearly in the following diagram which gives an overview of the non-functioning of the agribusiness system in the country. This looks pretty good as the links in the system are disconnected from each other so we lack mutual benefits between the actors in the agribusiness system.

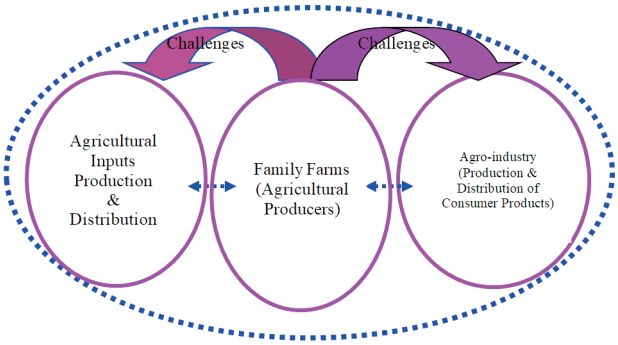

Fig. 1. Agribusiness system in the current situation

So this figure is presented the current situation of the agribusiness system, where the links of the system are separated from each other and in these conditions it is impossible to create a mutual benefit between all actors in the system.

Challenges to be Faced

Putting into operation the agribusiness system, which would enable:

• The connection between the links of the agribusiness system

• Increasing the mutual influences between the links in the system

• Ease of adapting support policies

• Increasing mutual benefits between links in the system.

Hypotheses

The above study is based on the study, analysis and confirmation of the following hypotheses:

• Our assessments so far show that for a significant number of agri-food industries, the links, interdependencies and mutual impacts between farms and agro-industry (part of the agribusiness system) are non-existent, which is associated with the negative phenomenon in the performance of agribusiness system.

• Enabling contracts is not closely related to their implementation, limited supply, the possibility of finding reliable partners and risk.

Sample and Selection of Respondents

In this study, we have taken as an object of analysis the olive fillet for the last three years. The sample taken in the

analysis consists of a number of entities operating on the olive branch. More specifically the sample includes:

- Agro-processing enterprises (100 such)
- Production farm (136 such)
- Areas with the highest production intensity

A questionnaire consisting of two parts was used to interview agro-processors and farmers:

- the first part provides information for agro-processors
- the second part provides information for farmers.

Performance Indicators for Olive Oil Filler

In favour of the hypotheses raised, we are presenting some possible indicators that will help us in treating the multi-factorial model for measuring performance in the olive fillet.

The performance of this filter will be measured by taking into account factors such as:

- % of raw material from the farm
- % of contracted supply
- % of signing contracts by farmers
- % of contract signing by agro-processors
- % of sales in the domestic market
- % of sales in the regional market, etc.

Information on the above indicators was obtained through field interviews conducted for both farmers and agro-processors based on the relevant questionnaires.

Below are some of the potential indicators that affect the performance of the agro-processing industry.

In our preliminary judgment, the above-mentioned factors have a major impact on increasing the performance of the agro-processing industry. So for example, the greater the domestic capital, the greater the experience since its inception, the greater the use of local raw material, the greater the trust in partners, the greater possibility of signing contracts and consequently, the higher will be the performance of the agro-industry sector.

Factors Affecting the Performance of Farmers

There are a number of important factors (schemes below) which have a positive impact on increasing performance for farmers engaged in olive cultivation. The statistical evaluation of the above factors explains how important these factors turn out to be in the possible growth of the agribusiness system.

As for the olive oil processing industry, the above-mentioned factors have a great impact on increasing the performance of the farm and the agro-processing industry as a whole.

