

A Comparison of Organic Agriculture Between Turkey and Europe

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Abstract: Organic agriculture is defined as a certified and production system. It contains the potential environment and social impacts that eliminate the synthetic material. In the growing stage, permitted inputs are used and constituted by the legal regulations. As we know that organic agriculture is a holistic production management system. It promotes and enhances agro-ecosystem health that includes biodiversity, biological cycles and soil biological activity. Organic agriculture indicators according to different approximations were examined in this study. These indicators were as follows: Organic agricultural land, producers, organic land use, domestic sales of organic products, international trade data imports and international trade data exports. According to these indicators, different comparisons about statistics were made between Europe and Turkey. Especially, these important data are belong to between 2004 and 2010 year.

Key words: Organic agriculture, domestic sales, social impacts, Turkey, Europe

INTRODUCTION

Since 1970, there have been many improvements in agricultural sector. European firms about organic products have increased to demand for organic products from Turkey. Because, Turkey has started to growing organic products for 1984. In this line, especially two commodities were exported from Turkey to Aegean Region, these commodities were dried grape and dried fig.

Some European companies have arranged new organic farming regulations and projects that make determined production with regard to the demand of the companies. Foreign speacilists and organizations performed different procedures which made inspect, certificate, legal implementation and other important things. With the beginning of 1990s, many foreign organization offices were established and during that time Turkish speacilists have started to take an education related with this area.

The first organic farming activities started in Izmir Province in Turkey. Starting with this activities in this place, there were many organic farming facilities that organizations, institutions, headquarters of controlling and certification companies. Condition of Izmir Province is the best place for taking a start with organic farming. Because, local places of its are sufficient, arable and productive for growing organic agricultural items.

There are many compatible with improvements of organic farming for European countries regulations. In this point, Turkey made many regulations for organic farming activities. Especially, Ministry of Agriculture and Rural Affairs, some organizations and institutions made collaborations about this activity in Turkey. After making

on regulations about “Methods of Organic Production of Vegetal and Livestock Products”, it was published in the 24.12.1994/22145 dated Official Newspaper.

After reviewing this regulation with the Organic Farming Principals and Applications Regulation, it was published in the Official Newspaper 11.7.2002/24812 dated. This new regulations brought about techniques and requirements for the production and processing of vegetal and animal products, harvesting of the crops, labelling, packing, stroge, transportation, inspection, certification and domestic and international marketing. In Europe, organic agriculture started to date back to 1910 but organic agriculture has controlled production back 1930. International Ecological Agriculture Activities Federation (IFAOM) was established in Germany. This institution’s mission to make standarts and regulations. The most important task is to provide and spread information with regard to the updated improvements and technology to the members of institutions and members. There were many improvements with relevant of organic farming in Europe in 2000. Concerning about organic agriculture was signed in Organic Food and Farming Conference in Denmark. European Action Plan came into force in 2001. This plan’s aim was to improve organic agriculture and signed with the Ministries of Agriculture and representatives of the private sector.

Organic Action Plans provide a framework for integrating policies and measures in order to encourage organic sector development. Thus, Action Plans serve as a strategic instrument for governments to achieve policy goals, particularly when multiple policy areas (such as agriculture, environment, trade) and different levels of policy formulation are to be integrated (Schmid *et al.*, 2008).

Organic farming with regard to the legal system in European Union (EU) was constituted by the 2092/91 regulation number. After making this regulations, there were many important improvements about organic agriculture.

About one quarter of the world's organic agricultural land (32.2 million ha in total) is in Europe (Willer and Kilcher, 2009). The European market for organic food accounts for 54% of the global organic market and is thus larger than the North American market (43%). Global turnover with organic food was 46 billion US dollars in 2007 and should have topped the 50 billion US dollars mark in 2008 (Sahota, 2009).

According to a survey by the IFOAM EU Group and FiBL, at least 15 countries in Europe have or had an action plan (Gonzalvez, 2009), many of them with quantitative targets. Austria for instance aims to have 20% organic land by 2010.

Today, organic farming research is substantially funded under national research programs or national organic action plans as well as through European projects. Even though, no figures for all European countries are available, it is known that the funds of the eleven countries that are part of the ERA-Net project CORE Organic5, amount to <60 million Euros annually (Lange *et al.*, 2006).

