SCIENTIFIC INFORMATION

Economic profit of organic farmers in the Czech Republic

Ekonomický profit ekologicky hospodařících zemědělců v České republice

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Abstract: This paper is focused on defining the basic factors (economic and non-economic) influencing economic efficiency of organic farmers with the accent being placed on economic factors alone. The aim of this article is to carry out the analysis of these factors (with the introduction on the differences from conventional agriculture), primarily at the general level and then, taking into consideration the data available from the undertaken statistical investigations, in the dimension of all organic farmers in the Czech Republic.

Key words: organic farming, organic agriculture enterprise, economic factors, costs, revenues, profit

Abstrakt: Příspěvek je zaměřen na vymezení základních faktorů (ekonomických i neekonomických) ovlivňujících ekonomickou výkonnost ekologicky hospodařících subjektů, s akcentem pouze na faktory ekonomické. Cílem předkládaného článku je provedení analýzy těchto faktorů (s uvedením odlišností k zemědělství konvenčnímu) nejprve na úrovni obecné a poté, s ohledem na dostupná data z prováděných statistických šetření, v dimenzi všech ekologicky hospodařících subjektů v České republice.

Klíčová slova: ekologický podnik, ekonomické faktory, náklady, výnosy, zisk

Even though the positive contribution of organic farming to the environment is beyond any doubt (and has been confirmed by a number of other studies), the question of economic profit is quite in order, just like in any other entrepreneurial area (Konečný et al. 2004).

As stated by Šarapatka and Urban (2006), an agricultural enterprise within the framework of organic agriculture is an economic unit from which it is expected, as of any other type of enterprise, that it will be economically efficient and thus economically viable.

The success of organic farms management depends on a number of factors. In principle, they could be divided into two groups: economic factors and other factors (non-economic). Of these, the non-economic factors (e.g. land quality, human labour consumption, composition and diversity of the type of product, manner of sale, degree of specialization and orientation of the enterprise, manager abilities, etc) directly influence the economic factors.

The author pays attention to the costs and revenues since these belong to the main economic factors.

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From the long-term point of view, it is essential that revenues exceed costs, i.e. that they not only cover all expended costs but that they also create profit.

According to Macík and Vysušil (2003), *costs* are defined as the financially expressed consumption of the means of production, purposefully spent on the creation of revenues.

However, when comparing the level and structure of the costs in organic and conventional agriculture, certain differences appear. If, at a general level, the categorization of costs into variable and fixed is considered according to their dependence on the changes in the production volume, we can expect the following differences in organic farming:

For the fixed costs:

– their *increase* – owing to a higher need of human labour in organic agriculture (Urban and Šarapatka et al. 2003), which is reflected in higher *labour costs* (in the conventional agriculture, the need of human labour is replaced e.g. with the use of herbicides instead of the mechanical elimination of weeds). However, the amount of the required human labour is also different in organic agriculture because it depends on the orientation of the given farm. If it operates on arable land, the human labour need is substantially higher than farming on meadows and pastures (where the claim of higher labour costs would not necessarily be true). Nevertheless, even in the case of farming on arable land, this statement is not quite exact because it deals with the jobs for which seasonal workers are usually engaged, and thus (if it concerns the work expended on specific tasks) their wage as stated by Novák et al. (1997) should be included into the variable costs instead of the fixed ones;
– *increase and decrease* in *depreciation*s. Owing to the lower use of machines for spraying and fertilizing, (Urban and Šarapatka 2005) depreciations may decrease. However, this decrease can be balanced by higher depreciations of the mechanization means used for land cultivation. Their increase can also be caused by other necessary investments in animal breeding (due to the strict standards), in the area of farm processing, or other business activities.

For the variable costs:

– *decrease and increase of external inputs.* The decrease concerns (according to Šarapatka and Urban 2006) the costs of mineral fertilizers and chemical substances in plant production, the costs of medications and veterinary treatment in animal production (better health is expected in organic farming compared with the conventional one). However, on the other hand, there are higher costs for the purchase of seeds and feeds. The amount of seeds used is larger (owing to the higher sowing rates which better resist weeds). With the higher sowing rates, there is associated a more frequent cultivation which assists keeping the weeds on the land down to a minimum (Šarapatka and Urban 2006).

