

## AGRO-ECOLOGY, ORGANIC AGRICULTURE AND FOOD SOVEREIGNTY

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### Abstract

*This paper aims at analyzing the expansion of the agro-ecology and organic farming in Romania. The topic was chosen because of its increasing importance in our country, in Europe and all over the world. People's interest in healthy living and the increasing demand for organic products transforms the agriculture sector from an industrial "big food" one towards agro-ecology and organic farming based on the application of food sovereignty vision. Our paper consists on a desk research. By taking into account new theoretical and practical approaches and by investigation some relevant statistical data in the field of organic agriculture, we had identified that there are still incomplete parts that makes things difficult in Romania when it comes to apply organic agriculture principles and to ensure the authenticity of certain organic products. We consider that Romanian operators should promote their products first of all at the national level, in order to awake the interest of the consumers in this field, although it could be quite difficult mostly within areas with high level of poverty. Food sovereignty is opening new opportunities for local small-scale farmers by increasing their capability to explore their rights to decide not only what can be chosen for consumption but mostly what, how, when and for whom to produce organic safety and health food.*

### Keywords

*organic farming, agro-ecology, organic products, food sovereignty, food security, sustainable development*

### Introduction. The paradigmatic shift from industrial agriculture towards agro-ecology

During 1950's, the term "industrial agriculture" was looking for profit maximization within agribusiness and the so-called "big agriculture" (Sabau, 2014). This type of agriculture had been based on an intensive use of pesticides, intensive irrigation, and cheap fossil fuel energy. As an effect 80% of arable land was cultivated under the auspices of monoculture producing and transgenic crops (that had increased to an average level of 12% of the arable land). Collateral damages of the "big agriculture" started to appear and to amplify their effects. Human civilization experienced biodiversity loss (75% of the agriculture crops) due to the nitrogen contamination and to the greenhouse gas emissions (30-48%). Industrial agriculture contributes with 25-30% of greenhouse gas emissions (Altieri and Nicholls, 2012, p. 2). We are approaching critical limits in the phosphorus cycle, fresh water overuse (70% of global withdrawals) and arable land degradation: 2 billion hectares had been degraded since 1950's (Nijs, 2014). We face important economic,

social, cultural and environment challenges that affect the level of economic efficiency and effectiveness:

- *Arable land misused.* Global arable land had been used for animal feed and only fewer for food. Global potential arable land located in Latin America (Argentina, Brazil, Bolivia, Colombia) and Sub-Sahara Africa (Democratic Republic of Congo, Angola, Sudan) are subject to “*land grabs*”.
- *Output loss.* 40% of food is wasted in today’s systems.
- *Concentration.* Just three companies control more than half (53%) of the global commercial market for seed and 10 pesticides companies control 95% of the agrochemical sales worldwide.

The world currently produces sufficient calories per day (2,100 kilocalories per day) to feed the global population. However, we experienced a global malnutrition expressed by data such as: 805 million people suffer from starvation; another billion are undernourished, mostly children (FAO, 2013); 29 million deaths/year are due to *overeating* (17,5 million for cardiovascular disease, 3,8 million for diabetes, 7,9 million for cancer) and 155 million children are overweight or obese. Unfortunately we also experience a global hunger and an important food crisis. Many authors believe that industrial agriculture is responsible as well for the food crisis. Industrial agriculture had almost disconnected farmers from their land. Over the last 50 years, 800 million people have moved from rural areas to cities and to foreign countries (IFAD, 2008). Industrial agriculture destroys the economic, social and environmental vitality of the local agricultural systems.

It becomes obvious all over the world that it is high time for a *paradigm shift*. As highlighted by Debbie Barker, industrial farming had amplified hidden effects conducting to hunger, global migrations, and climate change, among many other undesirable effects (Barker, 2007). Under these auspices we consider that agro-ecology and organic farming are viable alternatives that can and have to replace industrial agriculture. Thus these sectors request special dedicated research studies and investigations. Our paper is mostly a desk research based on a brief literature review and on the investigation of some statistical data dynamics with respect to the chosen topic.

### 1. Brief literature review

Based on a brief literature review we had identified that *agro-ecology* is considered both as *an applicative science* and as *an art*. If we look for the pragmatic approach, agro-ecology is considered as a science that applies ecological principles in order to design and manage agro-economic systems in an effective and efficient way. The main idea expressed by agro-ecology suggests that small-scale farmers are more tempted to replace the pesticides and chemical inputs (used intensively by the industrial agriculture) by natural processes and products (such as natural soil fertility) that may keep farmers and peasants more close to the natural environment as compared to the industrial agriculture (Altieri and Nicholls, 2012, p. 2).

