

## COMPARATIVE ANALYSIS OF THE ORGANIZATIONAL MODELS IN ORGANIC FARMING

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### *Abstract*

*As regards to organic farming, organic farms have a lot of shortcomings in ensuring smooth organization of production due to climatic factors or crop sensitivity and action of pests and diseases, but especially to the high cost of inputs, reduced subsidies and difficulties in obtaining fair prices on the market. Understanding how the organizational structure of the business can compete to ensure efficiency at farm level is an important means to resolve these deficiencies. In this context, this paper aims to identify the characteristics of the organization of organic crop farms starting from an interview-based analysis of two large crop specialised farms in Tulcea and Calarași Counties. The information obtained through this method of investigation has been translated into a SWOT analysis and represented the basis for comparison with information gathered from other interviews from two organic farms in Scotland. The main conclusions we reached highlight two types of organization systems, one without integration and another with supply chain integration, very similar to the Scottish ones, but also showing a very obvious difference in the mentality of the farm owners; Romanians focusing on meeting the conditions for certification and maintenance of crops in organic, and the Scots at finding new markets.*

*Key words:* differences, organizational models, SWOT analysis, similarities,

### INTRODUCTION

The Romanian organic agricultural sector comprised in 2012 a number of 15544 operators, from which over 98% were agricultural producers. The main cultures cultivated in our country, on a surface of 288,3 thou ha, were grains (36%), grassland and forage (41%), oil and protein plants (18%), fruit and vines (2%), vegetables (1%) and other crops on arable land (2%) [6]. The main organic products provided to the market were: fresh fruit and vegetables, bread, pasta, pastry and confectionery, flour and cereal flakes, sunflower and soy oil, wine from organic grapes, honey, cow and sheep milk (cheese, butter, cream cheese), pork and beef (sausages, bacon, drums, pate, liverwurst, etc.), etc. [3].

Romanian organic producers are in majority small farmers, with an utilised agricultural area of 3-20 ha, with 3-5 milk cows, 50-100 sheep or have around 10 beehives [11]. There is a limited number of bigger farms, but they

demonstrated to have the capacity to resist on the market in the last years, more than all these small producers [1]. For this reason our purpose is to identify patterns in their way of organization, which can be used and implemented in other farms.

### MATERIALS AND METHODS

The research of organizational models pattern for organic farms was based on an interview investigation method, which permitted us to obtain, through questions and answers, a clear and complete description of the organization of activities in organic farms. The interview is a conversation between two persons which have the main purpose, that to encourage “the production of a speech on a topic defined by a research setting” [2]. This instrument is an investigation technique utilized for the scientific and interdisciplinary knowledge of a particular phenomenon, and the data collection technique implies a favourable framework to obtain true information and

appropriate to the research objectives [8]. Also the interview-based survey is a “privileged instrument of fact exploration” [4].

The individual qualitative (non-structured) interview, which we decided to use, needs an extensive discussion between two parties, during which the questions are discovered and developed [7], the persons involved express themselves more creatively [5] and the flexibility of questions depends on the experience of the researcher [7]. The nondirective and non-structured interviews conducted were based on an interview guide shaped around six discussion themes: the transition process to organic agriculture and the problems encountered; management subsystem; production subsystem; supply-delivery subsystem; human resources subsystem; financial subsystem. The information obtained was structured on these themes and we extracted specific and meaningful elements for interpretation.

Starting from the responses obtained, we delimited the qualitative and quantitative disparities and we united them in a coherent form which characterizes structure and functionality of the organization models of organic crop farms. All the information was utilized for the completion of a SWOT analysis and also for comparison with other similar European farms.

## RESULTS AND DISCUSSIONS

The organization models for Romanian organic crop sector were analyzed based on two interviews within a 420 ha farm (Farm A) and a 750 ha farm (Farm B).

### **The main organizational characteristics of Farm A – integrated in a chain of acquisition and distribution through association (S.C. ADAFLOR S.R.L.-Tulcea County)**

**Management subsystem:** production is ensured but compensation for disasters is very low, organic crops are not protected from pollution by other economic entities; all measures must be taken to protect the

production from contamination affecting its quality.

