MAJOR PROBLEMS OF ORGANIC FARMING – EXPERIENCE TRANSMISSION

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Abstract

As a very particular agricultural system organic farming encounters many problems. Some of these problems are common to several countries where organic farming is applied. On that ground it might be useful to compare condition and levels of organic farming in more countries, find its common problems and thanks to experience transmission try to eliminate some of these problems preventively.

Mutual comparison of organic farming in the Czech Republic with organic farming in Austria and actual conditions assessment provide to determine main problems of organic farming in both countries.

Within the framework of analysis of organic farming several general problems of organic farming in both countries were defined, e. g. lower yields and higher costs per production unit or legislative restrictions. At the same time for the Czech republic were defined major problems related to agricultural and socioekonomic differences (e. g. dual characteristics of farm size, high share of imported bioproduction) and for Austria (high prices of bioproducts, lower rate of conversion to organic farming) and proposed suitable solutions based on experience of partnership country. If the number of partnership countries with differentially developed organic farming was broaden and there was defined common problems and aims for organic farming in general it might be a very important step for simplification and acceleration of its development.

Key Words

Organic farming, main problems, experience transmission,

Agriculture is one of the oldest and the most areal human activity ever. Since the beginning it has greatly influenced landscape management and the environment when people begun to cultivate the soil, grow plants and domesticate animals. In the 20th century intensified agriculture begun to affect the environment, treat badly the animals, decrease food quality, degrade farmers social securities and community health, which lead to new conception of environmentally friendly agriculture (Urban, Šarapatka, 2003).

Austria is considered to be the cradle of organic farming and here in year 1924 the new philosophic system of agriculture was created by Rudolf Steiner, who founded The anthroposophic society. In the "Agricultural course" that represented the major part of his work, Steiner defined basic principles of organic farming and spiritual attitude to the nature. This was the beginning of ecology movement development in Austria, Swiss and Germany (Moudrý, a kol.,2008). In following years organic farming as a nature and environment preserving system had expanded to other countries and begun to be accepted as a sustainable agricultural practice (Petr et al., 1992, Dahlberg, 1991, Vach et al., 1996).

Together with organic farming itself also included practises were applied. In conditions where for the environment protection or animal welfare or products nutrition and health quality reasons new technologies for conventional farming could not have been used, there alternative technologies have been established and proved similarly high effect on yields or yield stability (Šarapatka, Niggli, 2008). Also today, however, environmentally friendly organic farming needs to be compensated by grants (Urban, Šarapatka, 2003). Thanks to the effort of more intensive nature protection and resulting

restrictions organic farming has not reached economy efficiency compared to conventional farming so far. Besides the grants this less-favoured conditions of organic farming should be compensated also through the effort multifunctionality fulfilment. Farming activities can be combined by other profit sources, for example higher share of permanent grasslands, ecological stability system elements - biocorridors, biocenters within the organic farm changes the landscape character and contributes to agricultural tourism (Penk, 2001, Vráblík, Vráblíková, 2002), or own production processing on farm enables direct final production sell in the place (Šroller a kol., 2001).

As well as the similarity between particular elements of organic farming in different countries is evident, there also similar problems appear. Through the comparison of these problems and experience transmission from countries with more developed organic farming these problems can be solved or practically eliminated.

Material and methods

For comparison of Czech and Austrian organic farming systems was used data provided by Ministry of Agriculture. Further data gained within statistical surveys on Czech farms in years 2006 - 2007 was provided from databases of the Institute of agricultural economy and information. Further additional data was gained within statistical surveys of organic farming in South and West Bohemia carried out by University of South Bohemia. Austrian party gained data from databases of Bio Forschung Austria. In cooperation with Bio Forschung Austria within the project KONTAKT MEB 2008/18 (2000/23, A 12p9) - Organic farming in the Czech Republic and Austria, major problems and experience transmission, was defined a set of major problems of organic farming in both countries and possible solutions were suggested.

RESULTS AND DISCUSSIONS

Major problems of organic farming in general

Organic farming principles that conform to legislative binds for fulfilment of further non-production functions compared to conventional farming systems bring organic farmers particular problems that conventional farmers do not encounter much or at all. These limitations result in lower yield and higher costs per production unit reached within organic farming. Even under optimal conditions and by using the most suitable crops, organic farming does not reach yields comparable with conventional farming and price per labour unit is always higher, which eventuates the necessity of grant support or marked bioproducts price rise in case of economic independence, or combination of both.