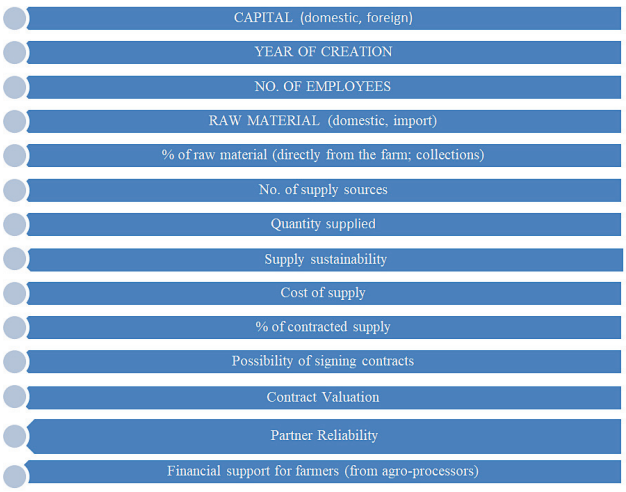

Fig. 2. Factors affecting the measurement of agro-industry performance

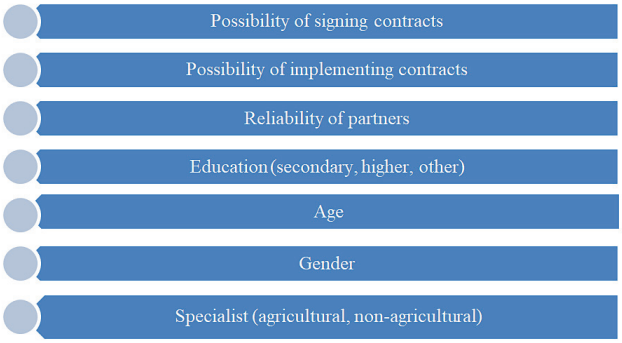

Fig. 3. Factors affecting the measurement of farmers' performance

Assessment of raw material supply issues

Regarding the problem of supply of raw materials from domestic production, we have made an assessment of some problems raised where:

- 1 indicates that there are many problems
- The rating is marked with 2 ---- average problems
- The rating is marked with 3 ---- few problems
- The rating is marked with 4 ---- very few problems
- The rating is marked with 5 ---- no problem

For all the problems we have raised, this total assessment has resulted according to the districts and the form of ownership (Table 1).

As can be seen from the table for most of the questions raised there is a rating greater than 3, which means that all the above problems raised cause few problems regarding the

Table 1. Evaluation of the problems of raw material supply

Number	The problem	Average rating
1	No. of supply sources. with raw material	3.49
2	Diversification of supply sources	3.10
3	Sustainability of supply sources	3.12
4	Reliability of supply sources	3.77
5	Quantity supplied	3.33
6	Quality of supply	3.51
7	Cost of supply	3.09
8	Supply risk	3.15
9	Speed of supply	3.41

supply of domestic raw materials to the agro-industries obtained in the analysis.

Evaluate the Efforts of Agro-Processors to Establish Links with Domestic Producers

We also analyzed and evaluated the efforts of agro-processors to establish a connection with domestic producers, an evaluation which results as follows:

- With 1 is rated as ---- not significant
- With 2 is rated as ---- less important
- With 3 it is rated as --- moderately important
- With 4 is rated as --- important
- 5 is rated as --- very important

The following table gives an average assessment of the efforts of agro-processors to connect with domestic producers, an assessment which results as follows (Table 2).

In general, agro-processors wanted to have an impact on the above issues, but almost all agro-processors were only interested in identifying the producers they could produce for them and were not interested in the way or technical-financial conditions that would produce the raw material. first. Although everyone was interested in a quality product, the supply of raw materials to be realized in a timely manner, etc. again they were reluctant to invest in this sector. This is due to the fact that the mutual interaction between the actors in the system is still very weak.

Farmers' Assessment of the Problems that Exist for Concluding Agricultural Contracts

The problems that exist over the possibility of concluding contracts between farmers and agro-processors are numerous. Below we present the average assessment of farmers for the issues raised regarding agricultural contracts by gender, age, education, and profession (Table 3).

- Where with 1 rating is ---- very problematic
- With a 2 rating it is ---- moderately problematic
- With 3 rating is --- a bit problematic
- With 4 rating is --- very little problematic
- With a 5 rating is ---- no problem

As can be seen from the assessment of the above problems in general the 136 interviewed farmers have almost the same opinion regarding the above problems for agricultural contracts. The average rating at the judgment of farmers fluctuates in the interval [moderately problematic and slightly problematic].

According to the evaluation of the above criteria, the evaluation of the problematic of contracts for farmers turns out to be moderately problematic. This is due to the fact that

Table 3. Average rating of farmers on the issue of contracts

Number	The Problem	Evaluation
1	Possibility of concluding contracts	2.1
2	Possibility of enforcing contracts	2.3
3	Possibility of reliable buyers	2.4
4	Possibility of good price	2.2
5	Reliability of partners	2.6
6	Limited offer	2.5
7	Trust in arbitration bodies	2.6
8	Implementation of contracts by quantity	2.7
9	Implementation of contracts by quality	2.7
10	Execution of contracts according to the time of supply	2.7
11	Ongoing implementation of contracts	2.4
12	Supply risk	2.5