Yields represent the financially expressed equivalent of the provided services regardless of whether their cashing was realized within the given period (Macík and Vysušil 2003). Thereby, the revenues differ from the incomes.

The most important revenue item is the *sales revenue.* Additionally, there are also subsidies (for the support of organic agriculture development, but also others) and other revenues (for example from the building rentals, bank deposit interest etc.). The level of the sales revenues is influenced by the production volumes (per hectare yield, efficiency) respectively, then by the realized production volume (substantially lower in organic agriculture compared to the conventional one) and the realized sales price (so- called farm price). It is not possible to say unambiguously (this statement can be supported in any way by the basis of the carried out research) that the production volume in organic farming is lower than in the conventional one. The research shows that the difference amounts to 10–20%. However, it is necessary to take this number with a reserve and to accept fluctuations in both directions as there are big differences not only among organic and conventional enterprises, but also among organic farms themselves, as well as within the framework of the given organic farm during the number of the years of management. The production volume is determined by many factors, for example by the land quality, climatic conditions, the technology of crop plant growing and animal breeding, and the selection of varieties and breeds.

Another significant factor which markedly influences the level of the sales revenue is the *price* for which the farmers sell their production. The determination of price level by farmers depends on the manner of sale of their production. If they decide for a direct sale (on a farm, at a market-hall – on the spot, or elsewhere), the price is higher (it also includes the costs for processing, package, sale, if the need be, and also the costs of transport) and it brings in a higher share of the final price which a customer will pay. However, if there is a mediator between the farmer and the customer (e.g. an agent, a wholesale, a marketing cooperative, a bio-product processor or a bio-food producer), the price is lower. Both ways have their advantages and disadvantages. The direct sale is advantageous both for the farmers and for the customers; there is a close contact between them. A customer will pay for bio-products a lower

price than in a shop; he/she can go to the farm and get to know better the methods and practices and a certain exclusivity of organic farming. For the farmer this way is more time-consuming; it demands the effort, the imagination, sale skills and the ability to communicate with the consumer. It also brings a certain loss of privacy. The described way of sale is advantageous above all for the farmers who produce a smaller amount of "goods" but it is more heterogeneous and, moreover, these products do not require much processing as is the case with fruits, vegetables, meat and some milk products. However, in the meantime, this method of sale is not developed enough in the Czech Republic and most organic farmers rather use the second method – an indirect sale. This option is more suitable for the farmers, who produce a large quantity of one commodity, but also for those whose products demand a higher degree of processing and they themselves do not have suitable conditions for it. This possibility is also chosen by the farmers who do not have the ability or courage to place their products on the market by themselves. There are disadvantages both for the farmers (they will obtain a lower price) and for the consumers who will pay a higher price in the shop (it also includes the costs of picking, sorting and packaging and also the costs of transport and the wholesale and retail services). Big farmers have a further advantage: the consolidation which means gathering the activities, which are characterized by a high level of risk or uncertainty, in larger groups, where this uncertainty is dispersed. Here, in the past, the differentiation processes of the production programs of large corporations took place in the areas of the increased uncertainty with regard to the demand dynamics under the influence of technological progress and structural changes.

In determining the farm price level, it is also important to consider, besides the manner of sale, other effects: the state of the market development, and the consumers´ demand for bio-foods, but also their willingness to pay higher prices for them. Then, the total level of revenues develops from a sold amount which is substantially lower in organic farming against the conventional farming, as already mentioned above. Not even the price premium (the difference which the consumer will pay for bio-food in comparison to the conventional food) is able to eliminate this deficit completely. Then, another economic tool gains importance (as a compensation for the economic profit missed and as a payment to the farmer for the added service – for the creation of a positive externality) – *subsidies*. Their role in the total level of the sales revenues of the farm is no less important, both in the period of conversion (above all because it is specifically in this period that the biggest decrease in the revenues is pre-supposed) and in the organic management regime itself.