However, higher price of bioproducts that should compensate for hardly expressible or non-expressible benefits of organic farming causes some potential buyers to reconsider their decision to buy a bioproduct. There is generally accepted fact, that the less developed country the higher unwillingness of average customer to buy bioproducts. Important role plays also overall bioproduction and organic farming support and customers intelligence.

Other important role represent cheap imported rival products. This price comparison with these rival products on the background of global food shortage has been another problem of organic farming arising. Organic farming systems encounter these problems in general even in most developed countries.

Problems of organic farming in the Czech Republic and Austria

Austrian organic farming is far more developed compared to the Czech organic farming, therefore also the problems vary. Several general problems that have been present now in the Czech Republic, had already been solved in Austria, but further problems that Austrian organic farming faces to at this time will appear in the Czech Republic in the future yet. If we studied current problems of advanced Austrian organic farming we might be able to prevent Czech organic farming from future problems or partially eliminate them at least. Correspondingly our experience can be useful for other countries with beginning organic farming.

Major problems of organic farming in the Czech Republic

1. **Dual character of farm size category**
2. **High share of permanent grasslands, low stocking rates**
3. **Insufficient earnings from bioproducts production**
4. **Unsuitable crop rotations**
5. **Insufficient seed grain production**
6. **Lack of expert knowledge**
7. **Insufficient processing capacities**
8. **Low consumption of bioproducts**
9. **High share of imported bioproducts**
10. **Low social image of organic farmers**

1. Dual character of farm size category

Problem: In the Czech republic there are great differences in farm size. This results in mentioned dual character when there are many small farms (c. 70% of the total number of farms) that farm on agricultural land corresponding to 3% share only. By contrast, less than 3% of the total farm number are large farms, farming on 60% of agricultural land. Consequently small family farms are discriminated (insufficient access to bank money for organic farmers) and also there is lack of quality knowledge, especially on small farms. Very detailed specialisation on large farm is one of other problems.

Measures: This problem might be solved by higher and differently structured grants for small farms, apply of degressive grants with dependence on farm size and grants volume relating to labour (employee number) or to production intensity or quality.

2. High share of permanent grasslands, low stocking rates within organic farming

Problem: In the Czech Republic current agricultural grants depend on area, whereas granting is conditional on minimal stocking rate of 0,15DJ/ha. This value is very low and some farmers calculate on grant means and do not generate own production profit. Current grant scheme does not motivate farmers to farm on arable land, instead farmers grass as much area as possible with minimal stocking rates, because this the easiest way for earnings achievement.

Measures: In order to change this state it is necessary to motivate farmers to change or at least to use permanent grasslands more appropriately. Grant supports should be dependant on specific landscape conditions. Alternative utilisation of permanent grassland such as for energy purposes can be questionable because of current energy prices and change into arable land is suitable in particular regions (up to 600 above see level or in relation to geomorphological and soil conditions respectively.) The stress needs to be put on support and development of non-production activities. In recent past depopulated border regions of the Czech Republic that in the past decade were grassed very intensively can be used as a quality drinking water reservoirs or for tourism combined with nature preservation, for gene reserves preservation - old species and breeds etc. The share of arable land within organic farming can be achieved by rice of prices of product grown on arable land or by more purposeful multifunctionality support.

However, total share of permanent grasslands in the Czech Republic is to low and needs to be increased within conventional farming systems in production regions even in LFA regions in relation to geomorphological and soil conditions.

3. Insufficient earnings from bioproducts production

Problem: Some organic farmers are predominantly dependent on grants which results from one-sided organic farming focused on non-milk beef raising on permanent grasslands using minimal stocking rates combined with insufficient earnings and activities diversification. In addition to this fact this problem is also increased due to insufficient processing capacities and generally low consumption of bioproducts.

Measures: While finding solutions important role will play very good information background about products diversification possibilities for primary producers, grants policy trends assessment,

supporting economic, social and political independence and farmers education development. Effective bioproduction will be less dependent on grants, whereas energy management efficiency needs to be increased and multifunctionality needs to be supported in all aspects (agrobiodiverzity, production diversity, income sectors etc.) Supporting communication and cooperation between young organic farmers should be useful as well.

Further steps of this measure should concern customers interested in bioproduction. Here accessibility of information for customers needs to be increased and middle-class and low-income class customers to be motivated to buy. Direct bioproduction sell volume rise can be achieved by customer education increase.