Table 2. Average evaluation of agro-processors' effort

Number	The problem	Average rating
1	Efforts to identify manufacturers	3.97 (almost important)
2	Your impact on the type of output they should produce	3.68 (almost important)
3	Your impact on the cultivar	3.80 (almost important)
4	The financial support you give for the production of seeds, seedlings	3.42 (moderately important)
5	The financial support you provide for the cultivation of the land	2.82 (slightly important)
6	Financial support for the implementation of good agro-technical practices	3 (moderately important)
7	The financial support you provide for transportation	3.21 (moderately important)

first farmers do not yet have the right culture to use agricultural contracts in any sales-purchase relationship; they also have a significant lack of information on how to draft and implement written agricultural contracts between the parties and another reason is that they are not very interested in signing a contract, as processing factories are built near areas where olives and farmers are produced. and processors agree verbally on quantity, quality, and delivery time, and make a sale price forecast (although this indicator makes farmers hesitant about their sales) and try to get both parties to do so. to respect the agreement made orally. Thus they also reduce the notarial costs of signing contracts.

Some Multifactorial Linear Econometric Models for Evaluating Agricultural Contracts

Below are some linear econometric models for contract evaluation. Econometric models serve to detect the interrelationships that exist between a group of other variables.

Econometric model on the possibility of concluding agricultural contracts

- Dependent variable: the possibility of concluding contracts (MUNKON) (possibility of concluding contracts)
- Independent variable: contract implementation (ZBATKON) (contract implementation)

Dependent Variable: MUNKON				
Method: Least Squares				
Sample: 1 100				
Included observations: 100				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.004260	0.150080	0.028383	0.9774
ZBATKON	0.724957	0.048766	14.86596	0.0000
ZBATVAZH	0.167181	0.051909	3.220668	0.0017
R-squared	0.754791	Mean dependent var		1.900000
Adjusted R-squared	0.749735	S.D. dependent var		1.243163
S.E. of regression	0.621910	Akaike info criterion		1.917499
Sum squared resid	37.51693	Schwarz criterion		1.995654
Log-likelihood	-92.87496	F-statistic		149.2907
Durbin-Watson stat	1.797562	Prob(F-statistic)		0.000000

- Independent variable: implementation of contracts in terms of continuity of supply (ZBATVAZH) (implementation of continuity of contracts)

Sample included = 100 Agro-processors

To make the general assessment, the multifactorial linear model of the form was used:

$$Y = a0 + a1X1 + a2X2 + e$$

$$MUNKON = a0 + a1\ ZBATKON + a2\ ZBATVAZH + e$$

From data processing, we obtained the following results:

So the model is: MUNKON = 0.0042 + 0.72 ZBATKON + 0.167 ZBATVAZH + e

Interpretation:

- A0 = 0.0042 --- indicates the possibility of concluding contracts when the independent variables are zero and the effect of other factors do not change. There is no concrete meaning.
- A1 = 0.72 --- indicates that if X1 (ZBATKON), increases or decreases by 1 unit then Y (MUNKON) increases or decreases by an average of 0.72 provided that X2 (ZBATVAZH) does not change.
- A2 = 0.167 --- indicates that if X2 (ZBATVAZH) increases or decreases by 1 unit then Y (MUNKON) increases or decreases by an average of 0.167 provided that X1 is constant.
- The coefficient of determination = 0.75 shows that 75% of the variation Y (MUNKON) is explained by the variance of X1 (ZBATKON) and X2 (ZBATVAZH) together while the remaining part is explained by the other remaining factors (e).
- The correlation coefficient (R) = 0.74 indicates the bond strength. The closer this connection is to 1, the stronger and more positive this connection is. So the possibility of concluding contracts is greatly influenced by the possibility of enforcing contracts and enforcing contracts in terms of continuity of supply of raw materials.
- If contract implementation (ZBATKON) will improve by one degree then MUNKON will increase by 0.72 degree.
- If the implementation of contract continuity (ZBATVAZH) will improve by one degree then MUNKON will increase by 0.167 degree.

