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“Agrosym 2014”**



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Foreword

The current agro-food system failed to feed the world population and to eradicate rural poverty. The environmental and social problems caused by such an agricultural production model are well known and widespread. The most dramatic environmental damage is caused by climate change, loss of biodiversity and ecosystem functions, soil erosion and degradation, and pollution from fertilizers and pesticides. Climate change, population growth and competing demands for land and resources are putting great pressure on the world's food systems. The world's population is set to reach nine billion by 2050. To feed them it is needed to produce 70% more food, and do so without destroying our environment. The successful management of agricultural resources for meeting the changing human needs, while maintaining or enhancing the quality of the environment and conserving natural resources, is imperative for a stable food production.

Agriculture is at the core of sustainable development. Ecological agriculture, agroecological practices and sustainable agricultural production are alternative farming methods to address the environmental consequences of conventional agriculture dependent on intensive chemical inputs. Sustainable agriculture is not only a technological solution but also an approach that embodies a shift in agricultural paradigms. Sustainable food systems should integrate the economic, social and environmental dimensions of sustainable development. Appropriate agricultural and rural development strategies in the Balkan area and beyond should ensure food and nutrition security - through the sustainable and eco-functional intensification of crop and animal production systems - while conserving the natural resource base. They should also contribute to the eradication of rural poverty and improvement of livelihoods and quality of life of rural populations. Innovative and responsible measures - based on sound and accurate scientific knowledge - are required to respond to the multiple food-related challenges of the New Millennium in a resource-constrained world. During four days; October 23-26, 2014; the 5th International Scientific Agricultural Symposium "AGROSYM 2014" made an important contribution to the improvement of knowledge in agriculture, environment and rural development fields. In fact, 430 contributions were presented by scientists from 56 countries (Albania, Algeria, Australia, Austria, Azerbaijan, Belarus, Belgium, Benin, Bosnia and Herzegovina, Bulgaria, Burundi, Burkina Faso, Cameroon, Croatia, Czech Republic, Egypt, Germany, Ghana, Hungary, Greece, India, Indonesia, Iran, Iraq, Italy, Japan, Kazakhstan, Latvia, Lithuania, Republic of Macedonia, Mauritania, Montenegro, Morocco, Nepal, Niger, Nigeria, Norway, Pakistan, Philippines, Poland, Portugal, Romania, Russia, Saudi Arabia, Serbia, Slovenia, South Africa, Spain, Syria, Sweden, Switzerland, Tajikistan, Thailand, The Netherland, Tunisia, Turkey, Vietnam). This publication comprises 180 accepted full papers while selected papers will be

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FACTS AND VISIONS ON THE STATUS AND THE FUTURE OF ORGANIC FARMING IN THE REPUBLIC OF MACEDONIA AND THE MEDITERRANEAN COUNTRIES

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Abstract

The idea for conducting this research and comparative analysis elaborated in this paper, popped-out from several of our conclusions related to the Organic Farming (O.F.) in Macedonia and the Mediterranean countries. After close study of the SWOT analysis performed in Macedonia and by the Mediterranean countries it is clear that there are numerous common factors, resources, structures and gaps in the organic sector. The research goal in this paper is to present in a sublimated referent document in a form of listed strategic goals and instruments for development of O.F. in Macedonia and Mediterranean countries. The following methods were used: comparative-analytical, statistical and results from surveys are presented. The beginnings and developments stages of the O.F. are described, current status, sector analysis, on-going policies and development initiatives as well. The data related to the facts and visions are referred to the Republic of Macedonia, but relevant data on EU countries, candidate-countries and south Mediterranean countries are presented as well. The conclusions are formulated in a common SWOT analysis with special accent on the new possibilities for development of O.F. in the near future, especially through applicative scientific research activities.

Keywords: *organic farming, analysis, development, data, visions.*

Introduction

As compared to the conventional, organic farming is characterized by several different specifics. Holistic and environmental approach gives this kind of farming unique production dimension, given the influence of ambient conditions which tend to differ even on microregional level. In the first decades of the 20th century, scientifically formed concepts were brought into the traditional instinctive approach to nature. Change of lifestyle laid the foundations for changes in nutrition, hygiene and physical culture. It was based not only on an attempt to adapt life to nature but also on scientific knowledge (Sharapatka et al., 2010).

