

ORGANIC PRODUCTION IN GREECE – CHALLENGES AND LESSONS LEARNED

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Abstract

Organic production has gradually entered the lives of Greek farmers and citizens during the last few years and quickly proved to be a very realistic and lucrative alternative, having tremendous appeal. Even though initial reticence was quickly succeeded by enthusiasm, recently there has been a noticeable lack of interest among farmers regarding biological agriculture.

Organic production adopts a production system reflecting health of soil, ecosystems and people proposing an overall attitude of farm management and food production that combines best environmental practices, a high level of biodiversity, conservation of natural resources, application of high standards on animal welfare and production in line with the preference of certain consumers for products produced using natural substances and processes.

In this paper we will try to present the concerns grown regarding the utilization of organic production in Greece. This study is based on research of written documents, the use of historical method and other research methods. The findings of the study are particularly important and any

utilization will contribute substantially to the study of further development of biological agriculture in our country.

Keywords: Biological Agriculture, Biogas, Biological Products, Agricultural Ecosystems

Introduction

Organic production has gradually entered the lives of Greek farmers and citizens during the last few years and quickly proved to be a very realistic and lucrative alternative, having tremendous appeal. Even though initial reticence was quickly succeeded by enthusiasm, recently there has been a noticeable lack of interest among farmers regarding biological agriculture.

Organic production according to the International Federation of Movements for Organic Agriculture (IFOAM) adopts a production system that reflects health of soils, ecosystems and people. It is a production system that relies on ecological processes, biodiversity and natural cycles adapted to local conditions, in contrast to the use of inputs and negative effects (Aertsens et al, 2009, Brčić-Stipčević et al, 2011). Organic farming emerged as the answer to intensive agriculture and the negative ecological, social and economic consequences (Brčić-Stipčević et al, 2011).

Organic production is an overall system of farm management and food production that combines best environmental practices, a high level of biodiversity, conservation of natural resources, application of high standards on animal welfare and production in line with the preference of certain consumers' products produced using natural substances and processes (<http://eur-lex.europa.eu>). In particular, it is considered a production system that relies on crop rotation, recycling of crop residues and animal manure, green manure, rational use of agricultural machinery and biological ways of dealing with pests and plant pests (Tseles et al, 2011).

These methods are ideally combined for preserving and increasing long-term soil fertility, control of diseases and pests minimizing the use of chemical pesticides to prevent environmental pollution and the rational use of natural resources. Also, ensure reduced energy consumption, improved living conditions to produce food of high nutritional value and in sufficient quantity and conservation of genetic diversity in agricultural ecosystems, including the protection of plants and wildlife (Tseles et al, 2011) .

The control and certification of organic agriculture in Greece

Organic production started getting the appropriate attention in our country around 1992 and flourished since 1995 when the implementation of

the financial assistance program was initiated under Regulation 2078/1992 and subsequent of Regulation 1257/1999 (Papatheodorou et al, 2007).

Organic production in Greece is tested and certified by private bodies approved by the Ministry of Agriculture, to test and certify organic products under Regulation (EC) No 834/2007 and the Regulation No 889/2008. Moreover entities get the appropriate accreditation by the National Accreditation System (E.SY.D.) according to ELOT EN 45011:1998 "General requirements for certification bodies operating product certification systems" (Georgopoulos, 2012) and are supervised by the Greek Agricultural Organization "DEMETRA".

Authorised Inspection and Certification entities regarding Organic Products in Greece are so far as follows:

- DEO with approval code: GR-BIO-01.
- PHYSIOLOGIKI EΠΕ, with approval code: GR-BIO-02.
- BIOHELLAS, with approval code: GR-BIO-03.
- ROUTES OF QUALITY A.E.–QWAYS, with approval code: GR-BIO-04.
- A CERT A.E., with approval code: GR-BIO-05.
- IRIS E.E., with approval code: GR-BIO-06.
- GREEN CONTROL O.E., with approval code: GRBIO-07.
- GEOTECHNICAL LAB A.E., with approval code: GR-BIO-08.
- GMCERT O.E., with approval code: GR-BIO-10.
- Q-CERT EΠΕ , with approval code: GR-BIO-12.
- TUV HELLAS A.E., with approval code: GR-BIO-13.
- OXYGENE Cert O.E, with approval code: GR-BIO-14 (www.minagric.gr)
- EUROCERT, with approval code: GR-BIO-17
- COSMOCERT, with approval code: GR-BIO-18