**Production subsystem:** organic crops are more susceptible to pests than conventional ones; organic crops require irrigation systems, due to high sensitivity to the evolution of climatic factors, average productivity is similar to that of the conventional system, only by properly used organic fertilizer, especially respecting the climatic conditions; crop rotation is very important for achieving high yields; the technology is very important for maintaining soil quality; rejected production must be capitalized in the conventional system, inclusively for feed, which causes loss.

**Supply-delivery subsystem:** purchasing inputs at pool level for all group members is done with unanimous acceptance, through firm annual contracts, with a negotiable price; organic crops require identifying viable sources of organic fertilizers in local livestock holdings, which in time may become customers to providing rejected production; the inputs must be selected from the domestic and foreign markets; according to transport costs and prices, it is more cost effective for the seed to be provided internally – the holding, together with other members of the association create some seed required for all those in the group, for half the price on the market; production transport is handled by ship, but it must ensure the amount needed to fill it; the association provides storage, where each group member has their own space to avoid contamination and risks be managed; prior to shipping, samples are chosen from each container and sent to be analyzed in Bucharest, Constanța or in other countries; the distribution network is managed by the association, which production capitalization for all members, this resulting into a stable production; distribution channels are direct, all production goes to export (Germany, France, Austria, Switzerland, etc.); for the distribution management they generally work with the same clients, and to ensure they are kept, all of the preservation conditions

necessary are insured for quality of production.

**Human resources subsystem:** problems finding employment, taking into account the technological needs of crops, very large number of labourers which involves high costs.

**Financial subsystem:** the conversion process involved an increase in costs on human resources, more manual work being needed for the technological process; profitability is average; costs are higher than in the conventional system due to manual work; organic farming as an activity is very expensive; organic fertilizers are more expensive than those used in conventional systems; treatments are highly priced and are needed to support the production; tests on samples are very expensive, this incurring on the cost of the farm; irrigation costs in areas affected by drought are very high; organic crop farming depends on subsidies, which are insufficient.

#### **SWOT Analysis Farm A**

**Strengths:** productivity per hectare is similar to that of conventional, with help from irrigation, organic fertilizers and other inputs used, it has the necessary equipment to smoothly carry out production technologies; has an irrigation system; by creating seed lots on farm it establishes its independence from suppliers and halves the cost of seed; purchase of inputs at pool level allows negotiation of prices and thus obtaining a lower level for these; inputs are purchased from domestic and foreign suppliers for all members of the association; the farm has a nearby organic livestock unit that represents the main source for organic fertilizer; storage facilities are provided by the association, each member being provided with different cells, so that not all production would be affected in case of contamination; test samples are taken from each cell, the acceptance of production for sale does not depend on the production of other members of the association; joint production sale allows negotiation of prices and thus achieving a higher price level; the market is provided by the association, which finds customers, bringing them to visit the

crops and facilitating the sale; the whole production goes to export, production delivery to all its members, is done in large quantities by ship, the cheapest form of transportation.

**Weaknesses:** yields per hectare are lower than those of the conventional farming; organic crops are more susceptible to pests; high consumption of water for irrigation due to climatic conditions, but also to technological needs; the cost of processing test samples is supported by the farmer (except tests that customers make on their own); the price of organic fertilizers and treatments used are higher than in the conventional system, the necessity for human resources is higher due to manual work that must be performed, which raises the cost of labour; there are difficulties in finding labour work; the clients who provide inputs, also buy production with up to 10 % more than the market price and sell high priced inputs, resulting in the identification of new markets; production and price volatility makes it difficult to reinvest the profits into new investments; insufficient subsidies given to the sector, organic farming being more expensive than conventional one; the production is insured but the compensations granted are very small.

**Opportunities:** rejected production is used as fertilizer and feed for the livestock unit in the area; the association is building a facility for association members that will reduce costs and the risk of contamination; samples are taken from each cell of the silage, which eliminates the risk of rejecting the entire production; possibility of extending the activity by structural funds projects; permanent consulting from the association and its members, decisions being taken unanimously.