The period from 1960-1970 is the one that is considered most significant for the development of standardization and control in organic farming, due to increased demand for organic food. Firstly, these kinds of activities were applied at private farmers and farmers' associations' level, but of 1972 after the establishment of the International Federation of Organic Agriculture Movements (IFOAM) in 1972 the movement became international. In the last 5-6 decades the rise or the fall in the intensity of organic production depends of various sociopolitical and socio-economic legislations. Organic farming and processing standards are being subjected to continuous improvements and amendments in accordance with the progress of the sector, knowledge and needs. Since the mid-1980's organic farming has been promoted through political initiatives. The policies of the various governments have included financial support for the conversion of conventional farms, regulation and control, an advisory service, information campaigns, education and research in organic farming (Organic

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research and development 1996-2010 – ICROFS, 2011). The 2010 Organic Industry Survey conducted by the Organic Trade Association (OTA), revealed that U.S. sales of organic products continued to grow during 2009, whereas organic food and non-food product sales in that year grew by 5.3 percent, despite the distressed state of the economy (Reine et al., 2010; OTA, 2010). The organic production methods attracted also the attention of local governments and economic operators and found space in discussion platforms and official strategies papers (Al-Bitar et al., 2010). The facts and figures about organic agriculture statistics in this area have almost doubled between 2001 and 2007 (Al-Bitar and Pugliese, 2008), and continue to increase in terms of organic agricultural land. In 2008, with more than 143 thousand operators, organic agriculture in the Mediterranean covered an area of about 5 million ha of which around 1.3 million ha of wild collection and forests, mainly concentrated in Eastern Adriatic and some South-Eastern countries (Al-Bitar et al., 2010). Many non-EU Mediterranean countries already have a national law (Tunisia, Turkey, Serbia, Croatia, Macedonia and Montenegro) and a well-developed export market (Morocco, Tunisia, Turkey and Serbia), while local markets are still emergent. After close study of the SWOT analysis performed in Macedonia and by the Mediterranean countries it is clear that there are numerous common factors, resources, structures and gaps in the organic sector. The research goal in this paper is to present in a sublimated referent document in a form of listed strategic goals and instruments for development of in Macedonia and Mediterranean countries. Much indicates that the highly applied research has had a very important part to play in the development of the sector. But rarely have research programs been analyzed and evaluated on their effect on a sector of society and this is generally thought to be quite difficult, among other things because it can be difficult to distinguish the contribution from research from those of other development forces.

Materials and methods

The data related to the conditions in the Republic of Macedonia are based upon own research activities, as well as of Ministry of Agriculture, Forestry and Water Economy of the Republic of Macedonia (MAFWE), statistical publications which are in majority of the cases published in the National plan of Organic Farming 2013-2020. The National Plan for Organic Production 2013-2020 was adopted by the Government of the Republic of Macedonia on the 178th session held on 30 December 2013. The part of the document which is related to the situation in Mediterranean countries is performed through processing data published by the Mediterranean Agronomic Institute of Bari – Italy. Relevant facts and data from scientific research activities and possibilities of their applicative purpose, which are presented in this paper were taken from the publication of the International Centre for Research in Organic Food Systems (ICROFS). Using comparative and analytical methods, own and other researchers' interview results, strategic goals for organic farming are emphasized for Macedonia and Mediterranean countries.

Results and discussions

In 2007 the Government of the Republic of Macedonia had adopted the National Strategy for Agriculture and Rural Development in which a strategic goal is defined for development of agriculture and the rural sector for the period 2007-2013, and which states: “to strengthen the agriculture in order to become competitive on integrated regional markets of EU and SE Europe through: Improved efficiency of agricultural production, processing and marketing; To establish relevant public and private institutions; To improve farm efficiency; To ensure consumers have access to safe and healthy food;

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To optimize the use of limited resources such as: soil, water and forest; To establish vital rural communities through sustainable rural development.” The National Plan for Organic Production 2013-2020 relates to the following parts of organic production:

1. Production: a. plant production; b. animal production; 2. Processing; 3. Trade; 4. Research, education and science; 5. Policy, legislation and control; 6. Input materials. Based on performed SWOT analysis on different subsectors in agriculture, analysis of the conditions in O.A. is performed and strategic goals are set, as well as specific policy goals and activities that are to be implemented during this time frame. In the Action plan for organic farming several activities are set, such as: area of intervention, activities, approach and time frame for task completion. The development of organic farming records steady growth. More and more subjects are joining thus contributing to the expansion of production facilities. In the past few years a growth trend is recorded since many operators are joining and processing facilities are expanding as presented in table no.1 and figure no.1, (source:www.mzsv.gov.mk).