Global turnover in organic food was almost 55 billion US dollars or approximately 40 billion Euros in 2009 (Sahota, 2011). About one quarter of the world's organic agricultural land (37.2 million ha in total) is in Europe (which accounts for 9.2 million ha). In the European Union in 2009, there were 8.3 million hectares dedicated to organic farming, constituting 4.7% of the European whole agricultural land. They were managed organically by almost 220,000 producers (Willer and Kilcher, 2011).

In Turkey, organic agriculture have started with European firms since mid-1980. In now-a-days, there are many local firms related with organic agriculture, too. Turkey has a good and sufficient contiditons to produce for organic production. Turkey has an agro-ecosystem health that includes biodiversity, biological cycles and soil biological activity. Organic agriculture have been developing rapidly but an important part of production contains vegetable productions (especially dry and hard-shelled fruit and field crops).

Generally, organic agriculture of Turkey's share in the world is quite small. Domestic production is shaped for foreign trade demand. A little part of organic export production is processed (refined) agriculture and commodity productions. Local producers are bad effected with related to crisis of world economies in the nearly last years.

There are many marketing problems in line with lack of domestic demand and information, over price of

production and etc. The other side, there many restrictions about infrastructure work, lack of supportive procedure, etc.

Consumers are given disinformation about organic production especially some productions for instance like villagers production are bought by consumers in Turkey. This situation created bad effects over Turkish consumers.

There is not any sufficient financial support before but now, producers are supported by Turkish government. Relations between producers, organizations and governments must be developed according, to Europe and World's developing regulations of organic agriculture.

In Turkey, there is some lack of believe for organic productions. Some bad things cause bad effect for example some organic productions were returned from other countries related with export. At the end, domestic producers were bad effected with these ways.

There are not any sufficient works about organic agriculture not only private sector but also government sector. Now-a-days, some research works in university have good and positive effected the other research works. In this point, researchers should be supported in R&D works for organic agriculture.

Farmers should be educated with related this area from private and government speacilists and experts. Farmers should be taken establishment by an official organizations and cooperative.

MATERIALS AND METHODS

The annual survey on organic agriculture world-wide is carried out by the Research Institute of Organic Agriculture (FiBL) and the International Federation of Organic Agriculture Movements (IFOAM). Numerous experts from >150 countries are contributing to the data collection. Since 2008, the data collection activities have been supported under a project of the International Trade Centre (ITC) and the Swiss State Secretariat for Economic Affairs (SECO). In the yearbook, *The World of Organic Agriculture* the data collected in the frame of the survey are presented annually. The following information is collected in the frame of the global survey: Area, production, land use and crops, operators, market data, international trade data and production data.

Organic agriculture indicators according to different approximations were examined in this study. These indicators were as follows: Organic agricultural land, producers, organic land use, domestic sales of organic products, international trade data imports and international trade data exports. According to these indicators, different comparisions about statistics were made between Europe and Turkey. Especially, these important data are belong to between 2004 and 2010 year.

RESULTS AND DISCUSSION

In Table 1, organic agricultural land and producers numbers with relevant Europe countries. According to the comparison share of organic agricultural land and producers, there are many increasing ratio over 10%. While three countries that is Greece, Italy and Switzerland has decreased below 10%, the other countries has increased above 10% except for Albania, Faroe Islands, Hungary, Liechtenstein, Netherlands and Serbia/Montenegro.

We can see organic land use by Turkey and Europe from 2004-2010. Main use are detailed by agricultural land and crops, no details, arable crops, cropland, no details, other agricultural land, permanent crops and permanent grassland. In Table 2, Turkey's share in Europe with relevant main use about agricultural land and crops, no details are 0% until 2006, in 2007 this value peak 41.51% but in 2010 this value suddenly decreased 12.60%. Turkey's total share in Europe dramatically increased nearly double value in 2010 by 2004 (Table 2).

Table 1: Development of organic agricultural land (including conversion land) and producers by country 2005 and 2010

