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RESEARCH ON THE POSSIBILITY OF CREATING SHORT SUPPLY CHAINS FOR THE SALE OF VEGETABLES PRODUCTION ON THE CHAIN PRIMARY PRODUCTION – SERVICES – STORAGE – RETAIL MARKET

ABSTRACT

The purpose of this paper is to identify the problems that the small and medium-sized producers from the vegetable farming sector are facing, highlighting their opinions in order to develop solutions/models for the efficient capitalization of vegetable production. On this line, ICEADR conducted a survey addressed to vegetable producers from Romania. 180 questionnaires were applied in 6 representative counties for vegetable production: Dambovita, Calarasi, Galati, Ilfov, Dolj and Olt. The conclusions that can be drawn in order to solve up the problems of small farmers are the following: their association/cooperation to have easier access to credits and structural funds, creation of short chains for the sale of fresh vegetables with greater power to eliminate intermediaries and/or processing part of production to increase its capitalization.

Key words: short chain, vegetable farmers, productions, subsidies.

JEL Classification: Q12, Q13.

1. INTRODUCTION

In the period 2015 and 2018, ICEADR and The Ministry of Agriculture and Rural Development concluded a contract for ADER project number 16.1.2. “Developing short supply chain models for the sale of vegetable production on the chain primary production – services – storage – retail market”.

The project is in line with the general and specific objectives of the Sectoral Program ADER and has expected technical results (increasing the quality of food products supplied to the market, compliance with the recommended techniques and application of recommended technologies to ensure compatibility with other systems at national and international level), economic results (to gain new markets for trading fresh and processed fruit and vegetables, to reduce economic losses caused by the elimination of intermediaries on the selling chain, to increase the cost-effectiveness ratio on the chain), social results (creating opportunities for information

transfer through the technical and economic guide that will be developed, dissemination activities foreseen in the project, establishment of short chains for the sale of fruit and vegetables, creating new jobs in rural areas) and environmental results (compliance with the quality standards imposed by the EU, not harming the environment, an integrated approach to short chains, minimizing the food waste).

2. STATE OF KNOWLEDGE

Romania is currently far behind the countries from Western Europe as regards the development of the associative sector in the field of vegetable farming, both in terms of diversity and of presence on the market. At this moment, association heavily relies on interpersonal relationships and on the capital of trust, while the contractual approach has not been deeply entrenched. Those agricultural associations prevail with representation role, while the association forms with economic purpose are less developed. One of the greatest problems that the Romanian small farmers are facing is the sale of their production, the traditional markets being often suffocated by intermediaries. The need for producers to be directly connected with consumers led to finding alternatives to traditional supply chains. The setting up of short supply chains has an applicative character and follows several directions: matching production with demand both in terms of quantity and in terms of quality, reducing or even eliminating the intermediaries, reducing losses through better use of agricultural production, development of an integrated system of research on the short supply chain, based on the concept “from producer to consumer.”

3. MATERIAL AND METHOD

The design and experimentation of models for the development of short chains for the sale of vegetable production represent a current problem. Under the project, in this stage, multiple results were envisaged:

- determination of the opportunity for the small and medium-sized vegetable farmers association and/or cooperation, in order to establish short chains for the sale of production along the chain (SWOT analysis + questionnaires),
- designing a short chain model for the sale of vegetable production,
- elaboration of a feasibility study under several funding variants.

In the present paper I will present some aspects from the first activity, the one linked to determining the opportunity of association and/or cooperation of small and medium-sized farmers from the vegetable sector in order to establish short supply chains for the sale of vegetable production.

The purpose is to find the strengths and weaknesses in the activity of small vegetable farmers, to discuss with them so as to get an insight into their problems and to provide them with solutions / models for the efficient sale of their production.

The research method used in this paper is “the questionnaire-based survey”, which is a method that have been increasingly often used in the last 50 years. Muchielli R. (1968) set 12 stages of the survey, which Golu P. (1974) synthesized them into four sections: inquiry preparation and drafting the questionnaire, processing and interpretation of results, issuing the final report. Preparing the inquiry: objectives are formulated, and according to these, general and specific hypotheses are formulated, which give the purpose of the survey, as they will be tested through the formulation of the questions. Sampling is a laborious and extremely important technical operation, because it gives the survey an opinion poll character, depending on the homogeneity – heterogeneity of the population. The core issue of the operation is related to the representativeness of the selected sample, which must reproduce the groups and all the essential characteristics of the general population on a small scale. The representativeness (and hence the sampling errors) can be statistically determined, depending on the sampling technique used (elevation method, using random numbers and lottery process, panel method or fixed sample method).