Many authors consider also that *agro-ecology* is as well *an art*:

- of learning from nature and employing in a smart, sustainable and inclusive way the agricultural ecosystem.
- of feeding people by providing a healthy and safe food production (Lappé, 1971).
- That is based on exploring better the capability of the small-scale farming. In line with this approach, United Nations declared 2014 as *the International Year of Family Farming* (<http://www.agriculturesnetwork.org/what-we-do/advocacy/2014-iyff>; <http://www.ifad.org/events/op/2014/roundtable.htm>.)

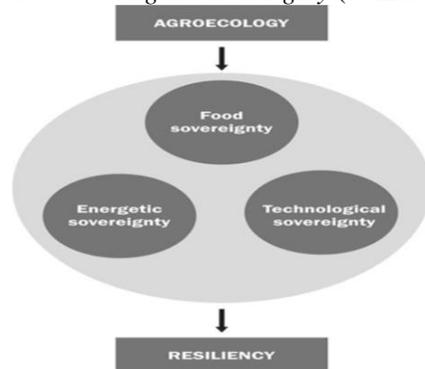
The agro-ecology highlights also the importance of a shift from *food security* to *food sovereignty* perspective.

*Food security* describes a situation when all the people belonging to a local community or to a nation can satisfy their needs and food preferences by getting access to food any time in any location available for all its members (Burchi, 2007, p. 7). This requires a physical and economic access and involves both a quantitative (sufficient food) and qualitative dimension (safe and good quality food with respect to needed nutritious provided in the case of a diet as well). Food security acts like a prerequisite for a long-run sustainable development of a nation or a local community based on an active and healthy life of the people that live within it (FAO, 2002). The above definition of food security was developed in 1996 when 184 countries, met in Rome for *the World Food Summit*.

*Via Campesina* launched the idea of “*Food Sovereignty*” at *the World Food Summit* in 1996 (<http://www.viacampesina.org/en/>). The concept was further defined on *the First Forum for Food Sovereignty* hold in Sélingué, Mali in 2007. At the end of this forum it had been adopted the *Nyéléni 2007 Declaration* that had also defined *food sovereignty* (Nyéléni, 2007). While food security has mostly a *top-down* orientation, *food sovereignty* is looking for a *bottom up* approach that focuses on small-scale farmers and on their right to get access to food. This approach looks for a broader, holistic vision that joints economic, social, environment and cultural dimensions of the sustainable development. Into this respect, according to *food sovereignty* principles people have the right not only to get access to healthy and save food, but also to respect their cultural identity by choosing an appropriate food type that respects also psychological, cultural ecologically and other non-economic criteria. While food security focuses more on consumption, *food sovereignty* looks also for the small-scale farmers as producers and for their right to decide about what, how, when and for whom to produce. *Food sovereignty* respect individual rights both as consumers and as potential suppliers. Despite the fact that industrial agriculture has focused on the corporations profits (important for agribusiness) *food sovereignty* is people oriented and looks for the individual desires, aspirations and needs. It respects people rights both as consumers and/or producers. Food sovereignty invites to the rebuilding of a more safe and sustainable agriculture and food systems (such as agro-ecology, and organic food that preserve also biodiversity). Food sovereignty applies the types of policies that are supporting individual peasant and family farmers. Expressed in a more simple way, while *food security* focus on *consumers & global consumerism* (by supporting indirectly multi national companies interested to stimulate global consumption in order to maximize their profits, no meter the quality and the availability of food for all the people), *food sovereignty* highlights the role of individual producers (small-holder farmers) to decide how to feed themselves and their own families. Food security is about assuring food in the hypermarkets for developing global trade and commerce, while *food sovereignty* respects the right of individuals to decide how to explore their *ability to grow their own food and feed themselves* and their families according to their individual needs, traditions, habits, respecting their cultural identity and social aspirations (Food Sovereignty 2014, <http://www.grassrootsonline.org/publications/multimedia/slideshows/food-sovereignty>; Food Sovereignty, 2014, USC Canada, <http://usc-canada.org/the-issues/food-sovereignty>). Due to its importance, eight countries had included food sovereignty into their Constitutions: Ecuador, Venezuela, Mali, Bolivia, Nepal, Nicaragua, Uruguay and Senegal (Beauregard, 2009).

