Research article

Development of Organic Animal and Crop Production in Bosnia

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Abstract About 35 million hectares of agricultural land are managed organically worldwide by 1.4 million producers. Bosnia has a big agro-ecological potential and natural capital for organic production (OP) as traditional small-scale agriculture can be easily converted to organic. Agricultural land covers 50% of the total area. The paper aims at giving an overview of the current situation of the Bosnian organic sector especially potential, animal and crop production, governance, legal framework and market. Some solutions to overcome the main barriers to OP development are discussed. The paper is based on a secondary data review and exploratory semi-structured interviews - dealing mainly with reasons for converting to organic; marketing channels; problems; impacts; access to agricultural extension - conducted in July 2012 with 20 organic producers from Sarajevo, Banja Luka, Mostar, Bihac, etc. Organic area represents less than 1% of the total agricultural area. Plant production - mainly cereals - is more significant than animal production. Wild collection plays an important role. The complex political structure renders organic sector governance difficult. There is no national action plan and no national law on OP was enforced. Only the Republika Srpska entity has a law on OP. Organska Kontrola is the first local certification body. The organic movement is experiencing new dynamics, pushed by farmer and consumer associations and market actors. Organic market is relatively young and small. Supply chains are generally short. Two marketing channels grow slowly: direct selling (on-farm, farm gate, green/farmer markets) and conventional retail. Certified organic products are exported primarily to the European Union. Further organic sector growth is more than likely. OP represents a valid instrument for sustainable natural resources management and rural development. For allowing organic farming to express all its potential domestic market should be developed; legal framework and governance enhanced; and institutional and financial support secured.

Keywords organic farming, extension, organic market, Bosnia

INTRODUCTION

Thirty-five million hectares of agricultural land are managed organically by almost 1.4 million producers especially in Oceania (12.1 million ha), Europe (8.2 million ha) and Latin America (8.1 million ha) (Willer and Kilcher, 2010). In Western Balkans Countries (WBC) the debate on organic agriculture development is taking place, with the involvement of public and private actors, within various cooperation projects and consultation networks operating at different levels (MAIB, 2008). Organic markets in the WBC in general and in Bosnia and Herzegovina (BiH) in particular are, compared to some of the organic markets in Western Europe, relatively young, very small and in an early stage of market development (Renko et al., 2010). During the last years, domestic market actors and their associations as well as foreign market actors and policy makers often pushed the organic sector evolution with regard to different aspects: official regulation, certification and labeling of organically produced and processed products. Significant influence on organic movements in most WBC countries comes from the legal framework of the EU (Renko et al., 2010).

Bosnia and Herzegovina consists of two governing entities namely the Federation of Bosnia and Herzegovina (FBiH) and Republika Srpska (RS). Agriculture share in GDP was 8.1% in 2011 (EC, 2012). Agriculture employs a fifth (20.6%) of the total labor force *i.e.* 167,000 persons (ASBiH, 2012). Agricultural land covers 50% of the total area (MoFTER, 2009). Bosnia and Herzegovina has good preconditions for organic animal and crop production and wild collection (Dimitrije and Tomic, 2010; Renko et al., 2010) but a series of problems hinder further development of the sector.

OBJECTIVE

The paper aims at giving an overview of the current situation of organic farming in Bosnia and Herzegovina.

METHODOLOGY

The work is based on a secondary data review and exploratory semi-structured interviews. The main secondary data sources were ministries, specific organic statistics, certification bodies, professional organizations, the International Federation of Organic Agriculture Movements (IFOAM), the Mediterranean Organic Agriculture Network (MOAN), etc.

Semi-structured interviews (SSI) were conducted in July 2012 with 20 organic producers randomly chosen from nine cities/municipalities all over BiH: Sarajevo, Banja Luka, Mostar, Bihac, Ribnik, Petrovac, Kozarska Dubica, Knezevo and Konjic. The checklist prepared for SSI included 33 questions dealing mainly with: reasons for converting to organic farming; organic animal and crop production as well as beekeeping; main marketing channels; problems and constraints; main economic, social and environmental impacts of organic agriculture; access to agricultural extension and subsides; main sources of information about organic agriculture; involvement in organic agriculture projects and initiatives; social capital of organic producers; collaboration and contact with other institutions and actors (*e.g.* certification bodies; public institutions; research institutes; donors); etc. Some solutions and recommendations to overcome the main barriers to organic production development provided by the interviewed organic operators are discussed.

