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European Union – Basic development trends in organic farming

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The processed paper is focused on the analysis of basic development trends in the European Union's organic farming during the period 2005 – 2011. The main paper's ambition is the identification of basic trends in the following areas: the organic land development, the number of organic farms and the value of organic market development. Paper is also identifying the existing differences among individual EU countries in area of organic farming development. The specific part of the paper is also devoted to the relationship existing between organic farming development and agricultural subsidies/supports in individual EU countries. On the basis of results coming from the analysis it is possible to say that during the analyzed time period organic farming and organic products' market recorded the significant growth in the EU. The size of organic farmland increased significantly and also the number of producers increased. The significant organic farming growth was recorded in majority of analyzed countries. In this case it should be emphasized that high growth of organic farming size was recorded especially in the new EU countries. In general it is evident that organic farming represents a specific market niche in the European agricultural market. Its development is connected especially with the new consumption trends and also with the growth of individual countries' economy and especially with the growth of income per capita in individual countries. The growth of organic farming is stimulated especially by the demand side of economy than by government subsidies. The conducted analysis proved much higher correlation and elasticity of organic farming sector on changes in economy than it is in the case of government expenditures.

Key words: Organic farming, European Union, development, trend, GDP/cap, government expenditures, correlation, elasticity, characteristics, differences

Introduction

Organic farming is a form of agriculture that relies on techniques such as crop rotation, green manure, compost and biological pest control. Organic farming uses fertilizers and pesticides but

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excludes or strictly limits the use of manufactured (synthetic) fertilizers, pesticides, plant growth regulators such as hormones, livestock antibiotics, food additives, genetically modified organisms human (European commission, 2013) sewage sludge, and nanomaterials (Paull, 2011). According to International Federation of Organic Agriculture Movements - "Organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved..." (Paull, 2010; IFOAM, 2008). Since 1990, the global market for organic products has been significantly growing and in 2011 its value reached almost $60 billion. This demand has driven a similar increase in organically managed farmland which has grown over the years 2001-2011 at a compounding rate of 8.9% per annum (Paull, 2011). As of 2011, approximately 37 mil. hectares worldwide were farmed organically, representing approximately 0.9 percent of total world farmland (2009) (Willer, Kilcher, 2011). Talking about distribution of organic agricultural land by region we can see that the leader is Oceania – especially Australia. In this region we can find about 12.2 mil. hectares of organic farmland. In other regions we can find the following areas: Europe 10.6 mil. hectares, Latin America 6.9 mil. hectares, Asia 3.7 mil. hectares, North America 2.8 mil. hectares and Africa 1.1 mil. hectares. In relation to Europe it should be emphasized that the share of European Union in total European organic land area is over 93% (cc 9.5 mil. hectares) (IFOAM, 2012). The markets for organic products are strongest in North America and Europe – especially European Union. North America participates in global organic food market by 49% and the share of Europe is about 47%. European Union's share in global organic food market is about 41%. This means that European Union represents one of the most important players on global organic food market. European Union has more than one quarter of the world's organic agricultural land and it is possible to expect that the growth of organic agricultural land areas will be much higher in the future especially because of EU's agricultural policy (Willer, Lernoud, 2013). During the last two decades the European Union changed the priorities of its Common agricultural policy (CAP) and in nowadays the CAP is focused especially on multifunctional agriculture (Svatoš, 2008). The important part of this concept is also environmental protection (Boháčková, Hrabánkován, 2011). A part of this idea is also the support of organic farming development. European agriculture and especially its organic part are heavily subsidized not only by individual EU members, but also through the EU budget. The result of increasing value of payments supporting organic farming is the constantly increasing share of organic farming in total EU's agriculture and also constantly increasing share of organic farming in EU's agricultural market. The conducted paper is analyzing basic development trends in EU's organic farming during the period 2005 – 2011. The aim of the paper is identify the basic development trends in the following areas: the organic land development, the number of organic farms and the value of organic market development. Paper is also identifying the existing differences among individual EU countries in area of organic farming development. The specific part of the paper

is devoted to the relationship existing between organic farming development on one side and agricultural subsidies and GDP value development in individual EU countries.

