

Can Agritourism be a Viable Niche Market for the Small Romanian Fruits and Vegetables Producers?

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Abstract

The paper investigates the main changes that have taken place in the Romanian fruits and vegetables supply chain over the past twenty years. Its sustainability is assessed using time-series data from different official and private data-bases applying statistic research methods. Results showed that the Romanian supply chain is dominated in terms of both inputs used and offer, by imports originating from different EU countries. The local subsistence and semi-subsistence farms cannot provide enough qualitative and quantitative products such as to penetrate the supermarkets, the main players from the market. Agritourism, a potential niche market, was investigated using sampling techniques. The guesthouses from one of the most important ecotourism destinations were assessed by face-to-face interviews. Results showed that even such short-marketing chains are unsustainable tools for the fresh fruits and vegetables products sectors. The lack of governance for the local producers does not allow them to enter on such niche market. All this findings can provide important incentives for better future targeted sectorial agricultural policies.

Keywords: short supply chain, sustainability, local food

Introduction

Supply chain studies have become popular over the last decades both for academia and the professionals. They emphasise the need for a sustainable development in order to incorporate the triple bottom dimensions represented by the social, the environmental and the financial performances in the assessment of the agribusiness activities (Slaper and Hall, 2011). A unified concept of sustainable supply chain management was provided by Hassini *et al.* (2012). It represents the management of supply chain operations, resources, information and funds in order to maximize the supply chain profitability while at the same time minimizing the environmental impacts and maximizing the social well-being.

By definition, a supply chain comprises all parties involved in fulfilling a customer order (Chopra and Meindl, 2009). Several reviews studies classified researches devoted to the sustainable supply chain management over different criteria. One of the main conclusions was that they focused mainly on the manufacturing sector because it was one of the first industries concerned by environmental regulations (Hassini *et*

al., 2012). In agriculture, such studies mainly discussed the appropriate tools used in the sustainability assessment like simulation modelling in van der Vost *et al.* (2009) or life cycle assessment in Maton and Hall (2007) based on case studies' assessment (Cox *et al.*, 2007; Hall and Matos, 2010).

For horticulture, it was showed that the supply chains comprise various stakeholders with different perspectives in terms of product quality. Thus, the horticultural chain faces a diverse range of consumer types, characterized by various demands and desires (Schreiner *et al.*, 2013). It is shaped by several specific characteristics (World Bank, 2005): focus on perishables products mainly used for fresh consumption; presents high value added potential in comparison with the traditional farming activities; highly capital intensive industry both in the production and in the post harvesting sectors; market orientated industry, highly controlled by the large internationally operated retail chains; privately owned industry with little governmental interventions; entrepreneurial skills are very important drivers of this business; with several prerequisites for its development like good national and international transport, electricity and communication infrastructure.

The European Union (EU) horticultural market is one of the biggest ones from the world in terms of volume and diversification (World Bank, 2005). The large supermarket chains are the leading actors both in the EU and the United States (Fernandez-Stark *et al.*, 2011). For the vegetable sector it was proved that the total production and profit benefits increase when the transportation costs decrease. Thus both producers and consumers can gain benefits when farms are located close to consumers (Hu *et al.*, 2014). The local markets are important outlets especially for the small horticultural producers (Miyata *et al.*, 2009) that need to find niche or specialized markets in order to survive the increasing international competition (Reardon *et al.*, 2009).

Agritourism can sustain the local products by providing a viable niche for such producers (Flanigan *et al.*, 2015; Mundler and Laughrea, 2016). It is a form of tourism where a countryside entrepreneur valorises the multifunctional dimension of the agribusiness activity and the recreational values of the rural landscape (Phillip *et al.*, 2010). According to Phillip *et al.* (2010), agritourism can be divided in: 1. generic rural tourism when there is no-working farm activity; 2. 'working farm, passive contact' when the working farm provides the context for tourism, but the relationship between tourism and agriculture goes no deeper than that; 3. 'Working farm, indirect contact' when it starts to integrate agriculture from the farm with the tourism product; 'Working farm, direct contact' when tourists experience agricultural activities in the guesthouses. Agritourism was recognised to have high development possibilities in all New Member States (NMS) after engaging in the post-socialist reforms (Hall, 1998). Over the past years, it developed in Romania both in terms of accommodation offer and as number of tourists (Gavrilă-Paven, 2015; Vlad *et al.*, 2016) because the rural communities tried to increase their revenues by diversifying to rural tourism (Iorio and Corsale, 2010).

