

## RESEARCH ON THE ASSOCIATION OF FRUIT GROWERS IN ROMANIA

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### Abstract

*Taking into account the fact that the trade balance with fruits, in the case of Romania, presents an accentuated deficit, which worsens from one year to another. The main solution for this sector is the association of fruit growers, but their association is poorly developed. The main purpose of this study is to identify the reasons behind the fact that fruit growers are poorly organized and there is a small percentage of those who are part of an associative form, in order to identify solutions. The questionnaire method was used in this paper, in which 388 fruit growers responded. Also, the statistical interpretation was performed by analyzing the Pearson and Cramer indicators, but also the non-parametric Chi-square test.*

**Key words:** association, fruit growing, fruit sector, fruit

### INTRODUCTION

The variety of links that are established between the agricultural sector and other sectors of the national economy, but also within agriculture (between economic agents and the units of storage, processing and sales of products) determine the relations of association and cooperation [1, 2, 4, 5].

According to Law no. 164/2016, the agricultural cooperative represents an autonomous association of natural and / or legal persons, as the case may be, legal person of private law, established on the basis of the free consent expressed by the parties, in order to promote the interests of cooperating members (according to cooperative principles); of the implementation of agricultural policies to stimulate the association of producers in the field, which is organized and operates according to the provisions of the law [15].

The agricultural cooperative is established and operates with at least five people and carries out an economic, technical and social activity intended for the provision of goods, services and jobs, exclusively or mainly for its members, being composed of two types of agricultural cooperation: grade I (formats

from individuals) and grade II (from individuals and legal entities) [3, 6, 7, 11, 12]. Among the main advantages of agricultural cooperatives are: the democratic character, the need for a small capital for their establishment, as well as fiscal facilities, such as taxes, subsidies, but especially facilities in terms of accessing European funds (higher score on selection criteria, in the vast majority of funding sub-measures through the NRDP). According to Law No 36/1991, producer groups are for-profit legal entities and their own economic management and farmers' associations that jointly sell the products obtained. Production costs can be optimized through producer groups, prices can be set and cultivation practices can be promoted [14]. Producer groups have a number of advantages, ranging from reducing production costs, the possibility of applying modern technologies, to plan and modify production, accessing European funds, to facilitating communication between farmers, increasing bargaining power or better promotion of production on the domestic and foreign market [8, 9, 10, 13].

## MATERIALS AND METHODS

In order to determine the current situation of the fruit sector, as well as the reasons behind the fact that fruit growers are poorly organized and there is a small percentage of those who are part of an associative form, a questionnaire consisting of 18 questions was applied. The questionnaire was distributed between March 15 and April 15, 2021, being applied to fruit growers in Romania. The data resulting from the application of the questionnaire were collected in electronic format, and the completion of the questionnaire was not assisted. The questions asked were closed and allowed the respondents to choose a single answer. The response rate was 100%. All data were obtained and processed with the consent of the respondents.

The applied questionnaire allowed the centralization of 388 respondents, and at a probability of 95%, with a margin of error of +/- 5%, the size of the representative sample was determined at a number of 384 respondents.

Data processing in terms of descriptive statistics was done using the Chi-Square, Pearson's R, Cramer V coefficients and the critical value (to highlight the associations between the variables), using the SPSS statistics program (SPSS Statistics 20 (IBM Software Group)), Chicago, IL).

### *Questionnaire questions:*

- Q1 - What is your age?
- Q2 - What studies do you have?
- Q3 - What legal personality do you have?
- Q4 - What is the area of the fruit farm you own?
- Q5 - What is the system used in your farm?
- Q6 - Which fruit species are mainly cultivated?
- Q7 - Where do you get most of the input needed to carry out the production activity?
- Q8 - How do you capitalize on the production obtained on the farm?
- Q9 - Are you considering joining an associative form?
- Q10 - What is the main reason why you are not part of an associative form?

Q11 - Do you know the advantages of the association?

Q12 - Do you know the current legislation on the association of agricultural producers?

Q13 - How would you appreciate the following advantages of the association?

Q14 - How do you think decisions should be made at the level of an associative form?

Q15 - In a form of association, do you consider that there should be a policy on expenditure control?

Q16 - In a form of association do you consider that there should be a policy regarding sales prices?

Q17 - Do you think that associating agricultural producers would reduce intermediaries?

Q18 - How should the profit be distributed within the associative form?

### *Working hypotheses:*

I1 - most fruit farms are without legal personality.

I2 - orchards are characterized by their small size.

I3 - most fruit farms use an extensive planting system.

I4 - The most cultivated fruit species in Romania are represented by plum and apple.

I5 - most agricultural producers market their production through intermediaries.