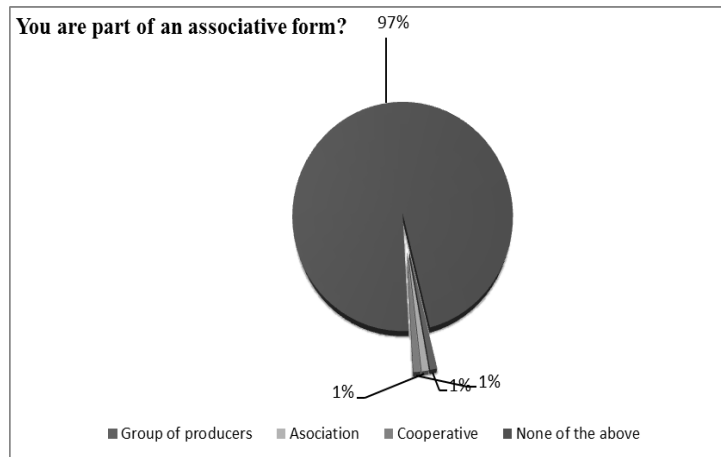
The drafting and implementation of the questionnaire: it is the questionnaire that determines the success of the investigation and it must fulfill two essential conditions: *validity* (i.e. the ability to provide relevant information for the pursued objectives) and *fidelity* (to produce results that vary within the expected range accepted in theory and practice). In drafting a questionnaire, we must take into account a multitude of issues that have relevance for the successful construction of the questionnaire. Thus, we must have in view the following: determining the necessary questions to cover the investigated subject and to correspond to the research objective; determining the type of questionnaire (structured, unstructured, etc.), formulating the questions content (depending on the type and quality of questions) and ordering them in a logical sequence from simple to complex); determining the questionnaire size and format, writing it in a mostly attractive formula; elaborating and encoding the filling in instructions.

Processing and interpretation of the survey results: in data processing, an important phase is to codify the answers and the content analysis of questions, in order to establish the coding criteria, which allows their tabulation and processing (manual processing for small lots and electronic for the large ones). Regardless of whether the starting assumptions are confirmed or not, the results should be presented objectively, using tables, charts, posters, slides, etc.

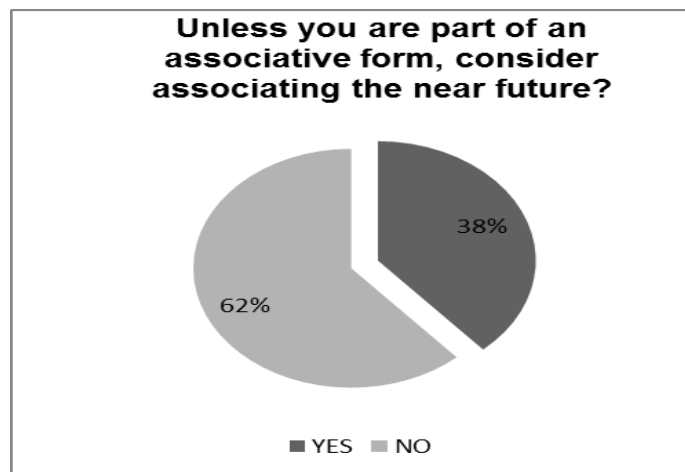
4. RESULTS AND DISCUSSIONS

In order to implement the foregoing, the Research Institute for Agricultural Economics and Rural Development conducted a survey among vegetable growers in Romania in the period March – April 2016, in order to identify the problems they were facing. Given that the accuracy of the results should be $\pm 3\%$, and the coefficient corresponding to the probability of the obtained results must be over

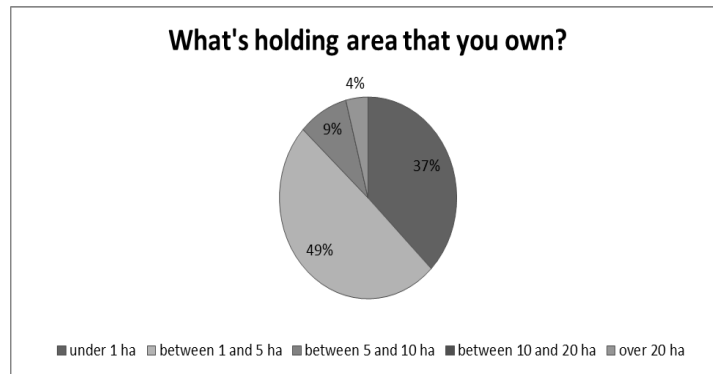
80%, we interviewed a number of 180 people. The vegetable farmers were selected from the country's six main vegetable counties, namely: Dambovita, Calarasi, Galati, Ilfov, Dolj and Olt.