This study has several aims: firstly it will analyse the Romanian supply chain for the fresh horticultural products in terms of sustainable development (vegetables and fruits); secondly, based on this assessment the study will further investigate if agritourism evolved in Romania as a niche market for the local products using a local case-study. These objectives will fill-in at least two gaps identified in the scientific literature: a proper analysis of the Romanian horticulture (vegetables and fruits) marketing chain; what are the main suppliers for food in the agritourism businesses and how this activities support or not local development.

Materials and Methods

The supply chain analysis of the Romanian vegetables and fruits sectors was based on several qualitative and quantitative statistical data. The official and private data-bases (Eurostat; Romanian National Institute of Statistic – TempoOnline; Romanian National Inspection for Seeds Quality; International Seed Federation etc.) were used to build time series ranging between 1990 and 2015. They cover the most important components of the Romanian supply chain: inputs, production, packing and processing, marketing etc. In order to identify its main trends, statistical research methods like descriptive statistics, exploratory analysis and parametric modelling were used (Chandler and Scott, 2011).

The investigation of the accessibility of the agritourism as a niche market for the local horticultural fresh products was based on a case-study. It used survey research-methods (Fowler, 2009). The case-study was conducted in one of the most important Romanian agritourism destination – Dornelor Depression, Suceava County (Brezuleanu, 2009). The region is located in the North-East Romanian Development region being bounded by the Bistriței Mountains to the South-East, Giuralău Mountain to the North-Est, Calimani Mountains to the South and Suhard Mountains to the North. It has an average altitude of 800 meters, including 10 communes (49 villages) and two urban centres (Vatra Dornei and Broșteni City). The region is recognised for spectacular 'Natura 2000' sites and natural parks that make it attractive for national and international ecotourism.

Individual data was collected by sampling techniques using a probabilistic sample of the guesthouses that operate in the region (Levy and Lemeshow, 2008). The total sample size, for a maximum error limit of 5% and a probability of 95%, was established to 15 guesthouses. Finally, 16 guesthouses were randomly selected. A standardized questionnaire was used in order to collect internal guesthouse data by face-to-face interviews. The survey comprises a list of well-structured questions divided in four sections. The first section has seven questions that identify the main socio-economic characteristics for the guesthouses' owners. The next section uses seven questions to characterise the touristic offer: type of accommodation; type of additional services etc. There were eight questions about the type of food that was bought from the market, place of acquisition, type of food provided from the household if any, local food bought from the village. Finally there were eleven questions investigating the business' possible future development. The data was processed and analysed using the MS Excel Office.

Results

A synthetic view of the Romanian fruit and vegetables supply chain

A supply chain has to characterise the main flows of goods developed in order to bring a product to its final consumer. The starting point of any chain analysis is represented by the assessment of the input driven products. Over the past years (1989-2016) the Romanian *horticultural input industry* has underwent important changes. The *vegetables seeds and other planting material* markets became largely dominated by imports (Table 1). Internal production has diminished due to high external competition. This concentrated the market similar to the EU and worldwide situation. In 2014, the top 10 seed companies accounted for more than 66% from the entire global market (EP, 2015). The EU seed market is less concentrated as compared with the worldwide situation but tomato seed input industry presented one of the highest concentrations rates from the EU (EP, 2015). These global seeds players are the main suppliers for the Romanian market, but they have to cope with several internal producers.

One of the main inputs used in agriculture is represented by *energy*. Its costs accounted for more than 12% of all intermediate costs of the EU - 28 agricultural sectors in 2012 (Eurostat, 2014a). The Eurostat data showed that *oil* is the most used fuel in the EU-27 countries, representing around

Table 1. Romania key data about horticultural seed and other planting material

Seed imports (Quantity: million tonnes)				Seed imports (Value: USD millions)			
Vegetables	Flower	Field	Total	Vegetables	Flower	Field	Total
1571	287	45854	47712	21	3	179	203
Seed exports (Quantity: million tonnes)				Seed exports (Value: USD millions)			
Vegetables	Flower	Field	Total	Vegetables	Flower	Field	Total
189	0	137180	137369	1	0	331	332
Deficit/Surplus (Quantity: million tonnes)				Deficit/Surplus (Value: USD millions)			
-1382	-287	91326	89657	-20	-3	152	129
Seed and other planting material (national production)							
Horticultural material	2005			2016			
	ha	Production		ha	Production		
Vegetables (seed)	391.821	883.678 (t)		201.138	817.55 (t)		
Seeds for fruit trees	16.428	14.2365 (t)		23.357	27.4932 (t)		
Grafted fruit trees	58.430	1941.224 (1000)		0.100	14.90000 (1000)		

Source: Imports/exports - 2014: (International Seed Federation, 2016); Seed/breeding internal production: (Romanian National Inspection for Seeds Quality, 2016).