The average age of the interviewed organic operators is 46.4 (age range: 27-80). Almost all interviewees (90%) are men. Among the interviewees there are no illiterate, half of them (50%) have secondary education while 20% of them have high education. The surveyed rural households generate income mainly through farming, pensions and salaries from the public sector. Farm surface ranges from less than one to about 100 hectares. Land use is dominated by arable land and permanent grassland and grazing land while land surface dedicated to organic permanent crops, aquaculture and apiculture is quite limited.

RESULTS AND DISCUSSION

Bosnian agricultural production is more traditionally oriented, and the use of pesticides is lower than elsewhere in Europe (Stanojcic-Eminagic, 2010; EC, 2009). There are also few industrial polluters (Stanojcic-Eminagic, 2010). In fact, only 20% of BiH's agricultural surface is suitable for intensive farming (EC, 2009). Because of the low consumption of fertilizers and pesticides, BiH's traditional small-scale agriculture can quite easily convert towards organic farming (Renko et al., 2010). The average farm size is 3 ha. Large parts of the country are uncultivated land or forests while two thirds of the territory are considered mountainous or hilly. Wild collection of fruits, herbs and mushrooms is an important traditional activity (Dimitrije and Tomic, 2010). Additional advantages are the relatively low labor costs (EC, 2009).

The exploratory field survey showed that the main reasons for converting to organic farming are: economic profit; personal satisfaction; environmental protection; and healthy production. The interviewed organic operators believe that organic agriculture bring multiple benefits. Some of the interviewees (15%) consider that organic agriculture has not brought about any economic impacts. They very likely refer to their household's financial situation. Nevertheless, most of the interviewees consider that organic agriculture has generated multiple economic benefits to their rural households and communities. These include higher prices (premium prices) and income, lower production costs and local economy revitalization. The main social impacts of organic agriculture are social capital strengthening; better relationship with neighbors; and increased membership in cooperatives and associations. The main environmental impacts are reduced soil and water pollution and the conservation of biodiversity (*e.g*. local and traditional varieties).

Organic agriculture is at an early stage of development in BiH and there are no national standards yet being enforced. A national Law on Organic Farming is in the phase of adoption. The law is fully harmonized with the new European Union's regulations on organic farming (834/2007 and 889/2008). Currently only in the Republika Srpska a Law on organic food production exists. Organska Kontrola (OK) is the first certification body in BiH, established in 2004 by the "OK Association". OK has developed organic certification standards in accordance with the IFOAM's basic standards and EU regulations (Dimitrije and Tomic, 2010). The certification bodies mentioned by the interviewees are OK, ECON, ECOline and BeHaBioCert.

In BiH, organic area is 200-400 ha which represents less than 0.1% of the total agricultural area. The number of organic farmers is about 300. The average organic farm size is 1.2 ha. More than 440,000 ha are certified as surfaces for wild collection of medical and aromatic plants, and mushrooms. Wild collection makes up a significant share of total organic sector. Production is geographically concentrated in Sarajevo region, central Bosnia region, Herzegovina region and north-western Bosnia. These regions are suited for wild collection (Dimitrije and Tomic, 2010).

All the interviewed organic operators were crop and animal producers. Nevertheless, some of them deal also with other activities such as beekeeping or over other part of the supply chain *e.g*. processing and direct sale. There was also a fish producer. The field survey showed that a wide range of crops is grown organically in BiH. The most common organically grown crops are: pepper, onion, potato, tomato, linseed (common flax), rye, maize, buckwheat and barley. As for livestock, the most important reared species are pigs, bovines, sheep and chicken. The interviewed organic operators have about 80 beehives.

A relatively well-organized supply chain already exists for export high-value organic products such as medicinal herbs, honey, berry fruits and wild collection products; that are sold on European markets (MAIB, 2008). The major exported Bosnian organic products are tea, dried mushrooms, dried forest fruits, essential oils and raw plant material (sage for teas). Approximately 50-60 products of different kinds of herbs and tea are also being produced and exported, mostly to western European markets. The main imported organic products in BiH are Kiwi, biscuits, juices, various flours and meals, and pasta (Dimitrije and Tomic, 2010).

Organic food processing started in 2001 mainly based on essential oil production, forest fruit processing (mushrooms, berries, cranberry, blueberry, rose hip, etc.). The sector is still under development and involves some 20 small and medium enterprises (Dimitrije and Tomic, 2010). The main processing activities of the surveyed organic operators include flour production (rye, wheat, maize, buckwheat); production of wine (blackberry), liqueur (blackberry) and *rakija* (blackberry); oil extraction; jam and fruit juice production; bakery; etc. Some of them deal also with bottling and packaging.