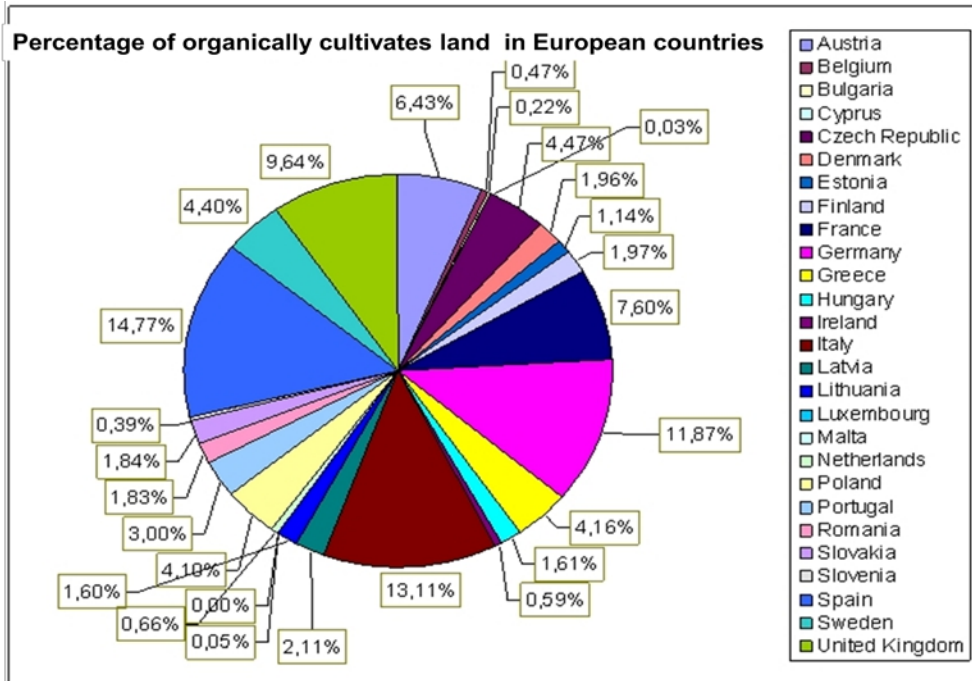
All these entities have control jurisdiction throughout the country, giving farmers the chance of selection. According to the regulation each Inspection and Certification Organization should make an annual site inspection in each unit integrating organic farming. Additional inspections are made depending on the type of crop, for example in vegetables there are successive crops. Sampling is performed at a rate of 5% of the approved quantities for further laboratory testing and unannounced inspection visits are carried out in addition to full control at more than 10% of the integrated units of each Inspection and Certification Organization.

The inspection system does not include any economic factors. In general, prices of organic products are increased about 25-30% compared to those of conventional products. In Greece the control and conversion period starts by signing the corresponding contract with the testing and certifying

body. Notice of entry to the competent department of Rural Development follows. Afterwards the field is inspected in terms fertility, ways of maintaining and increasing it, as well as storage facilities and how crops will be organically protected from pests and diseases (Tseles et al, 2011).

The evolution of the biological agriculture in Greece

Organic production is developing a momentum at all over Greece as well as at European level. According to IFOAM (International Federation of Organic Agriculture Movements) and FiBL (Research Institute of Organic Agriculture) data during 2008 there was a global increase of organic production area that reached 35,243,365 hectares which represented 4.16% of the total cultivated area in the country, while the number of organic farmers was 1.381.154.²



The statistics obtained demonstrate the increasing trend of cultivated land under organic production at European level, which is attributed to the following tables and graphs. The increase is visible at the level of organic producers.

Statistics regarding organic farming in Greece

²In European level useful informations are given from thewebsite [organic-world.net](http://www.organic-world.net) and more specifically from the website <http://www.organic-world.net/fileadmin/documents/statistics/data-tables/regions-statistics/europe-statistics/europe-development.xls>.

Pazarakiotis (2011) reported the data regarding the state and development of organic farming in Greece, Europe and the rest of the world. The data were derived from the raw data of the Ministry of Rural Development and Food (Directorate of Organic Agriculture), the National Statistical Service (NSS), Eurostat and the International Organizations of Organic Agriculture (IFOAM, FIBL and others).