Attention has been concentrated (or narrowed) onto such basic economic categories as costs, revenue and profit. However, it is dealing with the categories related to the enterprises of legal entities (PPO) which keep accounting records. Nevertheless, a big percentual share of the businesses in organic farming is represented by small entrepreneurs who are not registered in the Companies Register, have an annual turnover below 15 million CZK (enterprises of individuals – PFO) and keep the tax accounting. In this case, it is necessary to differentiate the items which serve the determination of "the trading operations results" (the basis for tax determination) – these are incomes and costs (Urban and Šarapatka 2005). Even though we deal with a completely different and hardly comparable procedure of determination of the tax payment base here (a principle of recency is a special difference), the resulting effect ("trading from operations") is given also by the difference (in this case between incomes and costs) whereas incomes should exceed expenditures.

MATERIALS AND METHODOLOGY

In the above outlined connections, the author has put forward as the main aim to carry out an analysis of the economic factors and an evaluation of their influence on the economic profit of organic agriculture farmers. The concurrent aim was to judge whether the data structure (as the available databases enable) is sufficient and relevant for the fulfillment of the main intention.

In the solution, the author used the data of the Institute of Agricultural Economics and Information (ÚZEI in Czech), the Brno branch. The database is maintained and monitored by the accredited inspectors of the particular inspection organizations (KEZ o. p. s., ABCERT AG and Biokont CZ, s. r. o.).

As the basic method, the ratio analysis and the data comparison (in the space dimension) were chosen.

RESULTS AND DISCUSSION

For the analysis of economic profit of organic farms, an evaluation of the level and structure of costs and revenues was considered in the enterprises of legal entities, and of incomes and expenditures in the enterprises of physical entities. However, no institution in the Czech Republic keeps a relevant database which

would make it possible to carry out such a detailed analysis of economic tools over all organic farming enterprises (Darmovzalová and Koutná 2009).

That is, no institution in the Czech Republic operates a relevant database that would enable such a detailed analysis of the economic instruments on behalf of all ecological farms. The Brno ÚZEI utilizes the public registers for monitoring the revenues of organic farms, but apart from the farming operations results, other economic instruments are not a part of their analyses (the questionnaire structure is not set up for this kind of data).

By contrast, the Prague ÚZEI monitors in its Farm Network Accounting Data (FADN) a detailed structure of the revenues and costs items in the enterprises of legal entities (PPO) and incomes and the expenditures in the enterprises of physical bodies (FPO, which would help the above mentioned intention very much), and thus also the size of "trading from operations" in the particular enterprises (for organic farms since 2001). Unfortunately, the sample of the FADN includes only about 8% of organic farms. The use of this database appears to only provide the supplementary information to the Brno ÚZEI database, i.e. not as a fundamental resource which would enable the generalization of its conclusions over all organic enterprises.

Table 1. Sales revenues of the enterprises of legal entities under organic farming

Sales revenues (thousands CZK)	Number of enterprises	
	abs.	%
1 to < 200	14	4.2
200 to < 500	13	3.9
500 to < 1 000	9	2.7
1 000 to < 3 000	33	9.9
3 000 to < 5 000	17	5.1
5 000 to < 10 000	47	14.1
10 000 to < 30 000	88	26.3
30 000 to < 60 000	27	8.1
60 000 to < 100 000	18	5.4
100 000 to < 200 000	6	1.8
200 000 to < 300 000	0	0.0
300 000 to < 500 000	1	0.3
500 000 to < 1 000 000	1	0.3
1 000 000 to < 1 500 000	1	0.3
1 500 000 and more	7	2.1
Not mentioned	52	15.6
In total	334	100.0

Source: Author, based on ÚZEI data

The following analysis will, therefore, reflect the Brno IAEI data. For the needs of monitoring of the revenues side, only the category of sales revenues was used as the database makes this possible (Table 1). Owing to the absence of the data, the other categories cannot be monitored. Furthermore, the subsidies category could be evaluated (for monitoring of the significance of their share in the total revenues, or incomes of a firm) because it is a very significant part of the revenues (specifically of other operation revenues in the PPO) or incomes (other incomes in PFO).