*Agro-Ecology and Food Sovereignty*

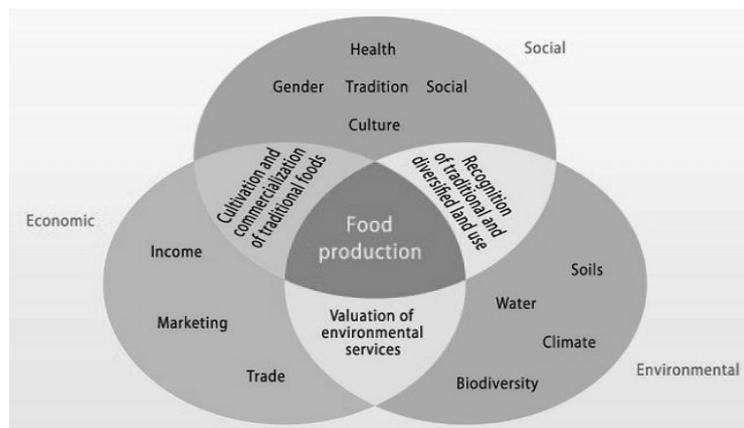
An interesting issue regards the connection between agro-ecology and food sovereignty. *Agro-ecology* complements the goals of *food sovereignty* adding also two other dimensions of sovereignty: *energetic and technological sovereignty* (as illustrated in figure 1).



Source: Altieri and Nicholls, 2012, p. 26

**Fig.1. The synergetic connection between the three types of sovereignty and agro-ecology**

Some authors suggest also a holistic and cross-disciplinary approach with respects the so-called *human ecology* that is part of a worldwide movement towards agro-ecology based on ecological sustainability and social justice. While industrial agriculture and food security attempt to maximize multinational corporations profits, providing food for global consumers no meter if all the people can afford to buy it, agro-ecology and food sovereignty are more human centred and are looking also to assure equal rights and opportunities for all the people with a special attention concerning small-scale farmers. Agro-ecology supports a holistic approach and looks for a multifunctional, cross-disciplinary perspective that interconnects the economic, social and environment dimensions of the long-run sustainable development (figure 2).



Source: Barker, D., 2011, p.22, [http://www.centerforfoodsafety.org/files/thewheeloflife\\_barker\\_40796.pdf](http://www.centerforfoodsafety.org/files/thewheeloflife_barker_40796.pdf)

**Fig.2. A multifunctional and cross disciplinary perspective of agro-ecology**

Agro-ecology recognizes also both conventional and diversified land use, including the perspective of organic food production. Being interested to identify if there are any differences between yields obtained from organic and conventional production, researchers from *University of Michigan* compared these types of yields by taking into account a data base of 293 examples. These researchers used the 293 data base in order to estimate the average yield ratio between organic and non-organic (conventional) products. For the majority of the food categories taken into account, the average yield ratio allows for a clear distinction of the typology of countries development level classified with respect to the value of the average yield ratio. Thus, the authors provided a distinction between: a lower than 1.0 ratio, for the developed countries and a corresponding rate greater than 1.0, for the developing countries (Altieri and Nicholls, 2012, p. 25). Further, based on the average yield ratios, the authors tried to model the global organic food supply that could be grown based on applying organic farming.

The main results of this research study indicate that the current agricultural land base can be used in order to produce food on a global level by applying organic methods. This organic food production seems to be quite *enough* for feeding the actual number of human population, and even for a larger one in the near future (Badgley et al, 2007, <http://www.stopogm.net/sites/stopogm.net/files/Orgsupply.pdf>, p. 86). We consider that this type of research can be continued by making a distinctive comparative analysis of world regions by taking into account the different expected trends in the population dynamics. For instance, if we will refer to Europe, it is well known that on this continent we deal with an aging population due to a demographic crisis that had affected substantially both the number and the composition of the population. On other continents such as Africa and parts of South-Eastern Asia, the number of population is increasing and it is expected to increase at least until 2050 and 2060 (according to UN population prognosis). If we add also the fact that industrial agriculture uses 70% of the world's agricultural resources to produce just 30% of our global food supply, we have to realize that agro-ecology and organic farming are viable alternative that need to replace the industrial agriculture. Agro-ecology provides prerequisite for food, energetic and technological sovereignty. Decision makers have to promote agro-ecology and organic farming based on the principles of food sovereignty. By applying food sovereignty vision, we will feed the population, both the present and the future generations.

## **2. Sustainable development and organic farming**

As highlighted before according to the holistic perspective regarding the long-run sustainable development, organic agriculture is a viable and robust answer to the economic, environmental and social challenges faced by our contemporary world. Organic agriculture is applied in almost all the countries of the world. It looks for specific production systems that avoid the use of synthetic products such as fertilizers and pesticides.