Methodology

The paper is analyzing the period since 2005 – 2011. The analysis is based on data provided by EUROSTAT, IFOAM and FAOSTAT. The analysed variables are the following: the organic land for agricultural purposes development (IFOAM), the number of organic farms development (IFOAM and EUROSTAT), the value of organic food market development (IFOAM), the value of organic products consumption per capita (EUROSTAT, IFOAM). The paper is analyzing organic market development in the European Union. For the purpose of this paper the EU is represented by 27 following countries: Austria, Belgium, Bulgaria, the Czech Republic, Cyprus, Denmark, Estonia, France, Finland, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom. Individual time series are analyzed through basic index, chain index, geomean, correlation analysis and elasticity analysis (Hindls et al., 2007). The correlation analysis provides basic information about the relationship existing between government expenditures (EUROSTAT) and GDP/cap (EUROSTAT) on one side and selected above mentioned variables representing organic market development on the other hand. The elasticity of individual countries organic agriculture in relation to government expenditures and GDP/cap is analyzed through the logarithmical regression. Government expenditures in agriculture are analyzed in relation to organic market development especially because they are supposed to be one of main stimuli influencing organic farming development. The main idea is to identify if there is existing direct relation between the value of government expenditures and organic farming development. GDP/cap development is analyzed in relation to organic market characteristics especially because of organic market is very dependant on the level of economy development and also it is dependant on the income and living standards of population.

Analysis and discussion

The European Union is a large consumer and producer of organic products. Organic farming accounts for 5.4% of farmland within the EU. The organic farms' area is constantly growing. While in 2005 the size of organic agricultural area was 6.24 mil. hectares in 2011 it was more than 9.5 mil. hectares. The number of producers increased during the same period from 163510 to 236042. The share of organic farmland in total agricultural area in the EU increased from 3.5% to 5.4% (for details see Table 1). Specific figure characterizing organic farming development in the EU is the value of organic market development. While in 2005 the value of organic market in the EU was about 11.8 bill. EUR in 2011 it was already 19.7 bill. EUR. The value of realized organic products sales per capita increased from 23.6 EUR to about 39.4 EUR (for details see Table 2). Talking about organic farming development, it is necessary to emphasize that the significant differences in organic farming development exist among

individual EU members. The highest shares of organic farmland in total agricultural area are in Austria, Estonia, Sweden, the Czech Republic, Finland, Italy and Slovakia – the share of organic farm area is between 8% – 20%. On the other hand the lowest share - less than 3% - can be found in Hungary, Luxemburg, the Netherlands, Romania, Ireland, Bulgaria and Malta. Talking about individual countries' share in total EU organic farmland – the following countries are controlling the majority of registered areas: Spain (17.05%), Italy (11.63%), Germany (10.67%), France (10.25%), UK (6.71%), Poland (6.40%), Austria (5.7%), Sweden (5.05%), the Czech Republic (4.84%) and Greece (3.26%). The mentioned countries' share in total organic farmland is 81.46%.

If we are analyzing the growth rate of organic farming development in individual countries, we can see that during the analyzed period the size of organic farmland increased by 53% and the number of producers making business in organic farming increased by 44%. The most progressive trend in organic farming development was recorded in the following countries: Bulgaria, Poland, Spain, Belgium, Romania, Lithuania, Sweden, Estonia, Slovakia, France, the Czech Republic, Latvia, Malta and Ireland. In this case it should be emphasized that especially in Bulgaria, Poland, Spain, Belgium, Romania, Lithuania, Sweden and Estonia the size of organic farmland more than doubled during the analyzed time period. The growth of farming area was accompanied by the significant growth of producers. In general all analyzed countries recorded the significant growth of organic farming area (except for the Netherland, Hungary and Portugal) and number of producers active in organic farming (except for Finland, Italy, Hungary and Denmark).