Table no.1 - Certified area under organic in Republic of Macedonia 2006-2013

year	Total certified area under organic (ha)	% of the total arable agricultural land
2006	509,42	0,099
2007	714,47	0,139
2008	1029,00	0,200
2009	1373,83	0,268
2010	5228,00	1,019
2011	6580,92	1,283
2012	4663,08	0,908
2013	3168,00	0,617

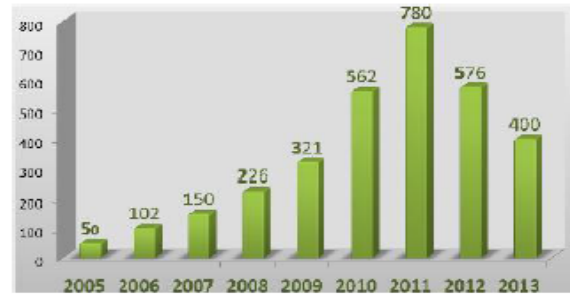


Figure no.1 – Number of operators 2005 – 2013 in Republic of Macedonia.

Driven by the increased number of operators and processing facilities in the past few years, the governmental support increased the level of subsidy in this sector as presented in figure no. 2, (source:www.mzsv.gov.mk)



Figure no. 2. Level of financial support in organic farming, 2007-2013/euro

Although data point to intensive growth of organic farming in Macedonia, still there are number of bottleneck points that present themselves as serious burden for the development of organic farming. One of the most significant is poor input presence on the market: quality seed and plant protection pesticides allowed for use in organic farming. The next weak point is insufficient and irregular campaign on beneficial effect of organic food on human health. Poor education and low level of organic farmers’ organization are another weak point on the road for local and national development of organic farming. IPARD funds are unused as well, especially on the measures meant for processors and storage facilities, specialized and certified enterprises for processing and packaging.

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Very little number of tourist facilities are offering organic menu. Furthermore, underdeveloped sector of rural tourism makes its contribution to the slow development of organic farming too. The status of education and science in Macedonia related to the organic sector are illustrated through the SWOT analysis presented below:

SWOT analysis on condition of education and science over the development of organic farming in the Republic of Macedonia:

Strengths

- Existence of several high schools and higher education facilities which have organic farming as a topic in their curricula;
- Since 2004, existence of governmental programme for development of education according to the principles of life-long learning;
- The Faculty of Agriculture at Goce Delchev University in Shtip and the Faculty of Agricultural Sciences and Food in Skopje have Centers of applied research and continuous education in the sector of organic farming;
- The Department of Plant Production of the Faculty of Agriculture at Goce Delchev University in Shtip there is an accredited module of MSc course in organic farming;
- Agricultural high schools have available land, mechanization and trained personnel to conduct organic farming and applied field research activities;
- There are experts and facilities with proper infrastructure to conduct research in organic farming;
- MAFWE had published guides/brochures in organic farming on dozen most significant crops.
- Several projects in organic farming are implemented or are under implementation;

Opportunities

Incorporation of new modules in organic farming and rural development for gaining social and economic benefit; Appliance of new know-how in bio-technology, IT and digital communication;

- Continuous education of experts in organic farming and environment protection for obtaining positive approach in organic farming and rural development;
- Possibilities to apply for domestic and foreign calls for projects related to organic farming;
- Improved level of use of universities capacities for farmer training; Popularization of NGO's in organic sector; Establishment of training and research centers i.e. transfer of know-how for promotion of organic producers;
- Conducting new courses for farmers which would give them skill to apply on EU preaccession funds;
- Preparation of programs for licensing advisors which would give support in organic sector.