130 persons (72%) of responders have been working in vegetable farming for more than 30 years (before 1989), with a great experience in this field. But there is also a minus of this “seniority” in the field, namely the fact that producers are very reluctant to get associated under an organized form. It is noted that 97% of respondents do not belong to any form of association/cooperative, only 3% are associated (cooperatives, associations and producer groups, 1% each). 109 people (62%) of responders did not even think to associate, claiming the lack of benefits that would flow from these efforts: absence of a taxation system that will benefit the associative forms, lack of loans at preferential interest rates.

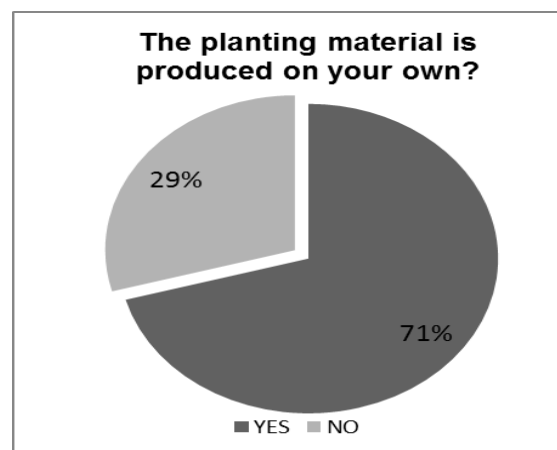


In terms of farm size, 37% are under 1 ha, 49% between 1 and 5 ha and 13% over 5 ha. Out of the interviewed people, 85% grow exclusively field crops.

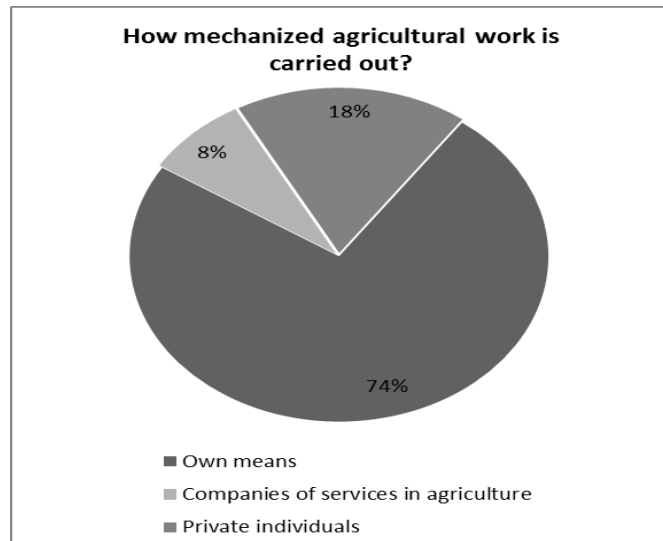


From the questionnaire it follows that the largest areas are cultivated with cabbages, followed by peppers, tomatoes and eggplants. Making a top list of the 6 counties, we can see that Dambovită county ranks first in the cabbage crop, while Calarasi county is the first in the cultivation of peppers, tomatoes and eggplants.

Considering that in Romania vegetable seeds are no longer produced in a controlled manner, 29% of seeds used are imported and 71% come from the vegetable growers' own production, which reflects on the quality and taste of the products obtained. Out of the farmers who practice vegetable farming under protected areas, 27% have areas larger than 2,000 square meters.

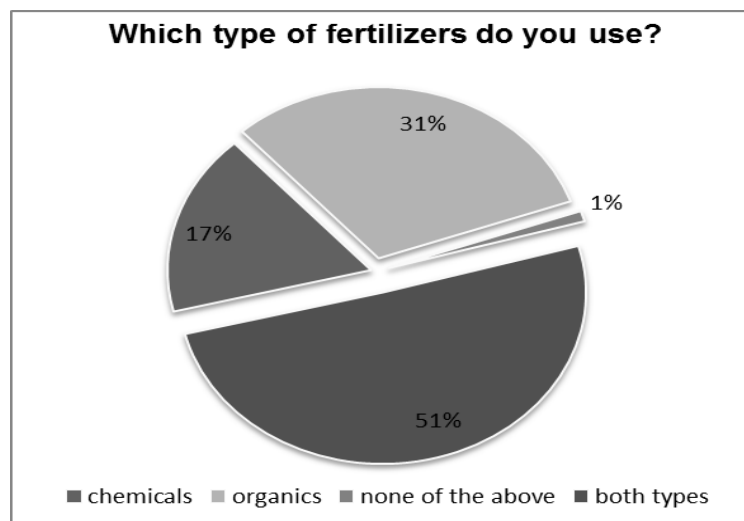


By analyzing the answers, it can be noticed that 74% of respondents apply mechanized works with their own means, 18% go to private individuals and only 8% hire companies of services in agriculture.