53% of the total agriculture's energy consumption in 2010 (Eurostat, 2014b). Horticulture has a high energy demand especially for the indoor production. The European Parliament study from 2015 showed that *oil* and *gas supplying* industries are highly concentrated in the entire European Union while *energy industry* is less concentrated. From the ten top EU electric suppliers, the first five operate also in Romania. The same situation can be founded in the oil and gas industries. Practically, the Romanian horticultural sector has to buy energetic inputs from the big international companies that aligned their marketing and prices strategies to an open European market.

The Romanian *fertilisers* and *plant protection suppliers* are also directly connected to the main international producers. These inputs are provided by several big companies that operate at the EU level (European Parliament, 2015). The last year's trend was to use less inorganic fertilisers and more crop protection agents in the entire EU and especially in the Central and Eastern European countries. The main *suppliers* for *farm* and *irrigation horticultural equipment* are also coming from abroad. Practically the industries that supply inputs and technologies for horticultural Romanian producers can be characterised to be highly concentrated in big size international suppliers that are EU or worldwide operators.

The utilised agricultural area (UAA) dedicated to fresh vegetables *production* has been highly fluctuating in Romania between 1990 and 2015 (Table 2). In the same time, the volume of total production was even more sensitive to the agro-environmental conditions. *Filed-open* production became predominant, *greenhouses areas* diminishing almost 6 times due to the restitutions of the former state companies to the private landowners and the lack of their managerial ability to reduce production costs in an open European market. Fresh fruit production also reduced in terms of UAA and volume.

Farms that operate in the Romanian horticultural sector are concentrated mainly in small size classes in terms of numbers. Thus, in 2013, more than 96% of farms (specialist horticulture outdoor, indoor or fruit tree) had less than 10 ha in Romania as comparing with only around 85% in the EU-28 (Table 3). Thus, more than 70% of Romanian horticultural farms that had less than 2 Ha could be considered to be subsistence and semi-subsistence ones, producing mainly for self-consumption. They use extensive farm family work (expressed in annual working units AWU) and sell only occasionally on the market.

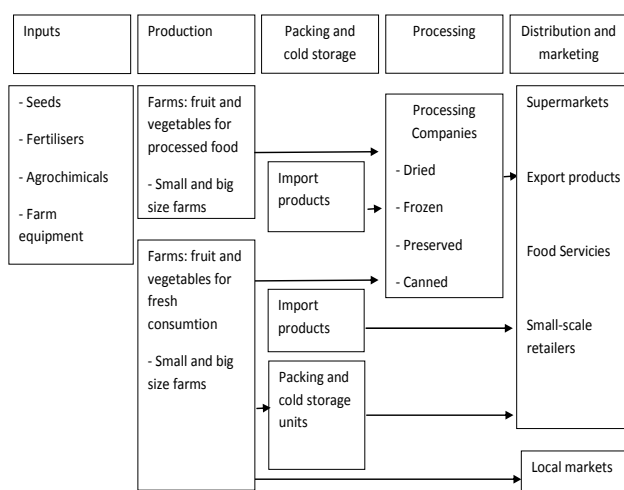


Fig. 1. A schematic view for the Romanian fruit and vegetables marketing chains

The internal production of *preserved vegetables* and *fruits* decreased drastically immediately after 1989 (The Netherlands Embassy, 2010). In 2008, there were only 89 processing and canning companies having a total capacity of 237 thousand tons of fruits and vegetables (EVD, 2009). After 2008 the processing capacity increased due to the new investments made from the rural development CAP funds (Table 4).

The *internal market* is dominated both in volume and value by the large scale supermarkets. The internal producers do not have the capacity to provide packed fruits and vegetables such as to satisfy an internal increasing demand. Thus *imports* for vegetable products increased almost 8 times between 1991 and 2015 while 3.5 times for fruits (Table 5). Between 1991 and 2015, the commerce balance deficit has severally increased especially for the fresh fruit and vegetables marketing chain. The origin of the imported products was mainly the EU market that accounted for more than 78% of the total imports.