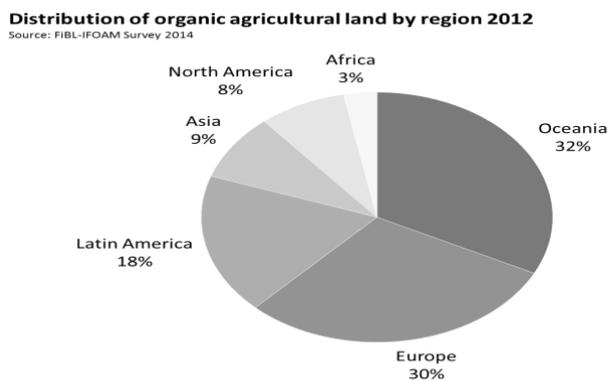
### *Organic products*

Products can be label as "*organic*" if almost 95% of their inputs used in the agricultural production are organic. Organic products include: wine made from organic grapes, baby food, beer, yoghurt, cakes, pastries, cereals, bread, biscuits, cold meats, fruit juices, and vegetables.

### **2.1 The evolution of organic agriculture all over the world**

According to "*Organic 3.0*" initiative organic agriculture has a holistic nature and is a viable opportunity to address global challenges. The report "*Organic Agriculture Worldwide: Key results from the FiBL-IFOAM survey on organic agriculture worldwide 2014*" published under the auspices of the Research Institute of Organic Agriculture (*FiBL*) and of the International Federation of Organic Agriculture Movements (IFOAM) by Helga

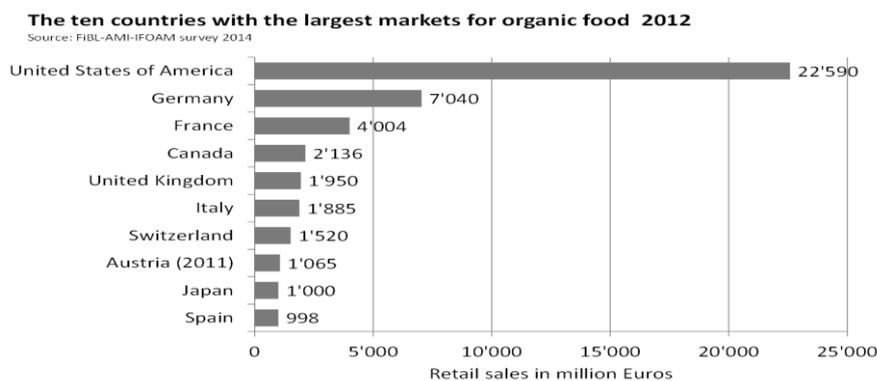
Willer and Julia Lernoud in March 2014 includes statistical data from 164 countries. The data had been collected based on a dedicated survey conducted between July 2013 and February 2014 (<http://www.organic-world.net/yearbook-2014-presentations.html/>). This report illustrates that worldwide there are 37.5 million hectares of agricultural land organically cultivated by 1.9 million producers. In figure 3 there is illustrated the distribution of the organic agricultural land by continents in 2012. While Oceania has almost one-third of the global organic agricultural land, Europe has more 30 percent and Latin America just 18 percent of the world's organic land (<http://www.organic-world.net/yearbook-2014-presentations.html/>, p. 15).



Source: FiBL, 2014, p. 4

**Fig.3 Distribution of the agricultural land by continents in 2012**

At the global level, organically cultivated land areas had increased since 2011 by 0.5 percent. The countries with the largest organic agricultural cultivated surfaces are: Australia (12 million hectares), followed by Argentina (3.6 million hectares) and the United States, with 2.2 million hectares (FiBL, 2014, <http://www.fibl.org/fileadmin/documents/de/news/2014/willer-2014-global-data.pdf/>). The countries that reported the highest numbers of producers until the end of 2012 are: India, Mexico and Uganda. Figure 4 illustrates the distribution of the top ten countries with the largest organic food markets.



Source: FiBL, 2014, p. 8

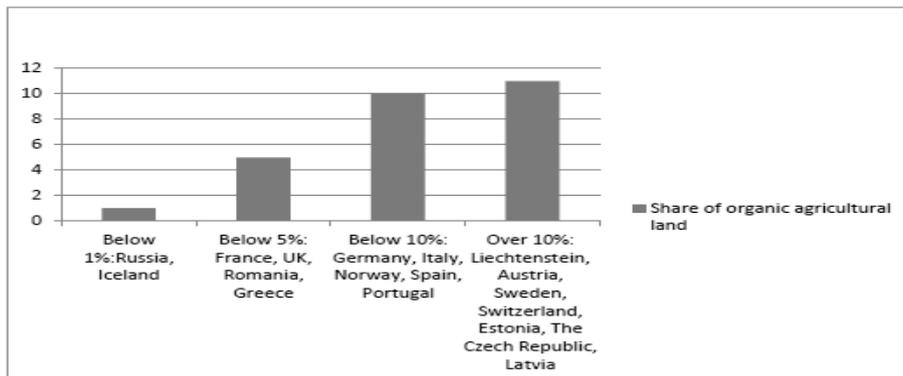
**Fig.4 The top ten countries with the largest markets for organic food in 2012**