Quite specific characteristic of organic farming development in the EU is the value of organic market. The value of organic farming products sold on EU market increased during the analyzed time period by 67%. The inter-annual growth rate of realized sales reached almost 9%. The most developed markets for organic products we can find (in brackets you can see the share of country in total EU organic products' market in 2011) especially in Germany (33.48%), France (19.08%), United Kingdom (9.56%), Italy (8.74%), Austria (5.41%), Spain (4.9%), Denmark (4.58%), Sweden (4.50%), the Netherlands (3.87%) and Belgium (2.21%). The cumulative share of above mentioned countries in European organic products' market is over 96%. Analyzing organic products' market development, it is also necessary to mention that among individual countries huge differences are existing in relation to per capita sales – for details see Table 2. While in Denmark total spending for organic products is about 162 EUR/cap a year in Slovakia it is only 0.74 EUR/cap a year. On the base of the analysis it is possible to say that organic products' market is fast developing and the shares of main players are more or less stable – if we are talking about the main players – only the United Kingdom was significantly reduced its share in organic market during the analyzed period. The results of per capita consumption value development are providing quite interesting findings about the willingness of European consumers to spend money for organic products. In general it is possible to say that many consumers in all analyzed countries are spending for organic products only limited amount of their incomes. But there is a positive trend in per capita consumption

development. Except for Slovakia, Cyprus and United Kingdom all countries recorded the growth of individual consumers spending for organic products. Organic farming and organic market development are heavily influenced by economy development and agricultural policy of European Union. During the monitored time period the economy of individual European countries recorded the significant growth and that growth was also transformed into agricultural policy development and also income per capita increased significantly. The value of government expenditures for agricultural activities in the EU reached over 42 bill. EUR a year and GDP/cap in EU reached more than 25 ths. EUR (for details about government expenditures and GDP/cap value – see Table 3). Except for usual subsidies connected with agricultural sector development in the EU, organic farming is the object of specific subsidies supporting only its own development. In 2011 the value of organic farming subsidies provided by the EU governments represented more than 1.5 bill. EUR. Nevertheless it is necessary to emphasize the existence of significant differences among individual countries in organic farming financing – for details see Figure 1. While in Cyprus subsidies for one hectare of organic farmland reached more than 300 EUR, in the Netherlands it was only about 15 EUR. Organic farming has a different priority in individual countries. In many countries it is the natural part of their agricultural sector, in some countries it is something completely new. Organic farming can be considered as the new segment of agricultural sector especially in the new EU members.

If we are analyzing organic farming development within the EU it must be emphasized that organic farming and organic products' market are influenced by government subsidies and GDP development. It is also evident that the influence of changes in GDP value and government subsidies has different influence on organic agriculture and market development in individual analyzed countries. In the case of some countries the significant correlation and high level of elasticity between organic farming development on one side and government expenditures and GDP value development exist and in some countries the level of mutual correlation and elasticity is limited – for details see Table 4).

On the base of conducted analysis it is possible to see that the government expenditures are not representing the main stimuli for organic farming growth in majority of EU countries. Government expenditures represent important stimuli for organic farming development especially in the new EU members. Government expenditures can be considered as important factor influencing organic farming development especially in the Czech Republic, Denmark, France, Greece, Italy, Lithuania, Latvia, Estonia, Luxemburg, Slovakia and the United Kingdom. It is possible to see that government expenditures are not probably the main stimuli for organic farming growth. Much more significant stimuli supporting organic farming development is probably economy development and especially the growth of incomes (economy performance). If we are analyzing the mutual relationship existing between GDP/cap and selected organic farming's characteristics in individual countries, we can see that the high level of mutual correlation and also elasticity exist in the majority of analyzed countries: Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Estonia, France, Germany, Ireland, Latvia, Lithuania, Luxemburg, Poland, Slovakia and Slovenia.