4. Unsuitable crop rotations

Problem: Organic farmers who also farm on arable land very often use very simple and improper crop rotations with high share of cereal crops and low share of legumes.

Measures: Alternative crops should be more applied (e.g. spelt, buckwheat, naked oat....), education and access to information for farmers and customers, grants differentiation and processing capacities development should be more supported. In crop rotations improper winter crops (wheat and barley primarily) should be replaced by alternative crops (rye, triticale) and pseudo-cereal crops (buckwheat, amaranth), share of legumes (peas, lentil, lupine, beans..) and fodder crops (lucerne, broad bean, topinambour) should be increased. Following measures can contain education and motivation improvement which will lead the farmers to other steps (investments into potatoes cultivation technology and storage buildings, development of spices and herbs growing) that require advanced level of farmer's education. An important step also lies in crop rotation improvement for farming on arable land without animal breeding. This mainly involves legumes (clover, lucerne), green manuring and monitoring and improvement of nitrogen and litter soil balance in farming systems on arable land without animal breeding. These solutions will require further specific research support and support of experience transmission between regions and countries with similar conditions (e. g. Austria and Czech Republic.

5. Insufficient seed grain production

Problem: In the Czech Republic organically grown grain crop take about 20 000 ha, but seed grain crops are grown on area of 1 000 ha only. There is no certification system for organic cereal crops available and at the same time there is lack of producers, processors and distributors here (only one partially localised company for cereal crops, two companies for vegetables seed, one company for potatoes and one for fodder crops). Another problem consists in the necessity to produce bio-seed in conditions of organic and conventional farming systems.

Measures: Here the measure can consist of producers cooperation, Central Institute for Supervising and Testing in Agriculture, standards and regulations revision, new plant-breeding companies government support, development of sample farms, organic farmers education, access to courses and reference material, specialisation of consultants for seed production, divided certification for organic and conventional farming, indirect grants for use/production seeds for organic farming and research support.

6. Lack of expert knowledge

Problem: Within the Czech organic farming there is evident lack of theoretical knowledge and organic farming field production experience respectively. To some extent this results from lack of reference material for farmers' education and expansion and access to the internet as a mean for searching needed information.

Measures: Practice-focused education development, methodologies and information brochures editing, informative and educational campaigns.

7. Insufficient processing capacities

Problem: Very important problem of Czech bioproduction and its economic efficiency consist in practically missing small and middle size processing capacities. This partially arises from legislative problems (unreasonably demanding hygiene and veterinary standards for processing, different interpretation of EU standard in EU states and third countries).

Measures: Development of small and middle size processing capacities is definitely dependent on modifications of laws that should be less demanding. In next steps cooperation between organic farmers might be established that would lead to common processing capacities foundations which is dependant on farmers' motivation. Development of education for organic farmers should also provide more efficient utilisation of EU grants and mutual over-border cooperation development.

8. Low consumption of bioproducts

Problem: In the Czech Republic the share of organic farming is quite high, however there is very small group of customers buying bioproducts. To some extent this is caused by lack of customer awareness, high share of household food expenses (median c. 25%, EU average: 15% and low share of direct sell on farm (5%).

Measures: This situation can be improved by better education of customers and information availability and by support of bioproducts consumption in public eating houses and canteens. Also the accent should be put on youngest generation education (children are potential customers), parents awareness of bioproducts quality and healthy diet in general, low nutrition quality of "cheap" food products and further knowledgeability about environmental and social side-effects. These information on bioproducts advantages and reliability must be published by independent sources (universities, certified government institutes).

9. High share of imported bioproducts

Problem: In the Czech market there are approximately 3000 bioproducts offered globally, whereas two-thirds of which are imported. Domestic production thanks to its one-sided focus cannot cover the demand. In addition to this large majority of bioproducts is distributed in hypermarkets and supermarkets where mostly the imported bioproduction is promoted only. At the same time higher prices of bioproduction limit further rise of the demand.

Measures: Customers have to be well-informed and know that for higher price they not only buy a nutrition and health valuable product but they also pay extra charge for environmental added value, that cheap far-regions-imported products usually miss. Within next step should be developed direct sell on farms and marketing and subsidies support of domestic local/regional bioproduction.

10. Low social image of organic farmers

Problem: Another problem consist in low prestige to be employed in agriculture, which is combined with countryside depopulation.