Seven of these countries are located in Europe (Germany, France, UK, Italy, Switzerland, Austria, Spain)

## 2.2 The evolution of organic agriculture in the European Union

As illustrated before, 30 % of the world's organically managed land is in Europe. *Eurostat* data dedicated to the organic sector are available starting from 1998. *The European Action Plan for Organic Food and Farming (Action 3)* highlights the need to collect specific data for the organic agriculture sector ([http://ec.europa.eu/agriculture/markets-and-prices/more-reports/pdf/organic-2013\\_en.pdf](http://ec.europa.eu/agriculture/markets-and-prices/more-reports/pdf/organic-2013_en.pdf), p. 8). At the end of 2012, in Europe 320'000 farmers had cultivated organically 11.2 million hectares. This surface represents 2.3 % of the agricultural land in EU (Willer & Lernoud, 2014, p.5). The countries that have the largest organic agricultural land in Europe are: Italy, Spain and Germany (Willer and Lernoud, 2014). The distribution of organic land in Europe (figure 5) highlights that (Willer, 2011):

- ❑ Russia and Iceland have less than 1% organic land, mainly because they are located in the Northern side of the continent and the climate doesn't favour agriculture there.
- ❑ France, United Kingdom, Romania have between 1% and 5 % organic agricultural land of their total land.
- ❑ Germany, Italy, Spain, had between 5 % and 10 % certified organic land of their entire territory.
- ❑ Only seven countries on the European continent have more than 10% organically cultivated land: Liechtenstein, Austria, Sweden, Switzerland, Estonia, The Czech Republic and Latvia.



Source: FiBL, 2014

**Fig.5 Share of organic agricultural in some European countries**

Compared to 2011, the organic land in Europe increased by 0.6 millions hectares and higher increases are expected to come in the future. The European market size in organic products was of approximately 22,8 billion Euros in 2012 (Willer and Lernoud, 2014).

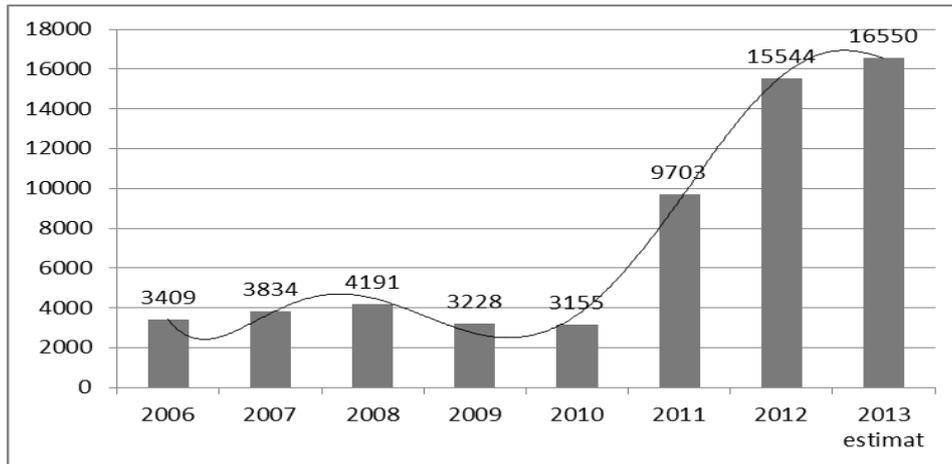
## 2.3 Organic agriculture in Romania

The purpose of organic production is to obtain products of high quality based on environmentally friendly processes that do not harm the health of humans, plants or animals. As suggested by a Romanian research study now Romania's legislation is in line with EU requirements and orientations (Voicilas, Alboiu, 2014, p. 383).

In Romania, on the certification logo, it is written „*Agricultura Ecologica*”, with the abbreviation „*AE*”. In Romania, the control and certification of organic products is ensured at the present moment by private inspection and certification bodies accredited, in conformity with the European standard *EN ISO 45011:1998*.

*Statistic data regarding the dynamics of the Romanian organic agriculture system*