The Table 1 shows the revenues which had been monitored only in the legal entities enterprises (25.6% of the total number of organic farms). Of the total number of 334 enterprises, 52 (15.6%) had not stated the interval in which the revenues had been obtained. Almost 60% of PPO, which mentioned their sales revenues, attained a value of up to 30 million CZK. Most enterprises, 88% (26.3 % of the total number of PPO), mentioned that they achieved sales revenues of between 10 to 30 million CZK; 47 enterprises (i.e. 14.1%) in the range of 5–10 million, and 33 firms (9.9%) between 1 to 3 million CZK annually.

Generally, it can be said that, with some exceptions, the results concerned limited companies which employed fewer employees (mostly up to 20), managing bigger acreages (usually over 500 ha). They were predominantly oriented towards growing permanent grassland (TTP), supplemented with a small representation of arable land without cultivating vegetables and/or herbs. In animal production, the firms concentrated mainly on cattle, sometimes combined with breeding of sheep, horses and goats.

The analysis of the level and structure of the costs of the particular enterprises could not be carried out due to the absence of data. Operating results of enterprises have been analysed only to the respect of whether the given firm had achieved positive or negative values in 2007. Throughout 2008, all firms, both the organic farmers and the enterprises which were farming conventionally in 2007 but registered in the system of organic agriculture in 2008, were interviewed by the accredited examiners as required by the ÚZEI. This explains a greater number of the interviewed enterprises than was the real number of organic farms in 2007.

Of the total number of the interviewed enterprises (1 849), 80.8% (1 494 subjects) stated that they had achieved a positive operating result in 2007; 11% of enterprises (203 farms) had a negative result, and the remaining 8.2% (152 firms) did not answer (most often

for the reason that in 2007 they were not organic yet – this generally concerned the newly starting farmers). The numbers of farms with positive or negative operating results in the individual regions are listed in the following Figure 1.

As is obvious from the graph, most enterprises with the positive operating results were situated in the regions of Karlovy Vary, South Bohemia, Liberec, Zlín, and Pardubice. In general, it concerns the enterprises oriented at the TTP farming, in combination with animal breeding. They farm arable land only marginally. However, it is interesting that even the Zlín region, where the representation of orchards is significant, reached very favourable values. On the other hand, the majority of enterprises with the negative operating result is situated in the regions the orientation of which aims more at the arable land (the regions of Vysočina, Prague and Central Bohemia) and orchards (the Olomouc region) besides the TTP (the region of North Moravia where the representation of the TTP is significant, despite the fact that the operating results reach negative values more often than those in other regions. It can be assumed that in the regions where farming is more demanding, even higher subsidies for these cultures are not able to compensate sufficiently for the higher costs in order to achieve more favourable values of the operating results. This assumption should be documented by the concrete numbers; however, this is not possible due to the current data structure.

On the basis of the above described analysis, it can be concluded that organic farms are economically strong entities – as evidenced by 80% of enterprises with positive operating results (despite the fact that due to the absence of data, a detailed analysis of the partial economic tools in all entrepreneurial subjects could not be carried out). However, it can be assumed, on the basis of our own findings acquired from the discussions with agricultural producers and members of the expert public, that this fact is to a great extent due to the subsidies (even though it is not possible to express their share in the total revenues or incomes in specific numbers) provided to this type of farming, not by the sales revenues or incomes received from their own activities.

The opinions of the expert public concerning the described problems are very polarized. Some argue that the subsidies flowing into organic farming are adequate and that it is not necessary to give a significant preferential treatment to organic farmers over the conventional ones. On the other hand, others hold the view that the subsidies are insufficient and that the organic farmers should be compensated for the lost profit (owing to higher costs and lower revenues) and that they should be also given a preferential treatment for their environmentally friendly services.

