

POTENTIAL OF ORGANIC FARMING AT THE SOUTHERN WATERSHED OF LAKE BALATON

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ABSTRACT

Previous studies have shown that organic farming is a widely accepted and acknowledged method. The way of farming plays an important role nearby our fresh waters, since – besides influencing the environmental conditions – it affects the local people's and the visitors' judgment, and plays a role in preventing the development of societal conflicts. The aim of our study was to evaluate the potential in organic farming at the Southern Watershed of Lake Balaton. Our hypothesis was that the production of organic food in the studied area could contribute to an increase in the employment, the region's attractiveness (measured in the number of guest nights), as well as in the earnings spent in the region (reproduction). Secondary and primary information collection was performed. A questionnaire-based study was conducted by interviewing the management of local organic and conventional farms (deep interview), as well as local people and the tourists. Results show that consumers considered purchasing organic food as a possibility, however it was accomplished only to a limited extent. According to the management of organic and conventional farms, there is a lack of effective strategy. Critical points were the well-organized local sales activities and communication, which should be improved. Results also revealed that there was no difference in human capital supply, but the environmental conditions were more favorable compared to other regions in the country. Taking advantage of that should be also part of the region's strategy.

Keywords: Local people and tourists, organic foods, consumer behavior, marketing strategy

INTRODUCTION

There is a strong relationship between agriculture and the environment, as the first takes direct and significant event on the latter. However, this also works the other way around, as the components of the environment generally determine the characteristics, success and the buildup of the agricultural activity. We cannot forget about the fact that agriculture is one of the most important and most basic human activities, which – mainly for supporting self-sustaining – generates major changes in the state of the environment by applying its resources. Agricultural activity had always been accompanied by effects forming the environment, but intensity and effects may vary by time and area (Tar, 2008).

The traditional and industrialized model of agriculture has led to rapid deterioration of the environment (Sántha, 1993). As an alternative for these integrated and ecological was initiated; and we examined the opportunities of the latter in the southern watershed of Lake Balaton. Our strategic aim was to contribute to the increase of

the current production and consumption rates. According to our assumptions the production of eco-products on this area may contribute to increasing employment, growing the attractiveness of the region (may be measured in overnight stays) and the money spent here (reproduction).

We regard the focus of the research especially actual, as the development plan of the region puts emphasis on boosting tourism and health industry and forming the built environment and the minds of the people living in it to be more conscious about healthy, lively environment and *contributing to maintain the natural environment* (Balaton Fejlesztési Tanács, 2014). No doubt, there is a need for the contribution of multiple areas, and the focus is on realizing eco-farming and developing the distribution channels in order to increase consumption.

This paper presents part of the results obtained from the questionnaire-based analysis of various actors and stakeholders of the southern catchment area of Lake Balaton, where further aspects and the role of these actors are analysed by researchers (Horváthné Kovács and Nagy, 2013; Torma and Horváthné Kovács, 2014).

MATERIALS AND METHODS

The research is based on both primary and secondary methods. Our secondary researches included analyzing databases, statistical data collected by self-governments and data of national organizations and previous researches, which are applied for both scientific and social researches.

We carried out empirical research around the agricultural areas in the southern watershed of Lake Balaton, in the form of questioning the leaders of the enterprises (deep interviews). We chose the participants by judgment, we contacted the farmers in the public database of the Hungarian Bioculture Federation and via personal contacts, differentiated by size and area of activity. We included farmers in the research, who already apply the methods of eco-farming, but we also contacted conventional farmers on the spring of 2014. The sketch interview applied – which had been sent to the farmers prior to the interview – contained 9 general and 7 farming-specific questions. Thanks to the unstructured method, in many case further questions were also clarified.

Quantitative primary methods were applied upon questioning the local inhabitants and tourists. We asked 500-500 people among the locals and tourists about the consideration of eco-farming and ecological food and their sales possibilities. The fieldwork of the research was carried out by the Szocio-Gráf Market Research Institute in the first half of 2013 in settlements around Lake Balaton, where the number of urban inhabitants was slightly overrepresented. (Only the sample of local inhabitants was representative.)