Conclusion

At the end of the paper it is possible to say that during the analyzed time period organic farming and organic products' market recorded the significant growth in the EU. The size of organic farmland increased significantly and also the number of producers increased. Very important factor influencing the growth of organic farming is the growth of organic market value and especially the growth of demand for organic products. In analyzed time period the significant growth of organic farming size was recorded especially in the new EU countries (in the list of top ten countries – countries which recorded the most significant growth of organic farming – we can find seven new EU members). In general it is evident that organic farming represents a specific market niche in the European agricultural market. Its development is connected especially with the new consumption trends and also with the growth of individual countries' economy and especially with the growth of income per capita in individual countries. The growth of organic farming is stimulated especially by the demand side of economy than by government subsidies. The conducted analysis proved much higher correlation and elasticity of organic farming sector in relation to changes in economy than it is in relation to government expenditures. It is also necessary to emphasize that organic market in the EU is controlled by limited number of countries. Also the willingness of consumers to pay higher prices for organic products is limited and among individual countries we can see huge differences in per capita consumption.

Table 1

Selected characteristics of organic farming in the EU in period 2005 – 2011

Country	2005	2011			2005	2011			2005	2011
	Area (ha)	Area (ha)	Basic	Chain	Producers	Producers	Basic	Chain	% Organic farmland in total available agricultural land	% Organic farmland in total available agricultural land
Austria	479817	542553	1.13	1.02	20391	21575	1.06	1.01	16.69	19.66
Belgium	22996	59220	2.58	1.17	733	1274	1.74	1.10	1.66	4.31
Bulgaria	2432	25022	10.29	1.47	111	978	8.81	1.44	0.05	0.82
Czech Republic	254982	460498	1.81	1.10	829	3904	4.71	1.29	5.99	10.84
Denmark	134129	162173	1.21	1.03	3036	2677	0.88	0.98	5.18	6.09
Estonia	59742	133779	2.24	1.14	1013	1431	1.41	1.06	7.21	14.75
Finland	147587	188189	1.28	1.04	4359	4114	0.94	0.99	6.68	8.21
France	550488	975141	1.77	1.10	11402	23135	2.03	1.13	2	3.55
Germany	807406	1015626	1.26	1.04	17020	22506	1.32	1.05	4.74	6.08
Greece	288737	309823	1.07	1.01	14614	21274	1.46	1.06	3.46	3.74
Hungary	128576	124402	0.97	0.99	1553	1433	0.92	0.99	3.01	2.94
Ireland	35266	54122	1.53	1.07	957	1400	1.46	1.07	0.84	1.31
Italy	1069462	1096889	1.03	1.00	44860	42041	0.94	0.99	8.42	8.61
Latvia	104235	184096	1.77	1.10	2873	3484	1.21	1.03	6.11	10.38
Lithuania	64544	152305	2.36	1.15	1811	2623	1.45	1.06	2.31	5.75
Luxembourg	3243	3720	1.15	1.02	72	96	1.33	1.05	2.51	2.84
Malta	14	23	1.63	1.08	6	9	1.50	1.07	0.14	0.22
Netherlands	48765	47205	0.97	0.99	1468	1672	1.14	1.02	2.54	2.45
Poland	159709	609412	3.82	1.25	7182	23430	3.26	1.22	1.08	3.94
Portugal	211501	201054	0.95	0.99	1479	2434	1.65	1.09	5.75	5.79
Romania	92770	229946	2.48	1.16	2920	9471	3.24	1.22	0.67	1.67
Slovakia	90206	166700	1.85	1.11	196	365	1.86	1.11	4.8	8.61
Slovenia	23499	32149	1.37	1.05	1718	2363	1.38	1.05	4.84	6.58
Spain	622762	1621898	2.60	1.17	15693	32195	2.05	1.13	2.51	6.52
Sweden	222738	480185	2.16	1.14	2951	5508	1.87	1.11	6.98	15.4
United Kingdom	612996	638528	1.04	1.01	4263	4650	1.09	1.01	3.84	3.96
EU27	6238603	9514659	1.53	1.07	163510	236042	1.44	1.06	3.50	5.39