As most Romanian vegetable growers are unauthorized natural persons, the farming activities on their plots are executed by family members. 93% of the interviewed persons declared that the workforce consists of 2–4 persons who are family members. Only 5% of them hire skilled workers and 2% unskilled /seasonal workers.

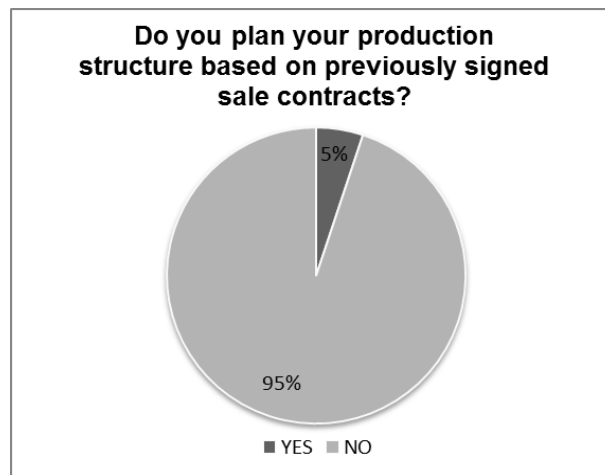
Detailing the information asked from respondents, we find that 51% use both chemical and organic fertilizers, 31% use exclusively natural fertilizers and only 1% do not apply fertilizers at all; out of the phyto-sanitary treatments applied, 67% are conventional and only 33% are organic.



As vegetable growing requires constant amounts of water, farmers need to apply water through irrigation systems: 73% trickle irrigation and 23% sprinkling irrigation.

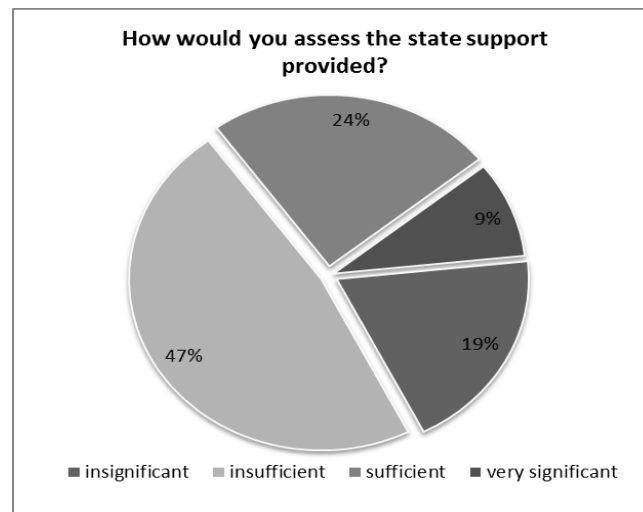
As regards the sale of production, the survey results confirm the problems raised by producers concerning the sale of fresh vegetables, namely:

- over 84% of respondents live exclusively from the incomes they earn from selling vegetables;
- the sale of production is chaotic, 95% of producers have not signed contracts for the sale of their products;
- the sales of fresh vegetables do not exceed 65%, losses are high;
- the customers who purchase vegetables are at distances from 10 to 50 km, which is reflected on the financial results by adding the transportation costs.



The sales of vegetables differ by vegetable types. Tomatoes are best sold (67% of the total amount produced), followed by peppers (59%), cabbages (56%) and cucumbers (43%). It results that the difference consists of self-consumption and untapped production (losses). Most of the quantities produced (64%) are sold at retail, so in small quantities, leading to high qualitative and quantitative losses by increasing the selling time. Consequently, only 36% of production is sold wholesale, which determines the traders to use massive imports for covering the fresh vegetables needs in supermarkets and catering units.

Due to credit conditions imposed by banks, to their not taking into account the particularities of agricultural production, few vegetable farmers apply for bank loans (17%) to continue their activity in the coming years. Most of them (64% of respondents) are self-funded, which most often does not allow expansion or diversification of activities. There are also cases of farmers who used state subsidies provided to this sector. Nevertheless, the state financial support is considered insufficient, even non-significant by most producers (67%).