**Risks:** storage within leased silos raises the risk of contamination; Structural Funds projects are very difficult to access.

**The main organizational characteristics of Farm B – integrated in a chain of acquisition and distribution outside association (S.C. AUGER PETRUS S.R.L.- Calarasi County)**

**Management subsystem:** the farm certifies their production with a German firm that

handles all tests; samples are sent by the farm to the client in Germany, who has his own laboratory, who also handles the costs; production is not insured, all measures must be taken to protect production contamination affecting its quality; the holding is part of Bioterra Association in Cluj, but only benefits of consulting and exchanging experience; working directly with two other companies created with other family members, one of them providing corn seed.

**Production subsystem:** organic crops are more susceptible to damage than conventional ones; organic crops require irrigation systems, being very sensitive to the evolution of climatic factors; secondary production is used as fertilizer, though there are no requests from other farms; compliance with technologies involves a greater resistance of organic crops to climate change than conventional crops; the farm has its own storage unit composed of three pieces each with 3000 metric tons and a laboratory which allows the analysis of grain into and out of storage.

**Supply-delivery subsystem:** Delivery is made by the factory directly to the customer, who also provides transportation; packaging is done within the farm, as a control measure for maintaining production quality; wheat, corn and peas are delivered to an organic egg farm that collects the merchandise from the farm; regarding the delivery system within the farm, the production exits by lorries, considering that other means of transportation increases the risk of contamination, but the positive aspect is that the transportation is handled by the client.

**Human resources subsystem:** organic farming has a very high number of labourers and involves high costs.

**Financial subsystem:** profitability is low compared to conventional farming; costs are higher than in the conventional system due to manual work; inputs are not overly expensive compared to the conventional farming; subsidies are lower and there are penalties for crops exiting the organic system; costs are higher than in conventional farming; crop farming depends on subsidies, but that is insufficient and is not fair to large farms that

actually produce for the market, farmers were not consulted in the drafting of the legislation; legislation is changing and constrains decision making; rules imposed within the conversion and certification system are difficult to meet.

### **SWOT Analysis Farm B**

**Strengths:** compliance with technologies involves a greater resistance of organic crops to climate change than conventional crops; secondary production is used as fertilizer; farm has the necessary equipment to smoothly carry out production technologies; it has an irrigation system; farm has its own storage silos; packaging is done on the farm, into the packaging supplied by the client; samples for analysis are collected by the client and the costs are supported by him; the means of transport belonging to the client who is also the payer are checked by the farm before charging the production; most of the production is exported, the rest being taken up by livestock farms as feed; sales are being undertaken at the farm gate for all clients.

**Weaknesses:** productivity per hectare is much lower than that of conventional farming; high consumption of water for irrigation, due to climatic conditions, and technological needs; the number of day labourers is huge and involves high costs; the farm does not produce its own seed; production is not insured; organic crops are more susceptible to damage than conventional ones; legal regulations on keeping crops in organic affected the effective exercise of the production; output and price volatility makes it difficult to reinvest in new investments; costs at farm level are much higher than conventionally; subsidies are insufficient.

**Opportunities:** collaborations with the other family farms allows obtaining inputs at lower prices (seed); rejected production is used as fertilizer or sold as conventional production; experience exchange with members of the producer association which the farm is part of.

**Threats:** failure to comply with the quality requirements specified in the contract, due to adverse climatic conditions, leading to the rejection of the entire production; the law is constantly changing and legislative regulations are not sufficiently explained to

farmers, which can result in penalties. Comparative analysis with Scottish organic farms

The information presented above collected from Romanian farms were further compared with those collected in two farms in Scotland (in a study visit at "The James Hutton Institute", in the town of Dundee): GREEN GROWERS LLP (Limited Liability Partnership) Farm - based in Turriff Aberdeenshire (specializing in crops); Mid Coul Farms Limited - located in Dalcross, Inverness (mixed profile).