Source: EUROSTAT, 2013

Table 2

Organic products market development in the EU in period 2005 – 2011

	Domestic sales/capita value in EUR				Domestic sales value in mil. EUR			
	2005	2011	Basic	Chain	2005	2011	Basic	Chain
Austria	54.69	126.43	2.31	1.15	450.00	1065.00	2.37	1.15
Belgium	21.95	39.37	1.79	1.10	230.00	435.00	1.89	1.11
Bulgaria	0.13	0.95	7.37	1.40	1.00	7.00	7.00	1.38
Cyprus	1.94	1.79	0.92	0.99	2.00	2.00	1.00	1.00
Czech Republic	1.17	5.62	4.79	1.30	12.00	59.00	4.92	1.30
Denmark	56.65	161.74	2.86	1.19	307.00	901.00	2.93	1.20
Estonia	2.97	8.96	3.01	1.20	4.00	12.00	3.00	1.20
Finland	15.25	22.27	1.46	1.07	80.00	120.00	1.50	1.07
France	31.66	57.46	1.81	1.10	2000.00	3756.00	1.88	1.11
Germany	47.29	80.56	1.70	1.09	3900.00	6590.00	1.69	1.09
Greece	4.50	5.13	1.14	1.02	50.00	58.00	1.16	1.03
Hungary	0.59	2.51	4.21	1.27	6.00	25.00	4.17	1.27
Ireland	15.87	21.63	1.36	1.05	66.00	99.00	1.50	1.07
Italy	18.77	28.33	1.51	1.07	1100.00	1720.00	1.56	1.08
Latvia	0.87	1.94	2.24	1.14	2.00	4.00	2.00	1.12
Lithuania	0.59	1.98	3.38	1.23	2.00	6.00	3.00	1.20
Luxembourg	88.14	131.19	1.49	1.07	41.00	68.00	1.66	1.09
Malta	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Netherlands	25.67	45.59	1.78	1.10	419.00	761.00	1.82	1.10
Poland	0.79	3.11	3.96	1.26	30.00	120.00	4.00	1.26
Portugal	0.69	1.99	2.88	1.19	7.29	21.00	2.88	1.19
Romania	0.09	3.74	40.47	1.85	2.00	80.00	40.00	1.85
Slovak Republic	0.74	0.74	1.00	1.00	4.00	4.00	1.00	1.00
Slovenia	2.00	18.51	9.26	1.45	4.00	38.00	9.50	1.46
Spain	6.91	20.90	3.02	1.20	300.00	965.00	3.22	1.21
Sweden	47.95	93.66	1.95	1.12	433.00	885.00	2.04	1.13
United Kingdom	38.74	29.99	0.77	0.96	2333.00	1882.00	0.81	0.96
Total	23.57	39.37	1.67	1.09	11785.29	19683.00	1.67	1.09

Source: IFOAM, 2013

Table 3

Government agricultural expenditures and GDP/cap value development in the EU in period 2005 – 2011