When taking the sample from the local inhabitants – within a given settlement – the method of systematic random sampling was applied: the so-called random walking guaranteed complete randomness upon the selection of the respondents. The members of the visited households were still further filtered by the birthday-key method in order to ensure complete randomness (Malhotra, 2008). The research carried out on tourists happened on often-visited spots of the settlements of Lake Balaton (beaches, restaurants, markets).

During the creation of the questionnaire we strived for understandability above all, trying to include the possibility of any multiple meanings, and were careful about the sequence of the questions as well.

The analysis of the questionnaires happened by a statistical program matching the needs (SPSS 18.0). During the analysis, first of all we introduce the frequencies in the whole sample. Among the groups made up based on the background variables we analyze only those, which showed significant relationships with 95% confidence level. The analysis contained mainly means and percentages in the case of interval scales; and for other variables we analyzed the data by crosstabs, and in percentages. In the case of percentage distribution we carried out significance analyses with Chi-square tests and in the case of multivariate statistical analyses we checked variance (ANOVA). It is important to mention that there may be $\pm 0.1-0.2\%$ difference from 100% because of the calculation methodology of SPSS.

RESULTS

According to the researches the main advantages of ecological foods are the favorable environmental effects, such as restoring biodiversity and the landscape, decreasing environmental pollution and energy usage, while applying more renewable resources (sun, wind, water) (*Scialabba, 2003; Gabriel et al., 2009*).

During our research we asked about the consideration of environmental effects as well among local inhabitants, tourists and people working in the areas of farming, processing and retail. Our results are introduced in the following.

The possibilities of farmers in the southern watershed of Lake Balaton

The set of activities of the companies asked were broad, we could see some primarily focusing on agricultural activities (growing plants on fields, plantations and animal breeding), fishing and hunting, processing (syrops, honey, wine, meat) and retailers. The activities typically started 20-30 years ago, but there were some, who started about 3-4 years before. The area of the production was just as diversified as the set of activities: it ranged between 1-9000 hectares. The products produced ranged from sunflower, wheat, corn, rape, cherry, peach, grapes, line, triticale, fish, and neat for meat production and breeding animals. Further activities included hunting, fishing and touristic activities (catering and accommodation services). It is favorable that all of our interviewees decided for at least keeping the current production level, but many of them are even planning expansion. Among animal breeders the most popular aims were cutting animals and processing meat (e.g. steak), while for those who grow fruits and vegetables, the directions – besides extending storing capacity – went towards preparing jams, dried fruits, liqueurs, pálinka and wine. The improvement and widening of distribution channels (e.g. web shop, package services) were also listed among the short term plans.

The interviewees are generally satisfied with their production possibilities, but the Balaton-area does not mean any further advantage for them. The general problem in all areas is to find the right number of well-qualified workforce; all the respondents agreed that it is a challenge to find engaged employees. But this is not

a challenge characteristic only in this region, so the solution of it does not mean extra-burden compared to other regions either. Those operating a small business try to solve their problem by involving family members, which however means huge boundaries from economic perspective.

They regard their ecological possibilities as average (except for apiarists, who think it is above average), luckily geographical location does not cause any drawbacks. Generally we can conclude that the respondents do not clearly feel the advantages of being close to Lake Balaton, only the potential in touristic activities is higher. In their production systems they try to adapt to the local circumstances as much as they can. Environmental characteristics influenced the methods of farming a great deal, this is why many started to engage in producing eco-products, which could be a good basis for attracting more farmers to the area..

Concerning sales the responses are rather pessimistic. They do not enjoy the benefits of selling locally, the majority of the products are not purchased in the area of Lake Balaton. The amount of products sold as eco-products is especially low; as for the opinions of the farmers it does not mean real attractiveness for the customers, so they are not hoping for a huge price gap. One example for this is the case of wineries that may only sell their bio-wines on festivals on identical prices as the traditional ones. The real advantage only appeared in the case of those, who are engaged in producing, processing and sales (within the hotel) as well, whose customers justify the acceptance of higher quality, higher value products. The others mostly target the capital and foreign partners with their special products (honey, pálinka, wine, liqueurs and meat products).