I6 - There is still a reluctance on the part of producers to be part of an associative form.

I7 - Fruit growers do not know the benefits of the association.

## RESULTS AND DISCUSSIONS

Regarding the age of the respondents, the most representative are those who are between 40 and 65 years old, representing 52.32% of the total number of respondents to the questionnaire. In a significant percentage, those over 65 years old represent 33.25% of the total respondents, while only 14.43% of respondents are between 18 and 40 years old (Question 1).

Regarding the level of studies of the respondents, it can be observed that most of the respondents have only completed secondary education (47.68%), while 38.92% of the respondents have completed high

school and only 13.40% have completed university studies (Question 2).

Regarding the form of organization of fruit farms, 87.11% of respondents own farms without legal personality, while 8.76% are organized in authorized individuals, sole proprietorships or family businesses. Only 4.12% of respondents have fruit farms organized as limited liability companies or joint stock companies (Question 3).

Regarding the managed area, the most representative are the fruit growers who work an area of less than 2 hectares (77.58%), followed by those producers who have an agricultural area between 2 hectares and 5 hectares (13.66%). Only 5.67% of respondents work an agricultural area between 5 hectares and 20 hectares. Agricultural producers working more than 20 hectares represent 3.09% of the total number of respondents to the questionnaire. The data obtained from the centralization of the answers provided by the 389 farmers regarding the cultivated area show that most of them work an area of less than 5 hectares, while the respondents who exploit an area of less than 5 hectares total 8.76% of the total. The data obtained reflect the reality faced by Romanian fruit growing, where small and very small fruit farms predominate, and they are insufficiently adapted to the market (Question 4).

Regarding the cultivation system used in the fruit farms of those who answered the questionnaire, it is noted that 80.93% of

respondents use the extensive, traditional cultivation system, with a distance between the trees and with classic maintenance works of trees. Only 12.89% of respondents have intensive orchards, while only 6.19% of respondents have super intensive orchards (Question 5).

Regarding the structure of the respondents according to the predominant fruit species in the plantation they work, it can be noticed that out of the total of those who answered the questionnaire, 46.65% have plum plantations, 28.87% have apple plantations, 8, 76% have cherry plantations, 4.38% have pear plantations, 3.09% have walnut, hazelnut and almond plantations, only 2.58% have peach and nectarine plantations (Question 6).

Of the total number of respondents to the questionnaire, 57.73% of them buy the inputs necessary to carry out the activity from the phytopharmacies in the area where they operate. 31.96% of respondents procure the necessary inputs through distribution companies, while only 9.28% turn directly to producers to purchase inputs (Question 7).

Regarding the way of marketing the fruits obtained in fruit farms, most of the respondents, 54.64% of them capitalize on production through intermediaries, 26.80% of respondents capitalize on production through their own processing unit, while only 15.46% of respondents sell production directly in fairs and markets. Only 3.09% of respondents capitalize on their production through cooperatives or producer groups (Question 8).

Table 1. Analysis of the structure of the respondents regarding the option to join an associative form, according to their opinion regarding the knowledge of the current legislation on the association of agricultural producers (Q9)

Specification	U.M.	Yes	No	I do not care	Total	
		No.	No.	No.	No.	%
Yes	No.	30	16	0	46	12%
No	No.	0	221	30	251	65%
I'm undecided	No.	4	70	17	91	23%
Total	No.	34	307	47	388	100%
	%	9%	79%	12%	100%	
Chi-Square =	214.11	Critical Value =	9.49			
Cramer's V =	0.53	Pearson's P =	0.60			
P- value =	3.47E-45	Probability level =	0.05			
Degrees of freedom (df) =	4					

Source: processing of data obtained from the application of the questionnaire.

Determining a Chi-square value of 214.11 and a critical value of 9.49 (probability of 0.05), regarding the structure of the respondents regarding the option to adhere to an associative form depending on their opinion regarding the knowledge of the current legislation on the association of agricultural producers, there is a very significant association between the structure of respondents regarding the option to join an associative form and their opinion on the knowledge of current legislation on the association of agricultural producers, so we can say that there are very significant

differences for those who do not intend to join an association and those who do not know the current legislation on the association of agricultural producers (Table 1).

The Pearson coefficient has a value of 0.60 (Cramer V = 0.53), which indicates that there is a close link between the two variables, varying in the same direction, so we can say that the structure of respondents on the option to adherence to an associative form is influenced by their opinion regarding the knowledge of the current legislation on the association of agricultural producers (Table 1).