Agricultural expenditures in mil. EUR	2005	2007	2009	2011	Basic	Chain	GDP in Euro per inhabitant	2005	2007	2009	2011	Basic	Chain
Austria	1436.3	1317.3	1510.2	1423.2	0.991	0.998	Austria	29800	33000	33100	35700	1.198	1.031
Belgium	705.3	741.0	737.9	718.0	1.018	1.003	Belgium	29000	31600	31600	33700	1.162	1.025
Bulgaria	225.5	217.4	248.0	211.1	0.936	0.989	Bulgaria	3000	4000	4600	5200	1.733	1.096
Cyprus	189.8	172.9	147.5	152.5	0.803	0.964	Cyprus	18400	20700	20900	21100	1.147	1.023
Czech Republic	626.5	837.0	1074.7	817.3	1.305	1.045	Czech Republic	10200	12800	13600	14800	1.451	1.064
Denmark	249.3	243.9	420.8	393.9	1.580	1.079	Denmark	38300	41700	40500	43200	1.128	1.020
Estonia	64.0	129.0	184.2	127.4	1.991	1.122	Estonia	8300	12000	10300	11900	1.434	1.062
Finland	1940.0	1941.0	1904.0	1995.0	1.028	1.005	Finland	30000	34000	32299	35000	1.167	1.026
France	6618.0	7121.0	7883.0	8031.0	1.214	1.033	France	27300	29600	29300	30700	1.125	1.020
Germany	5990.0	5440.0	5370.0	5920.0	0.988	0.998	Germany	27000	29500	29000	31900	1.181	1.028
Greece	50.0	198.0	816.0	69.0	1.380	1.055	Greece	17400	19900	20500	18500	1.063	1.010
Hungary	1139.7	1191.7	755.2	522.2	0.458	0.878	Hungary	8800	9900	9100	10000	1.136	1.022
Ireland	1063.4	1274.5	1107.7	859.3	0.808	0.965	Ireland	39200	43100	35800	35500	0.906	0.984
Italy	6084.0	6286.0	5907.0	5839.0	0.960	0.993	Italy	24500	26200	25200	26000	1.061	1.010
Latvia	167.4	188.0	294.6	261.0	1.559	1.077	Latvia	5800	9600	8600	9800	1.690	1.091
Lithuania	230.5	381.5	365.6	327.2	1.420	1.060	Lithuania	6300	8900	8400	10200	1.619	1.084
Luxembourg	133.9	139.2	175.5	189.6	1.416	1.060	Luxembourg	65000	78000	72300	82100	1.263	1.040
Malta	54.3	47.5	49.2	43.9	0.808	0.965	Malta	12200	13700	14400	15900	1.303	1.045
Netherlands	1086.0	1180.0	1408.0	1433.0	1.320	1.047	Netherlands	31500	34900	34700	35900	1.140	1.022
Poland	1743.0	3047.8	2636.1	2265.9	1.300	1.045	Poland	6400	8200	8100	9600	1.500	1.070
Portugal	779.4	629.1	646.7	623.1	0.799	0.963	Portugal	14600	16000	15900	16100	1.103	1.016
Romania	485.6	683.9	562.8	468.9	0.966	0.994	Romania	3700	5800	5500	6100	1.649	1.087
Slovakia	360.4	404.7	634.3	562.0	1.559	1.077	Slovakia	7100	10200	11600	12800	1.803	1.103
Slovenia	218.8	243.6	267.9	203.7	0.931	0.988	Slovenia	14400	17100	17400	17600	1.222	1.034
Spain	5599.0	6460.0	6026.0	5318.3	0.950	0.991	Spain	21000	23500	22800	23100	1.100	1.016
Sweden	707.2	567.0	593.8	706.7	0.999	1.000	Sweden	33000	36900	31500	41000	1.242	1.037
United Kingdom	4755.8	3783.2	2947.4	3271.2	0.688	0.940	United Kingdom	31000	34200	25700	28200	0.910	0.984