Table 1. Comparative analysis of Romanian and Scottish model of organization

Similarities	Differences	
	Organic farming - Romania	Organic farming - Scotland
<b>Crop Sector</b>		
Organic crop farms: - did not have problems in conversion - lower yields in the first years of conversion - lower efficiency than in conventional farming - do not have processing or packaging units, the products are taken in raw form - There were no difficulty in obtaining organic certification [9][10] - costs are higher than in conventional farming	Organic crops were affected by pests. No special measures are taken in the field to avoid contamination by other crops. Organic crops are affected by climatic conditions in our country (drought). Low profitability compared to conventional. They had advisory services. Inputs are supplied by the customer or purchased from local producers, or importers. Subsidies are insufficient. There are investments in the technical infrastructure. Risks coming from weather and unfulfillment of contracts. The land is used exclusively for production. Organic crop farming is considered inefficient due to	Organic crops were not affected by pests. Few problems with pests and diseases, but weeds are an issue. They create buffer strips of about 6 m or live hedges to limit other crops, and also cover the crops. Organic crops do not face droughts, but face excess moisture. Adequate profitability. No advisory services taken. Farmers have a list of accredited providers and select them according to price. The subsidies are higher than in conventional farming. No recent purchases made (farms have an age much greater than 10 years). High risk due to market fluctuations and the possibility of not finding a buyer. Part of the land is rented out to livestock farms (sheep and Broiler chickens for organic fertilizer) Organic farming is considered inefficient because prices in recent years have been declining and they forced the reduction of organically cultivated land. Distribution is via transportation to the

Similarities	Differences	
	Organic farming - Romania	Organic farming - Scotland
	high costs. Distribution is done either at the farm gate or by transport to the client.	customer, through intermediaries or directly in stores and supermarkets. Companies that sell in supermarkets own / collaborate with packaging / processing companies and invest in advertising (through affiliation with advertising agencies that promote organic crops).

Source: own creation

Based on these interviews we further detected similarities and differences between the organization of Romanian and Scottish farming which we have implemented in the table above.

## CONCLUSIONS

### Following interviews we identified following organizational features:

-S.C. ADAFLOR S.R.L. is a farm of 420 ha, specialized in growing crops - organic crops are located in an area prone to drought, with high consumption of water for irrigation, productivity per hectare is similar to that of conventional farming in terms of good agricultural years; the area has years of insect infestation; the workforce is difficult to identify in the area; the number of day labourers is very high due to manual work; the prices for the main inputs (fertilizers and treatments) are higher than in conventional farming; cost for crop testing is supported by the farm; the profit is not used for investment; compensations in case of damage are very small; rejected production is used as fertilizer or sold to livestock farms, etc.

-S.C. AUGER PETRUȘ S.R.L. is a farm of 750 ha, specialised in growing crops - organic crops are located in an area prone to drought; productivity per hectare is lower than that of conventional farming; the number of day labourers is very high due to manual work; input prices are higher compared to the conventional farming but not very much; the cost of processing crop testing is supported by the client; production and price volatility makes it difficult to reinvest profits in new investment; production is not insured; the rejected production is used as fertilizer or sold at conventional price, etc.

### The comparison with Scottish farms revealed the following:

- **similarities:** organic crop farms do not have encountered problems in conversion or certification processes; had lower yields in the first years of conversion and still lower than conventional yields; no processing or packaging units; costs are higher than in conventional farming;

- **differences:**

- **Romanian farms:** prone to losses due to climatic conditions; lower profitability than in conventional farming; inputs supplied by the client or purchased from local importers or producers; subsidies are insufficient; land is used exclusively for production; crop farming is deemed inefficient due to high costs;

- **Scottish farms:** fewer problems with pests and diseases; adequate profitability; there is a list of accredited providers, selected based on price; subsidies are higher than in the conventional farming; part of the land is rented out to livestock farms; organic farming is considered inefficient because prices in recent years have been declining and forced reduction of organically cultivated land.

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