Econometric model 2 on the possibility of concluding agricultural contracts

- Dependent variable: the possibility of concluding contracts (MUNKON) (possibility of concluding contracts)
- Independent variable: supply limit (KUFOFER)
- Independent variable: the possibility of finding reliable partners (MUNPART)

Dependent Variable: MUNKON				
Method: Least Squares				
Sample: 1 100				
Included observations: 100				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.155598	0.291500	0.533784	0.5947
KUFOFER	0.267338	0.105023	2.545505	0.0125
MUNPART	0.451777	0.097643	4.626839	0.0000
R-squared	0.315277	Mean dependent var		1.900000
Adjusted R-squared	0.301159	S.D. dependent var		1.243163
S.E. of regression	1.039243	Akaike info criterion		2.944403
Sum squared resid	104.7626	Schwarz criterion		3.022558
Log likelihood	-144.2202	F-statistic		22.33160
Durbin-Watson stat	1.714778	Prob(F-statistic)		0.000000

Modeli: Y= a0 + a1X1 + a2 X2 + e

MUNKON = 0.155 + 0.26KUFOFER + 0.45MUNPART + e

• A0 = 0.155 indicates the possibility of concluding contracts when the independent variables are zero and the effect of other factors do not change.

• A1 = 0.26 --- indicates that if X1 (KUFOFER), increases or decreases by 1 unit then Y (MUNKON) increases or decreases by an average of 0.26 provided that X2 (MUNPART) does not change.

• A2 = 0.45 --- indicates that if X2 (MUNPART) increases or decreases by 1 unit then Y (MUNKON) increases or decreases by an average of 0.45 provided that X1 (KUFOFER) is constant.

• The coefficient of determination = 0.31 shows that 31% of the variation Y (MUNKON) is explained by X1 (KUFOFER) and X2 (MUNPART) together while the remaining part is explained by the other remaining factors (e).

• Correlation coefficient = 0.30 indicates the strength of the bond. The closer this connection is to 1, the stronger and more positive this connection is. The possibility of concluding contracts is affected but not much by the limitation of the offer and the possibility of securing reliable partners, although this connection is positive but not very close to 1.

• If the supply limit will be reduced by one degree then MUNKON will be reduced by 0.26 degrees.

If MUNPART will improve by one degree then MUNKON will increase by 0.45 degrees.

Conclusions and Recommendations

The findings of this research confirm that:

• Relationships, interdependencies and mutual impacts between agricultural production farms and agro-industry are non-existent therefore the links between farmers and agro-processors are weak and very problematic, in these conditions, it is difficult to think that there may be partnership or value transfer between them.

• The olive processing sector in our country is constantly growing, constantly increasing investments in this sector due to the fact that it is seen as a profitable sector where most of the capital used by agro-processing enterprises, regardless of their form of organization, is capital. domestic and very little foreign or mixed (domestic + foreign capital).

• The production capacity of these agro-industries is also low and the percentage of utilization of these capacities is not always high. Agro-industries aim to increase production capacities in the future.

From all the above indicators that have been analyzed, we can say that the first hypothesis stands as true as the practical and real aspect shows that between the actors in the agribusiness system written agricultural contracts do not work. This means that the connections, interdependencies and mutual impacts in the agribusiness system are almost non-existent, which testifies to the low performance of the agribusiness system.

While the second hypothesis falls down and the opposite is proven, so the factors analyzed in the above models turn out to be important for the possibility of concluding contracts (MUNKON).

So if we have to have contractual relations, this will be seen in relation to the implementation of contracts, the implementation of the continuity of contractual relations, the limitation of the offer, the possibility of partnership, the quantitative implementation of contracts and the risk. It is statistically proven that these indicators have a statistical im-

pact on the possibility of concluding contracts.

Considering the above findings of this paper, some recommendations can be offered:

• In order to increase the performance of agribusiness enterprises, we recommend the use of long-term agricultural contracts between actors in the system which will affect the growth and development of agriculture and its sustainability.

• Transformation of oil production lines into genuine factories, through horizontal integration strategies.

• Integration of farmers through the establishment of sales cooperatives.

• We recommend that the olive oil product be offered on the market by processors with suitable packaging and also contain the logo or trademark of the firm.

• To consider the comparative advantages of locally produced olive oil in international markets, and to aim at:

- ❖ increase the quality of the product according to the defined standards;
- ❖ increase exports and decrease imports.

• Build favourable policies for further development of olive groves or improvement of existing olive groves.

• Develop supportive policies for the olive agro-processing sector, both for technological improvement and the establishment of sound factories.

• Develop supportive policies to increase production in the processing sector in order to reduce the amount of imported oil.

• For processors to be successful in their activity, we recommend that:

- ❖ enter into long-term contracts with suppliers;
- ❖ support them with the necessary agro-technical services;
- ❖ provide them with financial assistance, etc.

• In order to improve the production of olive oil, both in terms of quality and quantity, strategies must be built that make it possible to fight olive diseases.

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