EU27	42703.1	44866.2	44674.1	42753.4	1.001	1.000	EU27	22600	25000	23500	25200	1.115	1.018

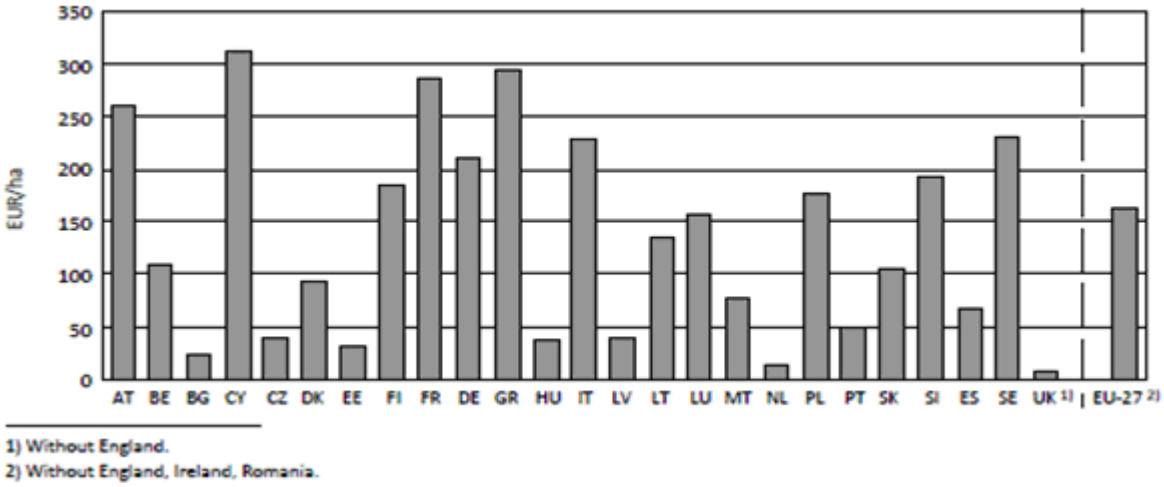
Source: EUROSTAT, 2013

Table 4

Correlation and elasticity existing between GDP/cap and government expenditures on one side and selected organic farming characteristics on the other hand