Agritourism as a potential niche market for the Romanian local horticultural products. Case study - Dornelor Depression

The touristic offer of the Dornelor Depression has increased 3.2 times between 1990 and 2015 (Table 6). It was sustained especially by rural and agritourism investments. Also the number of tourists that arrived in the region increased with 55%. A quarter was interested mainly by the rural areas.

Table 2. Romanian domestic horticultural production 1990-2015 (in ha and tonnes)

	UM	1990	1995	2000	2005	2010	2015	*(%)	**
Vegetables	1000 ha	216	214	234	267	263	236	2.12	22
	1000 t	2357	2871	2528	3625	3864	3630	10.75	642
Greenhouses	ha	1843	1655	1405	1127	274	323	-20.5	1
	1000 ha	231	226	207	200	145	139	-9.2	40
Fruit tree production	1000 t	1453	917	1301	1647	1420	1196	0.4	250

Average growth rate; Standard deviation. Source: TempoOnline (2016)

Table 3. Farm structure in the Romanian horticultural production sector 2005-2013 (% in different size classes)

Farm Type	Size class (ha)	Number				UAA				AWU				% Self consumption			
		2005		2013		2005		2013		2005		2013		2005		2013	
		RO	EU	RO	EU	RO	EU	RO	EU	RO	EU	RO	EU	RO	EU	RO	EU
Specialist horticulture outdoor	0-2	76.0	59.6	85.6	51.8	22.1	8.0	38.7	7.8	59.6	27.8	75.2	25.4	78.6	87.2	90.4	81.1
	2-9.9	20.3	28.3	13.7	35.0	44.7	18.9	47.3	21.8	32.2	32.0	22.6	32.3	17.9	11.3	9.8	17.8
	10-50	3.7	9.8	0.7	10.7	30.6	30.6	10.7	30.9	7.7	22.7	1.7	23.8	3.5	1.4	0.0	1.3
	> 50	0.0	2.3	0.0	2.3	3.0	42.3	3.0	39.9	0.0	16.6	0.0	18.0	0.0	0.0	0.0	0.0
Specialist horticulture indoor	0-2	68.7	67.1	84.3	61.4	19.8	17.6	35.1	12.8	52.1	45.8	73.8	37.8	68.2	76.1	n.a	n.a
	2-9.9	28.6	28.2	15.1	32.2	39.8	40.5	39.4	36.7	40.1	36.8	19.8	39.4	26.1	20.6	n.a	n.a
	10-50	2.6	4.3	0.7	5.7	17.0	28.1	9.1	29.3	6.8	12.0	6.1	16.1	5.7	3.3	n.a	n.a
	> 50	0.1	0.3	0.1	0.6	21.9	10.9	14.9	19.0	1.0	4.3	0.3	5.8	0.0	0.0	n.a	n.a
Specialist fruit tree	0-2	74.7	60.9	76.6	50.4	19.4	11.3	24.6	8.0	53.1	29.0	51.4	22.7	79.1	87.6	80.9	83.0
	2-9.9	22.6	31.4	21.6	38.8	32.1	34.5	41.2	32.5	29.5	39.8	33.5	41.4	19.4	11.4	19.1	16.2
	10-50	2.2	7.0	1.6	9.7	14.5	33.1	12.8	34.4	6.0	21.6	5.6	24.1	1.5	0.9	0.0	0.8
	> 50	0.0	0.7	0.0	1.1	34.1	20.9	21.5	25.0	11.5	9.5	9.5	11.7	0.0	0.0	0.0	0.0

n.a Not available. Source: Eurostat (2016)

Table 4. Evolution of the processing industry (2001-2014)

	2001	2005	2008	2011	2014	*(%)	**
Canned vegetables (tons)	46996	67287	75840	67346	70949	4.4	10388.08
Canned fruits(tons)	2635	5358	4093	3085	5595	19.3	3018.6

*Average growth rate;**Standard deviation. Source: TempoOnline (2016)

Table 5. Imports/Exports for fresh vegetables and fruits (1991-2015)