Weaknesses

- Insufficient content of education with volume of organic farming in the teaching process on high school level;
- Inappropriately set educational standards compatible with those of EU countries and inadequate design of study programs;
- Insufficient exchange of information with the education institutions from other countries;
- Poor implementation level of non-formal education by Workers' universities, employment agencies etc. in each of the neighboring countries;

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- Low level of applicative projects and scientific research activities on certified farm level, processing facilities and accredited laboratories;
- Lack of data on eco condition, agro-eco issues (soil, water, biodiversity) on arable land on regional and national level;
- Lack of education materials in organic farming and insufficient exchange of information the region ;
- Insufficient use of scientific potential in the country due to irregular and insufficient funding of research projects;
- The majority of farmers have no or very small knowledge of practice in agro-ecology and organic farming principles.

Threats

- Reduced interest for professions linked to agriculture;
- Falling behind in applying new methods and technologies in organic farming;
- Young professionals leaving the country;
- Lack of current and long-term analysis of the climate changes over agricultural production;
- Lack of research in contemporary technologies in organic farming for agro - ecological conditions in Macedonia;
- Ineffective and low-quality partnership and knowledge transfer of technologies between higher education institutions and the economy;
- Limited effect by advisor's service with limited service range, use of under developed methods and cover of limited target groups.

Organic farming research outside Macedonia

This kind of surveys is mainly concentrated in Europe that is considered the cradle of organic research by Wilier (2009). However, in the last few years studies and experiments on organic farming and practices started emerging in other parts of the world involving several actors. Some of them are the Organic Centre of Canada (OACC), the Brazilian Agriculture Research Corporation (EMBRAPA) and the Rodale Institute in the US. Other research activities related to organic farming are mainly carried out by universities. All these initiatives have a common objective which is the collaboration for the promotion and enhancement of organic research worldwide (Reine et al. 2010). To date the EU contribution to the development of research in organic agriculture has included the funding of around 70 research projects that refer directly (explicit reference in the title) or indirectly (mentioned as part of the topic) to organic agriculture (Zanoli, 2009). The first contribution of EU to organic agriculture research dates back to the 2nd Framework Programme - FP2 (1987-1993), where in organic agriculture was mentioned as part of the extensification and diversification of agricultural production. At present, only three research projects entirely concern organic agriculture in FP7 (2007-2013), probably due to the overall limited research funding (Zanoli, 2009). Across the Mediterranean the transfer and dissemination of organic agriculture research results is carried out by means of two main tools: publications and training courses. Internet websites appear to be an important tool for results sharing, diffusion in EU but not in CPC (Candidates and Potential candidates Countries) and SEM (South and East Mediterranean) countries, where more probably farmers and other actors of the agricultural sector still do not have easy access to the computer technology (Reine et al. 2010). According to the opinions of many researchers the main research priorities for organic research in the Mediterranean

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need to be:

- In Macedonia and other CPS country : Pest management/Plant protection, Soil fertility management, Agroecology and biodiversity, Market study and promotion.
 - In SEM countries: Plant protection/Biological control, Soil fertility management, Postharvest and food processing, quality control and inspection system.
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- In EU Mediterranean countries: Plant and animal genetic resources, Cropping systems, Market study and promotion, Improving knowledge and technologies.

Conclusion

According to the results of the current situations and researches in Macedonia and Mediterranean countries, the new opportunities in the near future for development of O.F. especially through applicative scientific research, are in key strengths that are identified by the following real facts and conditions:

- The high qualification of human resources involved in research in organic issues; The existing infrastructures (laboratories and experimental farms) available for research in organic agriculture in Macedonia and Mediterranean countries;

- An adequate transfer of the research results mainly through publications and workshops;
As most influential weaknesses we emphasize:

- The small number of centers fully specialized in organic research;
- Lack of long-term experiment on organic agriculture in Macedonia and Mediterranean countries. For further work to support organic research in the Mediterranean region it would be useful to:

- continue monitoring the evolutionary trends of organic research in the Mediterranean in order to base future support initiatives on a comprehensive and updated picture of the situation;
- identify the practical problems of the sector and try to find out how research may contribute to their solution;
- participate to regional Mediterranean and International projects trying to convey and consolidate common interests;
- establish relations and partnership and develop networking at Mediterranean and International level for a better exchange of information and sharing of experience.

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