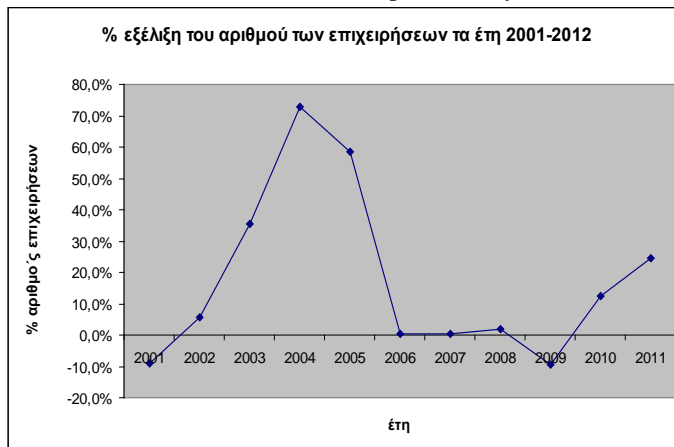
All these data were derived from the hanging data of the Ministry of Rural Development and Food (www.minagric.gr), resulted from the data which are annually require to provide the DMO Audit and Certification Organization, until the 31st of December of each year.

Table 1 : Number of BIO-Companies & areas (*cultivated and meadow*) the period 2001-2012

YEAR	NUMBER OF COMPANIES	% EVOLUTION	CULTIVATED AREAS (<i>in acres</i>)	% EVOLUTION	MEADOW (<i>in acres</i>)	% EVOLUTION	ΣΥΝΟΛΟ AREAS (<i>in acres</i>)	% EVOLUTION
2001	6933		311.180					
2002	6299	-9,1%	295.051	-5,5%	476.151		771.202	
2003	6642	5,5%	389.951	32,2%	2.054.614	331,0%	2.444.565	217%
2004	9002	35,5%	706.250	81,1%	1.962.340	-4,5%	2.671.590	9,40%
2005	15556	72,8%	1.035.600	46,6%	1.845.025	-6,0%	2.880.625	7,80%
2006	24666	58,6%	1.701.865	64,3%	1.320.695	-28,4%	3.022.560	5%
2007	24729	0,3%	1.521.175	-10,6%	1.277.771	-3,2%	2.798.946	-7,40%
2008	24860	0,5%	1.521.175	0,0%	1.277.771	0,0%	2.798.946	0%
2009	25284	1,7%	1.706.318	12,2%	1.556.254	21,8%	3.262.522	16,60%
2010	22860	-9,6%	1.576.064	-7,6%	1.522.151	-2,2%	3.098.215	-5%
2011	20053	12,3%	1.213.050	-23,0%	919.712	-39,6%	2.132.763	-31,2%
2012	24984	24,6%	995.534	-17,9%	2.775.386	201,7%	4.626.178	116,90%

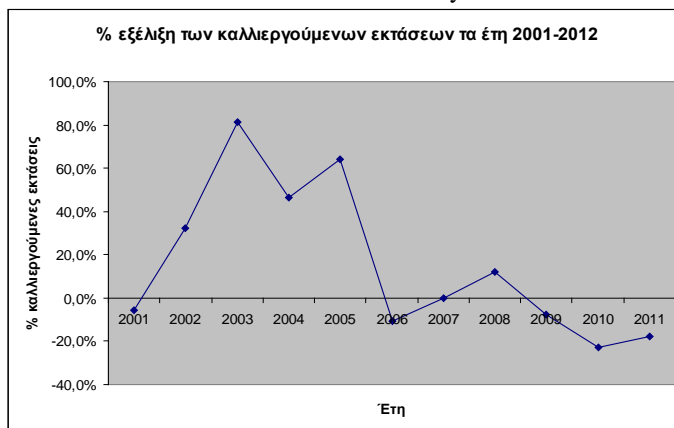
Source : Pazarakiotis, 2011.