Measures: Prestige of employment in agriculture can be reached by more intensive public knowledgeability and the farmer can be presented as a private entrepreneur, whose social profitability is provided thanks to non-production activities (landscape preservation, environmental non-production functions fulfilment. Well organized public-relation campaign should lead to creation of a positive farmers image, rise of their self-confidence and their job prestige. Countryside depopulation can be moderated when multifunction activities development was supported as well as communication and information technologies development (working as a home-based via the internet allows to be settled in countryside and employed in a city).

Major problems of organic farming in Austria

1. **Low share of conversion to organic farming**
2. **High prices of bioproducts**
3. **Rising problems connected with seed quality of cereal crops**
4. **Decrease of legumes production**
5. **Decreased sell of chicken and eggs production**
6. **Low share of domestic bio-vegetables**
7. **Insufficient domestic processing**
8. **Low sense of the meaning „nature conservation" within organic farming**

1. Low share of conversion to organic farming
Problem: Due to growth of grants for conventional and integrated farming, support for organic farming was partially reduced which caused rapid decrease in numbers of new applicants for conversion to organic farming.
Measures: This is a political issue which solution can consist in farmers motivation to conversion in relation to slight difference between grants; changes to Cross Compliance system and grants modification in relationship to area-related degressive system.

2. High prices of bioproducts
Problem: Bioproducts prices remain high but purchase price of primary production have been forced down. Among others the cause is false about costs (cost socialization and traders earnings privatization.
Measures: The solution might consist in innovation and optimisation of production systems (e.g. soil quality stabilisation and improvement, production methods innovation, labour efficiency increase, primary producers association because of distribution and processing, improvement of direct sell methods and reduce dependence on hypermarkets).

3. Rising problems connected with seed quality of cereal crops
Problem: European organic farming faces to wheat diseases *Tilletia sp.* and *Drechslera graminea.*
Measures: Scientific research of non-chemical practise-related measures against *Tilletia*.

4. Decrease of legumes production
Problem: In Austria legumes production is reduced due to disease (*Sitona lineatus*) and weeds expansion, problem related to simple crop rotations are in progress and also there is influence of climate changes.
Measures: Research of disease onset and invasion reasons, crop rotation variation, use of alternative legumes, resistant species breeding.

5. Decreased sell of chicken and eggs production
Problem: There is lack of poultry raising in Austrian organic livestock production. Due to insufficient protein content in feedstuffs for organic farming the poultry raising has been reduced, as well as poultry and eggs sell. In recent years legumes yields and protein production in fodder crops have been reduced.
Measures: Experiment-based research - increased nitrogen fixation in legumes in crop rotations, protein content and quality increase, utilisation of nitrogen-rich crops.

6. Low share of domestic bio-vegetables
Problem: With relation to rising efficiency of integrated vegetables production the share of domestic organic farming drops and share of imported vegetables rises. This problem consist of EU legal framework concerning plant protection and hand weeds regulation in growths, reduced possibility to employ foreign season workers, organic farmers are forced to produce high volume of high-quality vegetable and unsuitable climate in Austria.
Measures: Focus on domestic vegetables species, try to keep high-quality products and develop new farming practices.

7. Insufficient domestic processing
Problem: Low share of on-farm processed production results in sell of cheaper basic material to processors or traders. Due to this final bioproducts sell decreases and farm earnings fall.
Measures: Investments depreciation, associating or other kinds of cooperation for processing.

8. Low sense of the meaning „nature conservation“ within organic farming
Problem: Insufficient farmers' education and knowledge result in inadequate awareness of landscape segments as a stability sources, e. g. natural weed control, noxious agents regulation and prevention.

Measures: Research and systematic education is necessary for understanding the relationship principles in an agroecosystem such as between cultivated areas and surrounding uncultivated landscape segments and agrobiodiverzity.

CONCLUSIONS

EU agrarian policy supports development of sustainable agriculture and development of nature friendly farming methods. Organic farming is one of these supported systems of landscape management. In recent two decades all over Europe the development of organic farming has been very fast and there have many problems occurred in many countries. Thanks to defining these problems we could be able to solve them. Common aspects and differences between Czech and Austrian organic farming mentioned in this work describe the critical issues of this farming system. Experience and knowledge transmission can help to see these problems and their solution from different points of view. In some aspects Czech organic farming follows Austrian organic farming, therefore based on these experience we could prevent some of the problems and their impact or avoid them at all.

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