Table 2. Analysis of the structure of the respondents opinion on the advantages of the association regarding production planning and modification and facilitating access to European funds (Q11)

Specification	U.M.	Very interesting	interesting	A little interesting	no interest	Total	
		No.	No.	No.	No.	No.	%
Very interesting	No.	138	8	0	0	146	38%
interesting	No.	4	170	4	0	178	46%
A little interesting	No.	4	16	44	0	64	16%
no interest	No.	0	0	0	0	0	0%
Total	No.	146	194	48	0	388	100%
	%	38%	50%	12%	0%	100%	
Chi-Square =	538.39	Critical Value =	16.92				
Cramer's V =	0.68	Pearson's P =	0.76				
P- value =	3.43E-110	Probability level =	0.05				
Degrees of freedom (df) =	9						

Source: processing of data obtained from the application of the questionnaire.

Determining a Chi-square value of 538.39 and a critical value of 16.92 (probability of 0.05), regarding the structure of the respondents opinion on the advantages of the association regarding the planning and modification of production according to the structure of the respondents' opinion with on the benefits of the association on facilitating access to European funds, there is a very significant association between the structure of respondents on the benefits of the association on planning and modifying production and the structure of respondents on the benefits of the association on facilitating access to European funds. Stated that there are very significant

differences between those who consider the advantage of planning and modifying production to be interesting and those who say that the advantage of facilitating access to European funds is interesting (Table 2).

The Pearson coefficient has a value of 0.76 (Cramer V = 0.68), which indicates that there is a close link between the two variables, varying in the same direction, so we can say that the opinion of respondents on the benefits of association regarding production planning and modification is influenced by the respondent's opinion on the advantages of the association regarding facilitating access to European funds (Table 2).

Table 3. Analysis of the structure of the respondents opinion on the existence of a policy regarding the control of expenses within a form of association, depending on their opinion, regarding the existence of policies for selling prices

Specification	U.M.	Yes	No	I don't know / I don't answer	Total	
		Nr.	Nr.	Nr.	Nr.	%
Yes	Nr.	327	9	12	348	90%
No	Nr.	4	8	0	12	3%
I don't know / I don't answer	Nr.	4	0	24	28	7%
Total	Nr.	335	17	36	388	100%
	%	86%	4%	9%	100%	
Chi-Square =	323.30	Critical Value =	9.49			
Cramer's V =	0.65	Pearson's P =	0.67			
P- value =	1.02E-68	Probability level =	0.05			
Degrees of freedom (df) =	4					

Source: processing of data obtained from the application of the questionnaire.

By statistical testing of the representative respondents, with a Chi-square value of 323.30 and a critical value of 9.49 (probability of 0.05), on the opinion of the respondents regarding the existence of a policy aimed at controlling expenditures in a form depending on their opinion on the existence of sales price policies, there is a very significant association between the opinion of the respondents regarding the existence of a policy aimed at controlling expenditure in a form of association and their opinion on to the existence of policies aimed at selling prices, so we can say that there are very significant differences in terms of those who agree with the existence of spending control policies in an associative form and those who agree with the existence of policies aimed at selling prices, so we can say that the opinion of respondents about the existence of a policy aimed at controlling expenditure within a form of association is influenced by their opinion on the existence of policies aimed at selling prices (Table 3.).

The Pearson coefficient has a value of 0.67 (Cramer V = 0.65), which indicates that there is a close link between the two variables in intensity, varying in the same direction, so we can say that the opinion of respondents with reference the existence of a policy aimed at controlling expenditures within a form of association is influenced by their opinion regarding the existence of policies aimed at selling prices (Table 3).

Regarding the way in which decisions should be taken at the level of an associative form, to a large extent, the respondents are of the opinion that the decisions at the level of the associative form should be taken by the majority of members (50.52%), while 26.03% among the respondents believe that decisions should be taken with the consent of all members. Also, 22.42% of those who answered the questionnaire believe that decisions should be taken by representatives elected by members (Question 14).

Taking into account the answers provided by those who completed the questionnaire, it can be noted that 89.69% of respondents consider it necessary that, at the level of an associative form, to have a policy regarding expenditure control. Only 3.09% of respondents believe that such a policy of controlling expenditure at the level of an associative form is not needed (Question 15).

Asked about their opinion on the existence of a common policy for fixing the selling prices of agricultural products at the level of an associative form, 86.34% of respondents consider that such a policy is necessary, while only 4.38% among the respondents consider that such a policy is not necessary (Question 16.).

The distribution of profit at the level of an associative form is a very important aspect. Regarding this aspect, most of the respondents (43.81%) are of the opinion that the decision on the distribution of profit at the level of an associative form should be taken by the

decision of the majority. 32.47% of respondents believe that the decision on profit sharing should belong to all members. Only 20.62% of respondents believe that the profit recorded at the level of an associative form should be automatically reinvested (Question 17).