The organic market in BiH is very small mainly because of the low purchasing power of the population. It is estimated that only around 3% of the population can afford buying organic products (Stanojcic, 2004). In some cases producers sell their certified organic products at conventional prices. This is foremost the case for all unprocessed items of agriculture and wild collection. Furthermore, the so-called healthy food is often misinterpreted as organic food. The organic sector production is still very small and therefore the supply chains are not developed. The organic market represents only about 0.4% of the total food market value. However, according to some sources, the organic market in BiH is growing at an annual rate of 10 to 20%. Organic wholesale is at the beginning of development. Specialized outlets for organic products do not exist. Generally, the distribution channels for organic products in BiH are: conventional supermarket chains (Mercator, Tempo); drugstores; pharmacies (herbal teas); green markets in Sarajevo, Banja Luka and Mostar; and direct selling (Dimitrije and Tomic, 2010). The main marketing channel used by the interviewed organic producers is on-farm direct sale. However, also farmers' market and wholesale to processors are relevant. Other marketing channels include box schemes.

Most of the interviewed organic operators (75%) think that the decision to convert to organic was appropriate as production of healthy food is a good way to increase household income and to make agricultural production more sustainable. Nevertheless, it is important to consider that 15% of the interviewees answered that they regret that decision. That is, according to them, mainly due to the current conditions in BiH making organic agriculture not sustainable. The main problem faced by the interviewed organic operators is the lack of support from municipalities and other public institutions. They mentioned also other constraints such as very rigid regulation; high prices of organically allowed inputs; high certification costs; difficulty to find organically allowed inputs on the market; marketing/sale difficulty; pollution and negative externalities caused by neighbors; lack of training on organic farming; and low prices of organic products. Other problems include lack of financial resources and difficult access to credits; market insecurity and demand volatility; weak organization at the state level; irregular and delayed payments; and problems with pests and climatic disasters. Organic prices are only about 20% higher than prices paid for conventional products; which does not allow covering higher production costs.

A series of major problems still constitute hindering factors for further development of the organic sector: lack of information about organic products; the distrust to the information on the label; lack of promotional activities; little acceptance of paying price premiums for organic products; low availability of the organic products; and lack of domestic supply chains. Hindering factors include as well the strong export-orientation of the supply chains, insufficient domestic infrastructure, lack of expertise among farmers and processors, and costly and complicated certification (Renko et al., 2010).

According to the organic operators, institutions that should make more efforts to solve the problems they face are: the State, municipalities/cantons, entities, cooperatives, and the extension service. Other interviewees pointed out that it is necessary to increase engagement of scientific-research institutions to demonstrate the benefits of organic farming in order to attract relevant institutions and foreign investors. It is clear from the provided answers that a concerted effort of many institutions is necessary.

All organic operators in the RS declared that they received subsidies. In the FBiH only some organic producers have access to subsidies and incentives. The main subsidies and incentives needed by the interviewed Bosnian organic operators change from an entity to another. In the FBiH they are mainly related to easier access to funds and loans with low interest rates. Also in the RS the same type of incentives is needed. However, additional requests concern support for getting financial subsidies; supporting organic farms mechanization (cf. weed management); and support for storage, processing and irrigation facilities. They also insisted on the fact that the new Law on organic farming should be enforced as soon as possible.

As for the social capital of organic operators, 70% of the interviewees are members either of associations (*e.g*. Animal Husbandry Association) or cooperatives (*e.g*. Ecoline, ECON, Sunce, Tresnja). It should be highlighted that 15% of the interviewed organic operators are members of both of them. Some organic producers are also members of other participatory and civil society groups or organizations such as hunting associations.

Two fifths of the interviewees do not have any ongoing collaboration with other institutions. The remaining deal with many institutions depending on where they operate (FBiH or RS). All in all, organic operators deal with the following institutions: municipalities; entities' ministries of agriculture; cooperatives (*e.g.* Ecoline, ECON, Sunshine and Cherry Product); research institutes (*e.g.* Agricultural Institute at Butimir (Sarajevo); Agro-Mediterranean Faculty (Mostar); Institute of Agriculture in Bihac; Institute for Agriculture in Unsko-Sanski canton (FBiH); Agricultural Institute of the Republic of Srpska); certification bodies (*e.g.* OK; BeHaBIOCert); extension service; etc. Some of them have contacts with organic producers from other countries *e.g.* Croatia.