Among the necessary changes the improvement of local distribution channels was mentioned on first place; which was supported by all members of the product path. There are good possibilities in the direct communication to the customers as well, but even in spite of being present on multiple festivals they still do not feel this is enough; and they expect more turnover from the yearlong presence in larger stores. They think it is important to improve both horizontal and vertical cooperation. Laws and legal regulations often cause problems: they would welcome more accountable regulations supporting the development of their farms more clearly.

The possibilities of environmentally friendly (ecological) farming from consumer perspective

In this section we highlighted those questions, which tell us details about the attitudes of local inhabitants and tourists concerning environmentally friendly, ecological farming and its products and their willingness to consume them.

First of all we examined the satisfaction of the locals and tourists concerning the natural environment (*Table 1*). They could express their opinions on a scale from 1 to 5 (1=not satisfied at all; 5=completely satisfied).

The general level of satisfaction among the 500 local respondents was 4.44, which shows that they are generally satisfied with the natural environment of Lake Balaton. The same value in the case of tourists was 4.73, which shows that they perceive the natural environment of the area nicer than the locals. It is a positive

phenomenon that over half of the locals (59.8%) is completely satisfied, and further almost one third is rather satisfied. The response of those coming here only for holidays is almost totally homogeneous: they are completely satisfied with the natural environment.

Table 1

**Satisfaction with the natural environment
among the inhabitants (N=500) and tourists (N=250)**

Category	Distribution among inhabitants		Distribution among tourists	
	Person	%	Person	%
Not satisfied at all	2	0.4	0	0
Rather not satisfied	6	1.2	0	0
Neutral	51	10.2	7	2.8
Rather satisfied	139	27.8	53	21.2
Completely satisfied	299	59.8	190	76.0
N/A	3	0.6	0	0

We found significant relationship ($p=0.002$) between satisfaction and gender in the case of locals only: women (62.4%) are more satisfied with the natural environment of their place of living than men (56.3%).

During our research we examined how much the respondents feel themselves responsible for the environmental problems (*Table 2*). This question was replied rather neutrally both by locals and tourists – represented by marking 3 on the five-level scale. However, it is interesting to observe that among tourists the proportion of the positive replies, marking 4 and 5 was higher: 46.6% of the locals, while 52% of the tourists thought they were responsible for environmental problems.

Table 2

**Feeling of responsibility for environmental problems
among locals (N=500) and tourists (N=250)**

Category	Distribution among inhabitants		Distribution among tourists	
	Person	%	Person	%
I do not agree at all	39	7.8	10	4.0
2	70	14.0	32	12.8
3	157	31.4	78	31.2
4	147	29.4	77	30.8
I completely agree	86	17.2	53	21.2
N/A	1	0.2	0	0

Concerning the feeling of responsibility there was a significant relationship ($p=0.001$) among the local inhabitants concerning qualifications: among those having a university degree 56.6% thought that they are responsible for environmental problems (marking 4 or 5), while among those having less qualification than primary school 31.6% marked 4; and there was no one completely agreeing. There was high rate of agreement among those with skilled labor education (51.2%) or specialized schools (49.6%). Among tourists there was no such a relationship visible.

It is important to highlight that the sample of tourists is half as big as that of the local inhabitants, therefore the small sample often made it harder to carry out the analyses. The Chi-square test showed relationship in two cases, concerning family status and current workplace, but unfortunately over 20% of the cells showed expected count less than 5%, so these data are not reliable.

The next question focused on how much the respondents feel they could personally do something for their environment (*Table 3*). As in the case of the previous question, here also the neutral responses dominated, and again it is visible that tourists (42.8%) gave a larger proportion of positive answers than the locals (33.4%).