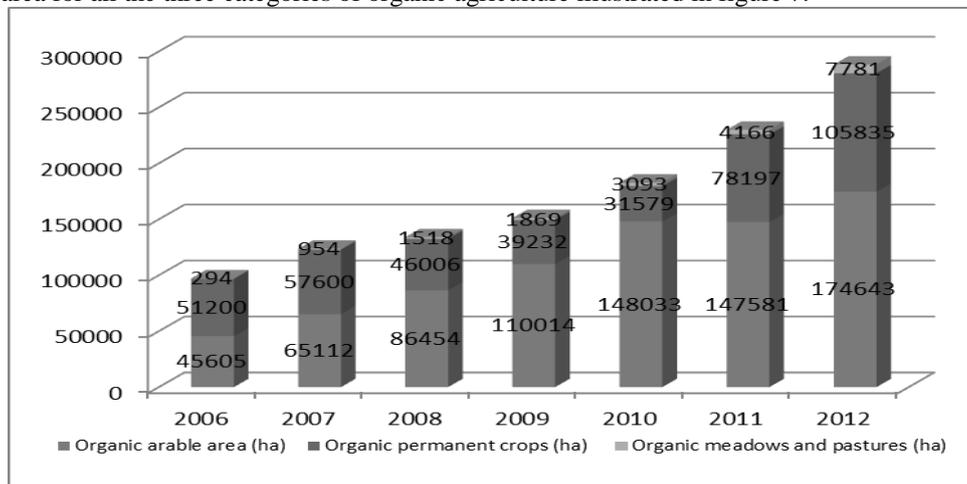
The number of certified operators in organic agriculture was of 15.544 in 2012 even there were 26.736 operators who notified their activity in the organic agriculture system at the level of county specialized institutions for agriculture. Based on the operative data communicated by the county institutions for agriculture the number of certified operators in the organic agriculture system in 2013 was of about 16.500 As illustrated in figures 6 this represents an increase of the registered organic operators by 4, 85 as compared to 2006.



Source: Operative data from MARD, 2014

**Fig.6 Dynamics of registered organic operators 2006-2013**

The increasing trend is illustrated also by the dynamics of registered organic agricultural area for all the three categories of organic agriculture illustrated in figure 7.



Source: Operative data from MARD, 2014

**Fig.7 Dynamics of registered organic agricultural area**

According to the organic farming system requirements, certified agricultural land was 97.000 hectares (0.7% of total agricultural area) in 2006 and over 288.000 ha in 2012 (2 % of total agricultural area). The main organic crops are: cereal grains, forage crops and pastures, oilseed, vegetables and fruits (cherries, sour cherries) (MARD, 2014). From 2000 to 2012, organic agricultural land area increased by 16.5 times (from 17.400 hectares to 288.259 hectares). This corresponds to an average annual growth rate of 25%.

The importance of the organic agriculture in Romania is increasing (Voicilas, Alboiu, 2008). Organic operators (farmers) were registered at MADR and classified by three broad categories of products: crop, livestock and beehive products. In Romania most organic farmers are located in a few counties: Suceava (North), Mureş and Sibiu (Centre), Tulcea and Constanţa (South-Est) (Voicilas and Alboiu, 2014, p. 387).

Organic farming is beneficial for the environment, as well as for the health of animals and the human beings. According to the above mentioned authors, in Romania the organic sector might be considered in the next period as an important niche market. The main reasons are: „*the increase of the number of operators; the association of the small organic farmers so as to co-operate in the marketing of organic products; an increase in the number of municipal and regional organizations directly involved in the implementation of the National Export Strategy in its initial stage; an increase in the number of foreign direct investment projects and investments in related activities in the rural area; an increase and diversification of the organic farm output; capacity improvement in terms of products and value added*” (Voicilas and Alboiu, 2014, p. 393-394)

#### **Conclusions and Recommendations**

The increasing awareness of the importance of product quality on human health has contributed a lot to the development of favourable opinions regarding the development of agro-ecology and organic farming practice. There is also an important trend regarding the development of markets for these products, given their specific characteristics (high prices of the products and low market share). The increasing demand for organic products has led to the development of organic farming in the last years. More and more this sector is coming on the agenda of agricultural specialists, policy makers and the society. But, the organic markets are small and quite disorganized. In many countries a large part of organic food stuffs are sold through conventional channels at conventional prices, fact that might discourages producers and organic operators.

Organic farming has an increasing importance in the agricultural sector of many countries, regardless of their stage of development. In the developed countries, organic farming has come to represent a significant part of the agricultural sector: 19,7% in Austria, 15,5% in Sweden, 12% in Switzerland. Some of the emerging countries of the European Union hold also a growing sector of organic farming: 15,3% in Estonia, 11,5% in Czech Republic, 10,8% in Latvia.

Finally, we suggest *some recommendations* for developing the organic market in Romania, such as:

- Increase the organically cultivated areas through promoting national and European supporting policies
- Promote public policies to be directed towards both the production and the consumption of organic products
- Extend the research, communication and educational programmes dedicated to the agro-ecology and organic farming practices. These would contribute to food sovereignty & safety, resulting in a better and more efficient and effective energy and resources use and conservation.

- Co-operate with delivery companies in order to provide these products all over the country
- Applying better marketing strategies for the organic products by highlighting the potential benefits of organic farming on human health and environmental protection. It will be helpful to create and develop specialized marketing departments in order to increase the awareness regarding organic products
- Develop a well designed strategy in order to expand on the external markets (export of organic goods).