The author believes that the database of the organic farms should be expanded by the addition of financial indicators (either at the Brno IAEI or the Prague IAEI, by broadening the existing sample of

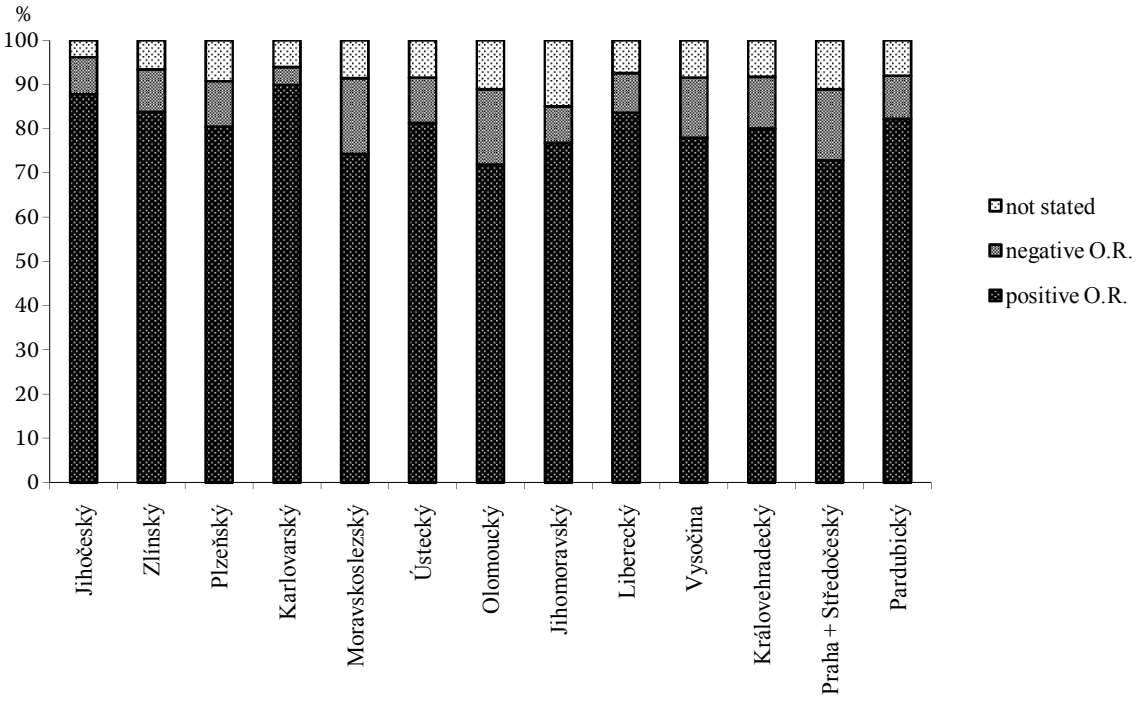

Figure 1. Operating results of farms according to the regions in 2007

Source: Author, based on IAEI data

organic farms in the FADN database). They would make it possible to determine the economic profit of the organic farms in the Czech Republic. At present this is not possible (only the basic statistical data are filed for the national or the EU needs).

The author also believes that such data are essential even for the state apparatus which should utilize them for its design of the subsidies policy for organic farming. The policy should be increasingly oriented not only towards the area of the primary industry (which is already adequate – as it is evidenced by the dynamics of the growing number of farms and their acreages), but it should also motivate farmers to an endeavor to bring the bio-products to the market. Otherwise, there is a risk that the bio-products will end up (for various reasons) as conventional products. This would prevent a situation in which farmers without any emotional relation to animal breeding and/or management of the landscape would also enter the system of organic farming. For such farmers, the subsidies are the main stimulus and they adapt the conditions of animal breeding and plant growing that will comply only with the minimum level that will keep the inspectors happy and would not attract sanctions.

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