Diagram 1 : The evolution of the number of companies the years 2001-2012 in greece (%)



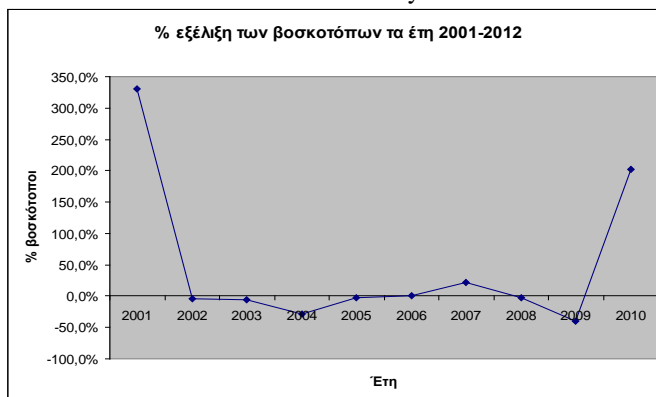
Source : Pazarakiotis, 2011

Diagram 2 : The evolution of cultivated areas the years 2001-2012 in Greece (%)



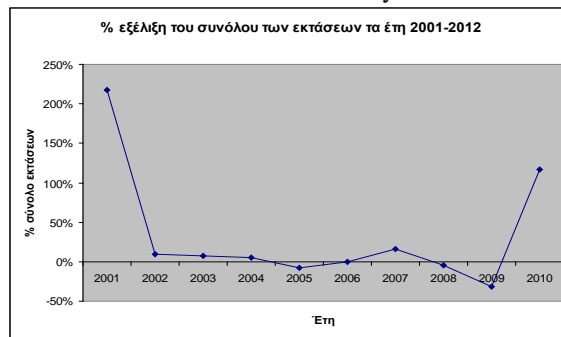
Source : Pazarakiotis, 2011

Diagram 3 : The evolution of meadows the years 2001-2012 in Greece (%)



Source : Pazarakiotis, 2011.

Diagram 4 : The evolution of the total areas the years 2001-2012 in Greece (%)



Source: Pazarakiotis, 2011

Results

During 2012 in Greece, there were 24984 operating manufacturing and marketing businesses related to organic production, while there were 4,626,178 acres (croplands, pastures, fallow land), of land either in transition or in full biological stage (Table 1). Compared to 2011, the number of organic operators was increased while there was also a significant increase of organically cultivated land.

More specifically there were 23.429 “producers” of organic products (usually farmers following organic agriculture methods), 1.551 processing industries of organic products και 4 importers. Compared to 2011, producers increased by 4.977, processing industries by 46 while importers were reduced by 2. (Table 2).

Table 2 : Integrated business in the status of Rules 834/07

	End of 2011	End of 2012
Producers	18.452	23.429
Processors	1.505	1.551
Importers	6	4

Source : Pazarakiotis, 2011.

Table 3 : Number of BIO-processors by type of activity in the period 2002-2012

Type of activity	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Meat Processing	18	32	35	65	40	58	72	96	56	46	35
Processing and preserving fish, shellfish and molluscs									2	7	6
Processing-standardization vegetables	275	165	115	195	182	239	316	555	300	278	280
Manufacture of vegetable, animal fats and oils	130	227	233	380	502	431	802	897	759	721	815
Manufacture of dairy products	20	28	25	43	45	56	76	106	72	51	51
Manufacture of milling, starches and starch products	20	26	23	26	30	31	31	92	51	41	54
Feed Manufacture	16	21	15	47	43	44	58	48	36	33	26
Manufacture of bakery and confectionery, condiments, pasta, sugar, honey, coffee and other	96	150	119	217	307	323	468	700	377	279	278
Manufacture of drinks	120	124	125	154	169	168	214	311	404	233	209
TOTAL	695	773	690	1127	1318	1350	2037	2494	2057	1689	1754

Source : Pazarakiotis, 2011

Table 3 contains data of the number of processors by type of activity during 2002-2012. From 2002 to 2009 there is a significant increase in the number of organic food processing industries, while from 2010 there is a slight decrease of their absolute number. In 2010 was the year in which fish, shell and mollusk processing and conservation industry emerged, counting two firms in 2010, seven in 2011 and six in 2012 (market balance has almost been achieved). The total area of organic farming (2012) in Greece (croplands and pasture) was 4,626,178 acres.

Organic farming and the corresponding percentage of total organic farming in Greece (4,626,178 acres), in descending order are:

- The dominant organic cultivation in Greece remains the cultivation of olive (627,023.5 acres), counting 13.55% of the total organic production.

- Cereals (wheat, barley, oats, maize and others): 515,443.5 acres and 11.14% of the total organic production.