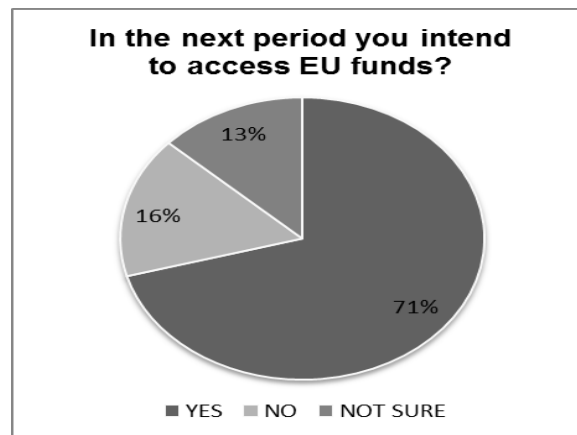
The National Rural Development Program, by more than 8 billion euros that it has made available to Romanian agriculture, could be a financing solution. The conditions for granting such funds, the cumbersome methods and bureaucracy have made only 26% of respondents to be able to access the EU funds.

Under the program implemented in the period 2007–2013, 86 of the interviewed vegetable farmers (48%) accessed Sub-measure 1.4.1. “Support to subsistence farms”, proving, if proof were needed, the level of this activity in our country.

From the program that is currently underway, NRDP 2014–2020, until the date of filling in the questionnaires, 5 farmers (3%) of respondents accessed Sub-measure 6.1. “Young farmers” and 38 farmers (21%) accessed Sub-measure 6.3 “Support for the development of small farms”.

The diminution of the number of documents requested for accessing structural funds makes the prospects be encouraging, 77 of those surveyed (71%) expressing their intention to apply for European funds. However 16% of respondents remain firmly convinced that they will not access EU funds.

By centralizing the replies from respondents and collecting ideas concerning the solutions they consider necessary to develop a vegetable growing business, most respondents (160 respondents) appreciate that accessing structural funds could be a solution in this case. Sub-measure 4.2 “Support for investments in processing/commercialization and / or development of agricultural products” provides funds for storing/processing vegetable production. This will lead to a longer fresh vegetables selling period, to the processing of a larger share of production, significantly increasing the capitalization degree and reducing production losses.



55% of respondents consider that a good solution would be legislation adaptation to facilitate association/cooperation, while 26% of respondents think that banks must modify their terms for granting loans, by taking into account the particularities of the sector, and mainly its economic importance.

The state, according to 104 respondents (58%), should provide greater support to vegetable producers, by guaranteeing bank loans together with them, through aids and subsidies paid on time.

Promoting Romanian vegetable products is seen as a good solution by 54% of respondents, while 59% believe that the removal of unfair competition is necessary in order to enter the market more easily.

5. CONCLUSIONS

After the systematization and interpretation of survey results, several conclusions can be drawn regarding the activity of the 180 Romanian vegetable farmers; these conclusions can be generalized to the entire sector:

- vegetable farm size is small and very small, farms being owned by a large number of farmers, which reveals a high fragmentation;
- a considerable number of producers do not belong or they are not willing to belong in the future to any form of association out of various reasons, starting with their reluctance to manage joint activities and ending up with the facilities that they have if they enroll in such forms;
- the sale of obtained production is the most pressing issue, taking into account that work is chaotic, not based on firm contracts, because of the lack of storage and processing facilities and non-increasing its capitalization.

The gradual adaptation of the Romanian agricultural market to the single market rules began by legislation harmonization. The regulations apply to all the

stages of the food chain, from production and processing to transport, distribution and supply of fresh and processed horticultural products.

The materialization of this project is linked to the need to create an interface between research and vegetable sector chain, to find viable solutions to surmount the current dysfunctionalities in the vegetable marketing chain. The project will help stimulate the association/cooperation of fruit and vegetable farmers, creating jobs and improving the quality of sold production.

The main objectives in terms of creating short supply chains are the following:

- improving the efficiency of processing and marketing of fruit and vegetables, resulting in high quality products that contribute to increased competitiveness and added value;
- improving the competitiveness of processed agricultural products; encouraging the development of new markets for agricultural products;
- increasing efficiency through the use of modern technology;
- improving product quality processed in compliance with the EU requirements;
- creating new jobs.

The first step in creating short production chains needs to be made by the small producers themselves. The trend in Europe is the short chain in three directions – fresh, local and seasonal. Small and medium farmers in Romania need support to establish associative structures, and mainly for their sustainability on longer term.

In the sphere of project development and implementation, there are both research&development units, education units as well as associative organizations interested in this field. We consider that the project results can have a significant impact on the supply chain, in the context of efforts to meet EU standards in the field and to strengthen policies for the development and adoption of normative acts in order to regulate and control the application of the most fair criteria and mechanisms to create short supply chains. Potential beneficiaries: MARD and the agricultural producers.

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