Table 3

Perception of being able to act actively to solve environmental problems among local inhabitants (N=500) and tourists (N=250)

Category	Distribution among inhabitants		Distribution among tourists	
	Person	%	Person	%
I do not agree at all	56	11.2	9	3.6
2	92	18.4	38	15.2
3	184	36.8	96	38.4
4	114	22.8	63	25.2
I completely agree	53	10.6	44	17.6
N/A	1	0.2	0	0

Again there was a relationship concerning the local inhabitants in the case of school qualifications ($p=0.000$). In this case those with a university degree were the most positive (42.2%), the proportion of positive (4-5) replies of the ones with high school degree (32%) and skilled labor education (38.6%) were again similar, while those with primary school qualification (25.5%), or less (15.8) were again much less positive about the issue than the rest. As before, no such relationship could be seen among tourists.

The Chi-square test showed a relationship among tourists with family status, but because of the small sample size we cannot speak about a trustworthy relationship again.

In the next question we examined how actively do people act in favor of solving environmental problems (Table 4). Once again, the vast majority of the responses were neutral concerning the issue, and all in all tourists (36.4%) proved to be more positive than the locals (30.2%). The proportion of those not doing anything to solve environmental problems is higher among the local inhabitants (9.4%); among the tourists this number was just a bit over the half of the previous (5.2%). Compared to the other questions the proportion of people not responding was much higher among the locals, in 15 cases (3%) there was no reply to this question.

Table 4

**Acting in favor of solving environmental problems
among locals inhabitants (N=500) and tourists (N=250)**

Category	Distribution among inhabitants		Distribution among tourists	
	Person	%	Person	%
Nothing	47	9.4	13	5.2
2	110	22	49	19.6
3	174	34.8	97	38.8
4	128	25.6	72	28.8
Very much	26	5.2	19	7.6
N/A	15	3	0	0

In the case of this question the samples of local inhabitants and tourists show similarities, as in case of both of them there is a relationship between the responses and school qualification (locals: $p=0.007$, tourists: $p=0.037$). In both cases the ones with university degree were the most active against environmental problems (locals: 44.6%, tourists: 41.8%), and no one of the group with less qualification than primary school replied 5 for this question.

Concerning specific activities we also asked if the respondents buy products coming from qualified eco-farms (Table 5).

Table 5

**Buying products coming from qualified eco-farms
among local inhabitants (N=500) and tourists (N=250)**

Category	Distribution among inhabitants		Distribution among tourists	
	Person	%	Person	%
Never	258	51.6	95	38.0
2	103	20.6	39	15.6
3	81	16.2	69	27.6
4	32	6.4	23	9.2
Always	25	5.0	23	9.2
N/A	1	0.2	1	0.4

In this question neither local inhabitants, nor tourists were neutral: the majority of both samples never buy eco-products, but while among the locals this proportion was 51.6%, among tourists it was only 38%, their responses were more often neutral (27.6%). In this question there was a relationship between gender and buying food from qualified eco-farms ($p=0.089$) in case of tourists; men replied 'Never' more often (45.2%), than women (31.9%). Though it is still a low proportion, 10.4% of women answered 'Always' on contrary to only 7.8% of men. There was no such a relationship visible among the local inhabitants.

CONCLUSIONS AND SUGGESTIONS

As a summary we can conclude that though there is consumer interest towards eco-food in the region, it is still slight. This result is especially unfavorable for those producing and selling eco-products in the area, as it is hard for them to find a market locally. This undesirable tendency is assumedly driven by the high prices and the missing or often wrong information about the products produced by this method.

The solution could be an overall campaign: transmitting information forming consumers' knowledge in the area by significant social support. This could mean opening small and mid-sized eco-farms for those, who are interested, probably complemented by organized programs as well. From the results it is visible that the respondents' feeling of responsibility is significant, so the campaign should be started based on this. The Krishna Valley in Somogyvámos could also be an active member of this campaign, as it is already a well-working community focusing on the sustainability. The Valley is located close to the area examined and provides a wide range of programs as well.

What is missing is a platform where local inhabitants and tourists could be informed about the eco-products produced in the area. This could be solved by an online platform, or what is even better, a mobile application, which provides exact information about the products, prices and availability (with the help of Google Maps). This service could be efficient to fight the problem of high prices as well, since the prices are easily comparable.

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