The interviewees get information about organic agriculture through attendance of courses and conferences or via the Internet; TV; trips and visits to other organic farms; magazines and newspapers; and the radio. Other information sources include friends and professional advisers. The high percentage of organic producers that rely on these alternative information sources can be explained by the fact that only less than a fifth on the interviewed organic producers (15%) has contact with the agricultural extension staff and uses services provided by them. Used extension services and information are related to production methods, optimal sowing and planting time, agro-technology and animal husbandry. According to MAIB (2008), most organic producers and processors in the WBC complain about the lack of adequate extension and advisory services which are crucial for the well-functioning of the whole supply chain. The creation and improvement of supporting structures and services for production and market development is crucial.

Almost a third of the interviewees (30%) do not know anything about organic agriculture programs and projects while only 15% of them have been involved in previous ones. Donors, governmental and non-governmental organizations have been active in supporting the organic sector. Currently, a project called the "Development of Organic Agriculture in BiH" is being supported by the Swedish International Development Agency (SIDA) (Dimitrije and Tomic, 2010).

The interviewed organic producers provided many recommendations for fostering the development of OA in BiH: better organization at the state level; improving protection of organic producers' interests; increasing state and public institutions' assistance and support; better access to markets; better market control; increasing organic producer income through guaranteed premium prices and subsidies; increasing awareness about the safety and quality of organic food products; increasing availability of organic inputs; simplifying certification procedures and reducing certification costs; and increasing involvement of public and civil society organization in the organic sector. In particular, agricultural research and scientific institutes should help organic farmers by exploring new possibilities of application of various plant-based pesticides, in order to reduce the use of harmful chemicals, as well as the selection and breeding of crop varieties that are more adapted to local conditions (climate, soil, pests, etc.). These can include also autochthonous varieties thus contributing to biodiversity conservation.

In BiH there is a need to enhance understanding and provide more information on the whole concept of organic agriculture production and also to secure institutional and financial support to develop the sector. There is also a need to raise public awareness to appreciate the positive externalities of organic farming. This should be done through media promotion, and farmers' fairs and local markets organization (Dimitrije and Tomic, 2010). Options and solutions to overcome the main barriers to the development of organic agriculture include as well (Renko et al., 2010): organizing producers in associations and cooperatives; know-how transfer; teaching organic farming in schools and universities; encouraging vertical and horizontal integration in the supply chain; fostering aggregation; clarifying labeling and certification procedures; and providing online information. Strengthening intra-WBC cooperation, exchange and networking is also a highly appreciated area of intervention. Better and thoughtful synergy in policy-making processes could foster the mainstreaming of organic agriculture and integrate its future development trajectories into the wider rural development context and dynamics. The role of the state as well as national movements is important in the development of the organic sector (MAIB, 2008).

CONCLUSION

Further growth of the organic sector is more than likely as Bosnian organic producers are highly motivated and committed. BiH has all the natural prerequisites for organic food production but very important is farmers' willingness to produce organic food and consumers' willingness to pay premium prices. Bosnian organic market is relatively young and small but is dynamic and linked up internationally. The scope of production is very wide, with a lot of different products, but often small quantities. Wild collection plays an important role in the overall organic raw material production, mostly dominating the agricultural production. Furthermore, plant production is more significant than animal production. Organic food processing sector has been improved in terms of quantity and quality. Supply chains are generally short, with much direct selling on the domestic market. Domestic supply chains do often still have pioneer character and are still in an early stage of development. Producers and consumers are often aware of organic farming benefits and consumption trends are in favor of the sector. However, the development of the organic sector is hindered by many problems. Due to the complex politico-administrative situation of the country, a harmonized national legal framework for the organic sector still does not exists.

There is a need to enhance understanding of the whole concept and philosophy of organic agriculture and also to secure the state institutional support as well as domestic and foreign technical and financial assistance. In order to raise public awareness the concept of organic food production needs to be promoted amongst general public especially women and young people. The practices of organic production, handling and processing and the quality of products have still to be improved. Diffusion of organic good practices requires innovative ways for organic-specific knowledge generation and dissemination and long-term investments especially in the agricultural education-research-development-extension system. Moreover, organic product diversification and structuring of related supply chains is needed to foster further development of organic agriculture.

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