## References

1. Altieri, M.A. 2014. *Small farms as a planetary ecological asset*, Organic Consumers Association, <https://www.organicconsumers.org/news/organic-and-sustainable-farmers-can-feed-world> accessed 10.10.2014
2. Altieri, M.A., Nicholls C.I. 2012. Agro-ecology Scaling Up for Food Sovereignty and Resiliency, <http://agroeco.org/socla/wp-content/uploads/2013/11/Rio20.pdf>; <http://usc-canada.org/UserFiles/File/scaling-up-agroecology.pdf>; [http://www.mtnforum.org/sites/default/files/forum\\_topic/files/lectura\\_3\\_agroecology\\_-\\_scaling\\_up\\_for\\_food\\_sovereignty\\_and\\_resiliency.pdf](http://www.mtnforum.org/sites/default/files/forum_topic/files/lectura_3_agroecology_-_scaling_up_for_food_sovereignty_and_resiliency.pdf) accessed 25-28.08.2014
3. Altieri, M.A., 2009, *Agro-ecology, small farms and Food Sovereignty*, in “monthly Review”, volume 61, issue 03, July-August 2010; <http://agroeco.org/wp-content/uploads/2010/09/Altieri-agroecoMR.pdf>.; <http://monthlyreview.org/2009/07/01/agroecology-small-farms-and-food-sovereignty/> accessed 27.03.2014
4. Badgley, C., et al. 2007, Organic agriculture and the global food supply, *Renewable Agriculture and Food Systems*: 22(2); 86–108, Research paper, Cambridge University Press, p. 86-108, <http://www.stopogm.net/sites/stopogm.net/files/Orgsupply.pdf> accessed 17.02.2014
5. Barker, D. 2011. *The Wheel of Life: Food, Climate, Human Rights, and the Economy*, Center for Food Safety, Green Political Foundation, Washington D.C, [http://www.centerforfoodsafety.org/files/thewheeloflife\\_barker\\_40796.pdf](http://www.centerforfoodsafety.org/files/thewheeloflife_barker_40796.pdf) accessed 25.08.2014
6. Barker, D. 2007. *The Rise and Predictable Fall of Globalized Industrial Agriculture*, International Forum on Globalization, <http://ifg.org/v2/wp-content/uploads/2014/05/ag-report.pdf>/, accessed 8.09.2014
7. Beauregard S., 2009. *Food Policy for People: Incorporating food sovereignty principles into State governance. Case studies of Venezuela, Mali, Ecuador, and Bolivia*, <http://www.oxy.edu/sites/default/files/assets/UEP/Comps/2009/Beauregard%20Food%20Policy%20for%20People.pdf>, accessed 16.05.2014
8. Burchi, F., & De Muro, P. (2007). *Education for rural people: a neglected key to food security*. Report Universita Degla Studi Roma Tre., <http://12.000.scripts.mit.edu/mission2014/background> accessed 12.06.2014
9. Eurostat: data on the organic sector (area, crop and animal products, operators): [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database), accessed 21.10.2014
10. Facts and figures on organic agriculture in the European Union, 2013, [http://ec.europa.eu/agriculture/markets-and-prices/more-reports/pdf/organic-2013\\_en.pdf](http://ec.europa.eu/agriculture/markets-and-prices/more-reports/pdf/organic-2013_en.pdf)/ accessed 15.09.2014
11. FAO 2002. *World Agriculture: Towards 2015/2030*. Summary Report. FAO, Rome, <http://www.fao.org/esag/docs/y4252e.pdf>, accessed 3.09.2014