Imports	1991	1995	2000	2005	2010	2015
Total imports 1000 Eur	4739719	7948691	14235411	32568492	46869188	62962071
% UE	29	50	57	62	72	77
Vegetables	10670	12917	22248	54875	149687	274705
% UE	50	14	31	48	62	79
Fruits	29326	43585	64700	136386	178660	477056
% UE	61	25	32	28	60	78
Total exports 1000 Eur	3489858	6117452	11273261	22255071	37360259	54596057
% UE	37	54	64	68	72	74
Vegetables	11448	20564	19855	46612	65289	90256
% UE	67	70	74	97	96	95
Fruits	22973	19052	23308	39317	61871	81883
% UE	77	59	54	59	73	81
Deficit/ Surplus	1991	1995	2000	2005	2010	2015
Total	-36	-30	-26	-46	-25	-15
Vegetables	7	37	-12	-18	-129	-204
Fruits	-28	-129	-178	-247	-189	-483
Internal consumption	1991	1995	2000	2005	2010	2015
Fresh and canned vegetables (kg/person)	n.a	n.a	2.144	2.56	3.557	3.693
Fresh and canned fruits (kg/person)	n.a	n.a	7.293	6.769	7.382	7.553

Source: TempoOnline (2016)

Table 6. Touristic infrastructure and number of tourist in Dornelor Depression (1990-2015)

	1990	1995	2000	2005	2010	2015
Touristic infrastructure total	24	19	33	48	59	79
Rural area (%)	13	16	30	23	34	43
Agritourism (%)	0	0	0	48	59	65
Total tourists in the micro-region	n.a	n.a	40110	48418	44555	62106
Rural area (%)	n.a	n.a	5	7	15	25
Agritourism (%)	n.a	n.a	1	3	14	23

Source: TempoOnline (2016)

Table 7. Main socio-economic characteristics of the guesthouses

	Type	%	Type	%
Gender	Masculine	31	Feminine	69
Age	Below 45	25	Above 45	75
Education	Primary and highschool	56	Bachelor degree	44
Origin	Urban	12	Rural	88
Household	Yes	81	No	19

Source: Survey results (2016)

Table 8. Source of origin for the main food ingredients used in the guesthouse (2016)

Food ingredients	Store/ Supermarkets		Internal production		Local region	
	Average	St dev	Average	St dev	Average	St dev
Vegetables (fresh and preserved)	52	36	31	36	18	23
Fruits (fresh and preserved)	76	32	9	20	14	20
Bakery products	66	33	29	31	5	12
Milk and milk products	30	37	49	38	21	30
Meat and meat products	53	30	29	29	19	17

Source: Survey results (2016).

The owners of the guesthouses are mainly female (69%) and have a good level of education (Table 7). The investigated guesthouses are located mainly in the rural area and share the household premises with the touristic facilities thus promoting a direct contact with agricultural activities.

Food ingredients come mainly from stores and supermarkets with the exception of milk and milk products that are produced mainly in the households (Table 8). The vegetables and fruits (fresh or preserved) are the ones that are bought especially from the open market. The offer of the local products has low shares in the total food basket of the guesthouses.

Discussion

The EU agriculture supply chain was characterised to favour mainly the supermarkets, the highly intensive farms and the inputs companies in other studies too. Small-size holders are usually excluded from the market (de Fazio, 2016). Short-supply marketing chains as it was defined in the EU Regulation 1305/2013, represents a way of reaching the sustainability goals by decreasing the transportation burden and consequently the CO₂ emissions (Canfora, 2016). Such distribution channels were considered to be a model for the sustainable market developments (Tasca *et al.*, 2017). Based on a local case-study, it was proved that agritourism is only partially valorised as a niche market for the local Romanian products. The horticultural products (vegetables and fruits) are bought mainly from supermarkets. Several explanations already underlined in the literature limit the proper developments of the short-marketing chains. Firstly there is an important lack of financial, human or social rural capital developments (Mikulcak *et al.*, 2015). The organisation of the farming sector is acknowledged as other

drawback (Alexandri and Luca, 2014); then, the socio-political uncertainty (Fraser and Stringer, 2009), the lack of entrepreneurial skills or the lack of good governance (cooperation) (Harpa *et al.*, 2016) are other key issues.

Conclusions

The Romanian supply chain for horticultural products (vegetables and fruits) is largely dominated by imports coming mainly from the EU market. The local producers, mainly subsistence and semi-subsistence ones, do not have the capacity to penetrate the market. For them, the local niche markets are local key survival strategies. Though agritourism has consistently developed over the past years in terms of offer and number of tourists it is only partially used as a local short marketing chain. Further good governance innovations are needed in order to help farmers and touristic infrastructure owners to work together.

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