	GDP per inhabitant								Government expenditures					
	Area (ha)		Producers		Sales, total [Mio €]		Organic products sales per capita in Eur		Area (ha)		Producers		Sales, total [Mio €]	
	Correlation	Elasticity	Correlation	Elasticity	Correlation	Elasticity	Correlation	Elasticity	Correlation	Elasticity	Correlation	Elasticity	Correlation	Elasticity
Austria	**0.762**	0.728	**0.536**	0.353	**0.951**	**5.299**	**0.952**	**5.168**	0.371	0.537	0.431	0.441	0.114	0.632
Belgium	**0.905**	**5.887**	**0.880**	**3.493**	**0.881**	**4.303**	**0.879**	**3.966**	-0.188	-0.749	-0.239	-1.155	-0.230	**-1.202**
Bulgaria	**0.925**	**4.234**	**0.830**	**3.380**	**0.902**	**4.463**	**0.903**	**4.537**	0.237	**0.863**	-0.151	**-0.029**	0.275	**1.297**
Cyprus	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Czech Rep.	**0.835**	**1.407**	**0.793**	**3.821**	**0.940**	**4.458**	**0.939**	**4.387**	**0.569**	**0.903**	0.487	**2.428**	**0.853**	**3.551**
Denmark	**0.763**	**1.387**	**-0.783**	-0.823	**0.857**	**7.873**	**0.860**	**7.687**	**0.796**	0.295	**-0.752**	-0.164	**0.808**	**1.403**
Estonia	**0.562**	**1.274**	**0.711**	0.621	**0.600**	**2.473**	**0.601**	**2.483**	0.419	0.441	**0.524**	0.204	**0.549**	**0.973**
Finland	0.485	**0.825**	**-0.586**	-0.349	0.413	**1.582**	0.396	**1.462**	0.119	0.371	-0.059	-0.075	0.120	0.082
France	**0.665**	**3.893**	**0.696**	**5.158**	**0.735**	**5.499**	**0.728**	**5.226**	**0.855**	**2.386**	**0.910**	**3.156**	**0.919**	**3.171**
Germany	**0.887**	**1.434**	**0.877**	**1.746**	**0.951**	**3.104**	**0.950**	**3.156**	-0.060	-0.179	-0.109	-0.355	-0.287	**-1.428**
Greece	**0.512**	0.420	**0.792**	**2.264**	**0.792**	0.717	**0.806**	0.655	**0.507**	0.021	0.332	0.088	0.313	0.028
Hungary	-0.456	-0.332	-0.229	-0.221	0.438	**3.786**	0.439	**3.819**	-0.223	-0.023	-0.232	-0.026	**-0.664**	-0.740
Ireland	**-0.705**	**-1.154**	**-0.761**	**-1.229**	**-0.693**	**-2.146**	**-0.678**	**-1.908**	-0.136	-0.080	-0.220	-0.109	0.260	0.172
Italy	-0.110	-0.218	-0.152	-0.212	0.268	**1.919**	0.249	**1.637**	**0.547**	0.258	**0.520**	0.179	-0.437	-0.816
Latvia	**0.797**	0.738	**0.609**	0.441	**0.673**	**1.332**	**0.689**	**1.417**	**0.703**	0.543	0.179	0.134	**0.796**	**1.582**
Lithuania	**0.866**	**1.530**	**0.857**	0.748	**0.828**	**1.755**	**0.796**	**1.902**	**0.718**	**1.328**	**0.825**	0.700	0.425	**1.161**
Luxembourg	**0.646**	0.436	**0.861**	**1.353**	**0.628**	**1.787**	**0.585**	**1.390**	**0.725**	0.236	**0.710**	0.542	**0.946**	**1.411**
Malta	0.492	**1.616**	0.088	**1.445**	N/A	N/A	N/A	N/A	-0.192	-0.678	-0.358	**-3.140**	N/A	N/A
Netherlands	-0.047	-0.047	0.492	0.506	**0.726**	**3.251**	**0.730**	**3.130**	-0.012	-0.006	0.698	0.326	**0.909**	1.799
Poland	**0.815**	**2.634**	**0.860**	**2.523**	**0.652**	**1.987**	**0.655**	**1.977**	0.053	0.578	0.157	0.658	-0.086	0.267
Portugal	-0.164	-0.542	**0.767**	**4.004**	**0.547**	**8.099**	**0.546**	**8.043**	0.158	0.181	-0.699	**-1.390**	-0.484	-2.699
Romania	**0.681**	**1.214**	0.271	0.526	0.387	**3.381**	0.387	**3.397**	-0.412	-0.482	-0.399	**-0.868**	**-0.611**	**-4.603**
Slovakia	**0.911**	**0.951**	**0.951**	**0.996**	-0.042	0.003	-0.090	-0.006	**0.841**	**0.830**	**0.897**	**0.864**	-0.093	-0.016
Slovenia	**0.902**	**1.119**	**0.775**	**0.958**	0.433	**6.172**	0.432	**6.088**	0.004	0.007	-0.191	-0.132	-0.417	**-3.604**
Spain	0.457	**4.844**	0.380	**2.874**	0.163	**2.902**	0.150	**2.497**	-0.328	-0.968	-0.447	-1.110	**-0.556**	**-3.249**
Sweden	0.560	**1.783**	0.386	**1.232**	**0.530**	**1.706**	**0.522**	**1.599**	0.130	0.154	0.279	**0.978**	0.277	0.800
UK	**-0.446**	-0.364	0.052	0.008	**0.832**	**1.052**	**0.835**	**1.155**	**-0.697**	-0.345	**-0.558**	-0.315	**0.525**	0.450
EU 27	**0.575**	**2.250**	**0.617**	**1.936**	**0.628**	**2.992**	**0.630**	**2.866**	-0.261	**-0.979**	-0.210	-0.606	-0.177	-0.664

Source: own calculations, 2013



1) Without England.
2) Without England, Ireland, Romania.

Source: European Commission, 2011

Figure 1 – Average government spending for organic support payments per certified organic hectare (2011)

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