12. FAO 2005. *The State of Food and Agriculture*, [ftp://ftp.fao.org/docrep/fao/008/a0050e/a0050e\\_full.pdf](ftp://ftp.fao.org/docrep/fao/008/a0050e/a0050e_full.pdf)/ accessed 14.02.2014
13. FAO 2013. SAFA (Sustainability Assessment of Food and Agriculture Systems Guidelines), [http://www.fao.org/fileadmin/templates/nr/sustainability\\_pathways/docs/SAFA\\_Guidelines\\_Final\\_122013.pdf](http://www.fao.org/fileadmin/templates/nr/sustainability_pathways/docs/SAFA_Guidelines_Final_122013.pdf)/ accessed 21.03.2014
14. FIBL 2014. Willer, H., Lernoud, J., *Organic Agriculture Worldwide: Current Statistics*, <http://www.fibl.org/fileadmin/documents/de/news/2014/willer-2014-global-data.pdf>, accessed 9.10.2014
15. Food Sovereignty 2014, in “*Grassroots International*”, 2014, <http://www.grassrootsonline.org/publications/multimedia/slideshows/food-sovereignty> accessed 10.10.2014
16. Food Sovereignty, 2014, USC Canada, <http://usc-canada.org/the-issues/food-sovereignty>, accessed 24.07.2014
17. IFAD 2008. International migration, remittances and rural development, <http://www.ifad.org/pub/remittances/migration.pdf>, accessed 8.09.2014: 22-24
18. IFAD 2013. Smallholders, food security, and the environment, [http://www.unep.org/pdf/SmallholderReport\\_WEB.pdf](http://www.unep.org/pdf/SmallholderReport_WEB.pdf), accessed 20.09.2014
19. IFOAM 2014 Global Organic Statistics 2014 and Organic 3.0, [http://www.fibl.org/fileadmin/documents/en/news/2014/mr-fibl-ifoam-organic30-BIOFACH\\_en.pdf](http://www.fibl.org/fileadmin/documents/en/news/2014/mr-fibl-ifoam-organic30-BIOFACH_en.pdf) accessed 3.10.2014
20. IFOAM 2006. Annual Reports 2005 and 2006, International Federation of Organic Agriculture Movements. Retrieved from [http://www.ifoam.org/sites/default/files/page/files/ifoam\\_annual\\_report\\_2005-2006.pdf](http://www.ifoam.org/sites/default/files/page/files/ifoam_annual_report_2005-2006.pdf) accessed 9.10.2014
21. Lappé, Frances, Moore 1971. *Diet for a Small Planet*, New York: Ballantine Book.
22. Leathers, H., & Foster, P. 2009. *The world food problem: toward ending under-nutrition in the third world*. Colorado: Lynne Rienner Publishers Inc.
23. MARD 2014. Operative data from Ministry of Agriculture and Rural Development, <http://www.madr.ro/ro/agricultura-ecologica/dinamica-operatorilor-si-a-suprafetelor-in-agricultura-ecologica.html>, accessed 22.10.2014
24. Meredith, S., Willer, H. 2014. *Organic in Europe, Prospects and Developments*, IFOAM EU Group 2014, First edition Handbook
25. Nijs, L. 2008. *The Handbook of Global Agricultural Markets. The Business and Finance of Land, Water and Soft Commodities*, Palgrave Macmillan Publisher, UK: .6-7
26. Nyeleni 2007. Declaration of the Forum for Food Sovereignty, Nyéléni, Mali, <http://www.nyeleni.org/IMG/pdf/DeclNyeleni-en.pdf>, accessed 8.09.2014
27. Sabau, Gabriela, 2014. *Agro-Ecology and Food Sovereignty. A Sustainable Convergence*, paper presented on Oxfam Food Sustainability and Security Series, MUN, Grenfell Campus, November 12, 2014
28. \*\*\* *The International Year of Family Farming (IYFF)* <http://www.agriculturesnetwork.org/what-we-do/advocacy/2014-iyff/>; <http://www.ifad.org/events/op/2014/roundtable.htm> accessed 23.08.2014
29. \*\*\* *The World Food Summit* 1996, <http://www.viacampesina.org/en/> accessed 18.10.2014
30. Voicilas, M., Alboiu C., *Applied EU Quality scheme and organic products on Romanian market*, in „*Economics of Agriculture*” no. 2/2014, p. 381-395,

- <http://ageconsearch.umn.edu/bitstream/175289/2/8%20EP%202%202014-8.pdf/>,  
[http://mpira.ub.uni-muenchen.de/53401/1/MPRA\\_paper\\_53401.pdf/](http://mpira.ub.uni-muenchen.de/53401/1/MPRA_paper_53401.pdf/) accessed  
26.10.2014
31. Voicilas, M. 2008, New challenges for Romanian agriculture-organic farming, Poster Paper presented at IAMO Forum 2008, [http://www.iamo.de/uploads/media/3a.4\\_Voicilas\\_CD.pdf/](http://www.iamo.de/uploads/media/3a.4_Voicilas_CD.pdf/) accessed 5.05.2014
  32. Willer, H. 2011. The World of Organic Agriculture: Statistics and Emerging Trends. Switzerland: FiBL and IFOAM: 123-124; <http://www.fibl.org/fileadmin/documents/en/news/2011/willer-2011-biofach-world-of-organic.pdf/> accessed 12.07.2014
  33. Willer, H., Lernoud, J., 2014. The World of Organic Agriculture. Statistics and Emerging Trends 2014. FiBL, Frick, and, IFOAM, Bonn, <https://www.fibl.org/fileadmin/documents/shop/1636-organic-world-2014.pdf/>;  
<http://www.organic-world.net/fileadmin/documents/yearbook/2014/fibl-ifoam-2014-global-data-2012.pdf>. accessed 20.09.2014