- The grass plants (annuals, perennials, pasture): 368,592.5 acres and 7.97%.

- The vineyard: 49,971.30 acres and 1.08%.

- The fruit plants: 37,262.3 acres and 0.81%

- Citrus: 19,087.30 acres and 0.62%.

- Herbs, aromatic and medicinal plants in the category of industrial plants: 21,408.30 acres and 0.46%.

- Oilfruits category industrial crops (sunflower, soybean, canola, flax and other): 19.478 acres and 0.42%.

- Other industrial plants: 299.5 acres and 0.006%.

- Fibre crops (cotton) in the category of industrial plants: 20,458.30 acres and 0.004%.

- Pulses: 7,385.5 acres and 0.002%.

- Root crops (eg potatoes, sugar beet and other): 8,321.8 acres and 0.002%.

- Tobacco category in industrial plants: 95.8 acres and percentage 0.00002%.

Conclusion

During the last few years Greece has developed a very dynamic internal market for organic products, despite the initial export orientation. Currently, within the Greek territory, organic products are available in more than 70 open-air markets, in supermarkets and in hundreds of shops, either specialized or not on organic products.

Proposals for the expansion of organic production could include the financial support for organic farmers, both during the transition period and the subsequent development of the organization. Moreover further

organization and standardization of high level regarding inspection / control / testing and certification of organic products. Also the integration process of organic farmers in organic agriculture/livestock breeding and certification system could be simplified. Additionally the organization of the marketing and distribution of organic products and market control regarding domestic and European demand for organic products could be further organized regarding the provision of information in terms of quantities that can be absorbed by either domestic or international markets (www.oikopress.gr).

Other recommendations could include:

- information channels on organic production,
- sensitizing kids through school on the benefits of organic agriculture,
- upgrade of organic farming agronomic education, both at undergraduate and postgraduate level
- setting up an informational repository on the progress, achievements and experiences from the exercise of organic production (www.oikopress.gr).
- funding research programs to explore all possible alternatives for the implementation of organic production in primary culture of our country.
- Strengthening the infrastructure and the establishment of new research institutes and stations serving the agricultural sector.

Organic production consists a profitable economic sector that is also environmental friendly. The European orientation on highly valuable nutrition products and high quality standards regarding agricultural products supported by an increased environmental sensitivity indicates a continuous increase on demand for organic products.

However the boom of organic production in Greece happened only when there was a corresponding subsidy (financial assistance) program and interest declined when these programs ended. This could also be clarified by more recent data (2013-2014 – not available yet) that reflect a similar increase mainly driven by the 2012 subsidy program.

However there are a few challenges that have to be taken into consideration. It is very difficult to calculate total values of organic products produced in Greece. That is mainly because large quantities of organic products are sold as conventional particularly grain and mash that consist the largest fraction of organically cultivated land. This phenomenon is due to the subsidy given to farmers (300-600 euros / acre) to cultivate and the lack of the corresponding commercial channels to sell the produced goods at adequate prices. Something similar applies to organic livestock (20-50 euros/animal).

For the exact calculation of quantities regarding organic products, data are required to be taken from farmers / exporters / resellers / open markets' sellers. An intergraded and complete database is needed to record and store quantities and other financial / technical data.

Processing industry of either agricultural or animal products is yet not that developed in order to absorb the domestic production and produce valuable packaged products that could cover either domestic or European market. This could improve by including processing industries or other forms of vertical production structures to subsidy programs. Such industries could afterwards boost demand for organic products and further motivate farmers/producers.

Consumer information about organic products and the general awareness on environmental protection issues (www.oikopress.gr) could further enhance the establishment of this organic culture. Hopefully, through the general European guidance for production of agricultural products of high quality, media-friendly environment, there will be a steady progress on both farmers and consumers (http://www.organic-europe.net/country_reports/greece/default.asp).

Finally organic agriculture as biofuels (Gkamplias et al, 2012) is an economic activity, with positive consequences for the environment. Organic farmers receive and should receive incentives for this type of production. However, there is great potential for improvement by extending aid to all crops or revision of the eligibility criteria for access to aid (Gkouliaditi, 2011).

To conclude with, while in Greece there is a significant development of the specified sector, the requirements for the exploitation of the competitive advantage benefits have not matured yet, that could lead to a possible economy of scale.

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