## CONCLUSIONS

The distribution of respondents according to age reflects the degree of aging of fruit growers and the low percentage of exchange between generations. In order to develop the fruit and agriculture sector in general, support measures are needed to encourage young people to take over family businesses or start their own businesses, improve farm productivity and find new ways to sell production, adapted to current conditions.

The significant share of respondents who completed only secondary school education can be explained by the fact that most fruit growers who answered the questionnaire are elderly and have an average level of education, while farmers with completed high school or university education are 52.32% of the total number of respondents to the questionnaire.

The significant share of extensive orchards indicates the high degree of aging of orchards, in particular because intensive and super-intensive systems are suitable for early fruit species, grafted on medium-vigor vegetative rootstocks and can be implemented for species like apple, pear, peach, plum, cherry and sour cherry orchards.

Based on the answers provided by the fruit growers who completed the applied questionnaire, it is necessary to develop a strategy on the development of the fruit sector - Horizon 2050. The general objective of this strategy is to develop a viable fruit sector to ensure domestic demand for fruit and reduce trade deficit in this segment. The specific objectives should focus on:

-Continuation of financing measures dedicated to the fruit sector, in order to rejuvenate fruit farms.

-Elaboration of new fiscal measures, meant to encourage the association of fruit growers.

-Measures to promote the advantages of joining an associative form.

## REFERENCES

- [1]Anderca, C., 1994, Association and cooperation forms in the agriculture of the developed countries with market economy. Symposium of Agrarian History and Retrology (Forme de asociere și cooperare în agricultura țărilor dezvoltate cu economie de piață, Simpozionul de Istorie și Retrologie Agrară), Bacău.
- [2]Apetroaie, C., 2003, Perspectives of the cooperation and association in the agriculture of Iasi County. (Perspectivele cooperării și asocierii în agricultura județului Iași), Consultanța agricolă ieșeană, No. 3-4, Iași.
- [3]Apetroaie, C., 2008, Actual practical approaches in the association of the agricultural producers ( Abordări practice actuale în asocierea producătorilor agricoli), Scientific Papers Series Agronomy, Iasi, Vol.51.
- [4]Bercu, F., Micu, M.M., Mălăncuș, I, 2011, Representativity of enterprises cooperatives in states of the E.U. 27, Scientific Papers Series „Management, Economic Engineering in Agriculture and Rural Development“, Vol. 11(3): 16-19.
- [5]Frațilă G., (1994), Cooperation and association in agriculture (Cooperarea și asocierea în agricultură), Academy of Economic Studies, București.
- [6]Marian, T., 2008, People who made history (Oameni care au făcut istorie), Revista lumea satului, no. 9, București.
- [7]Micu, M.M., Bercu, F., Alecu, E., Burcea, M., 2012, Romanian association agricultural producers primacy, power European example, Study regarding the perspectives of Arges county agriculture through the farmers' vision, Scientific Papers Series Agronomy, Vol. 55, No. 1, Iasi.
- [8]Micu, M.M., Tudor, V., 2012, Vision analysis of Arges county farmers intend to associate and for what purpose, Agrarian Economy and Rural Development - realities and perspectives for Romania, The Research Institute of Agriculture Economy and Rural Development, Bucharest.
- [9]Săvuță, V., Magazin, P., 2005, Evolution of the associative forms in the agriculture of Iasi County (Evoluția formelor asociative din agricultura județului Iași), Scientific Papers Series Agronomy, Vol.48, Supplement, Iasi.
- [10]Stoian, E., Dinu, T., 2003, Management in agriculture, Alma Mater Publishing House, Sibiu.
- [11]Tudor, V., 2008, Management of agricultural holding (Gestiunea exploatației agricole), Ceres Publishing House, București.
- [12]Tudor, V., Sipică, A., 2012, Providing Online Information Service to Small Farm Owners, Studies in Informatics and Control, Vol. 21(4), București.
- [13]Vargas-Sanchez, A., 2000, Agricultural Co-operatives in the Agrifood System of Spain and Andalusia, University of Huelva, Spain. Birchall,

J.(Ed.): The World of Co-operative Enterprise 2000. Plunkett Foundation, Oxford (UK), 35-58

[14]Law no.36/1991 regarding the agricultural societies and other forms of association in agriculture (Legea nr. 36/1991 privind societățile agricole și alte forme de asociere în agricultură).

[15]Law no.164 of July 22, 2016 for for the amendment and completion of the Law on agricultural cooperation no. 566/2004, as well as for establishing some measures for its application (Legea nr. 164 din 22 iulie 2016 pentru modificarea și completarea Legii cooperăției agricole nr. 566/2004, precum și pentru stabilirea unor măsuri de aplicare a acesteia).