| Countries | 2005 | | 2010 | | Comparison share (%) (2005-2010) | |
|---|------------------------|-----------|------------------------|-----------|----------------------------------|-----------|
| | Agricultural land (ha) | Producers | Agricultural land (ha) | Producers | Agricultural land (ha) | Producers |
| Albania | 1,170 | 93 | 284 | 110 | -75.73 | 18.28 |
| Andora | - | - | 2 | 1 | - | - |
| Austria | 479,817 | 20,391 | 543,605 | 22,132 | 13.29 | 8.54 |
| Belarus | - | - | - | - | - | - |
| Belgium | 22,996 | 720 | 49,005 | 1,108 | 113.10 | 53.89 |
| Bosnia and Herzegovina | 416 | 26 | 580 | 27 | 39.42 | 3.85 |
| Bulgaria | 2,432 | 111 | 25,648 | 709 | 954.61 | 538.74 |
| Channel Islands | - | - | 370 | - | - | - |
| Croatia | 3,124 | 269 | 23,352 | 1,125 | 647.52 | 318.22 |
| Cyprus | 1,698 | 305 | 3,575 | 732 | 110.49 | 140.00 |
| Czech Republic | 254,982 | 829 | 448,202 | 3,517 | 75.78 | 324.25 |
| Denmark | 134,129 | 3,036 | 162,903 | 2,677 | 21.45 | -11.82 |
| Estonia | 59,742 | 1,013 | 112,972 | 1,356 | 89.10 | 33.86 |
| Faroe Islands | 410 | - | 253 | 1 | -38.29 | - |
| Finland | 147,587 | 4,359 | 169,168 | 4,022 | 14.62 | -7.73 |
| France | 550,488 | 11,402 | 845,442 | 20,604 | 53.58 | 80.71 |
| Germany | 807,406 | 17,020 | 990,702 | 21,942 | 22.70 | 28.92 |
| Greece | 288,737 | 14,614 | 309,823 | 21,274 | 7.30 | 45.57 |
| Hungary | 128,576 | 1,553 | 127,605 | 1,617 | -0.76 | 4.12 |
| Iceland | 4,989 | 25 | 5,806 | 38 | 16.38 | 52.00 |
| Ireland | 35,266 | 957 | 47,864 | 1,366 | 35.72 | 42.74 |
| Italy | 1,069,462 | 44,860 | 1,113,742 | 41,807 | 4.14 | -6.81 |
| Latvia | 104,235 | 2,873 | 166,320 | 3,593 | 59.56 | 25.06 |
| Liechtenstein | 1,040 | 35 | 1,020 | 31 | -1.92 | -11.43 |
| Lithuania | 64,544 | 1,811 | 143,644 | 2,652 | 122.55 | 46.44 |
| Luxembourg | 3,243 | 72 | 3,720 | 96 | 14.71 | 33.33 |
| Malta | 14 | 6 | 24 | 11 | 71.43 | 83.33 |
| Moldova | 11,075 | 121 | 32,105 | 166 | 189.89 | 37.19 |
| Montenegro | - | - | 3,561 | 62 | - | - |
| Netherlands | 48,765 | 1,468 | 46,233 | 1,462 | -5.19 | -0.41 |
| Norway | 43,033 | 2,496 | 57,219 | 2,805 | 32.97 | 12.38 |
| Poland | 159,709 | 7,182 | 521,970 | 20,578 | 22683.00 | 186.52 |
| Portugal | 211,501 | 1,479 | 201,054 | 2,434 | -4.94 | 64.57 |
| Romania | 92,770 | 2,920 | 182,706 | 2,986 | 96.95 | 2.26 |
| Russian Federation | 4,049 | 10 | 44,017 | 50 | 987.13 | 400.00 |
| Serbia | - | - | 8,635 | 3,887 | - | - |
| Serbia/Montenegro | 591 | - | - | - | -100.00 | - |
| Slovakia | 90,206 | 196 | 174,471 | 363 | 93.41 | 85.20 |
| Slovenia | 23,499 | 1,718 | 30,696 | 2,218 | 30.63 | 29.10 |
| Spain | 622,762 | 15,693 | 1,456,672 | 27,877 | 133.90 | 77.64 |
| Sweden | 222,738 | 2,951 | 438,693 | 5,208 | 96.95 | 76.48 |
| Switzerland | 117,116 | 6,420 | 119,613 | 5,989 | 2.13 | -6.71 |
| Turkey | 93,133 | 14,401 | 383,782 | 43,096 | 312.08 | 199.26 |
| Ukraine | 241,980 | 72 | 270,226 | 142 | 11.67 | 97.22 |
| United kingdom | 612,996 | 4,263 | 699,638 | 4,949 | 14.13 | 16.09 |
| The former Yugoslav Republic of Macedonia | 249 | 50 | 35,164 | 542 | 14010.19 | 984.00 |
| Total | 6,762,677 | 187,820 | 10,002,087 | 277,362 | 47.90 | 47.67 |

Table 2: Organic land use by Europe and Turkey (fully converted and converted) 2004-2010

| Lands (ha) | Main uses | Years | | | | | | |
|------------------------------|---|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | 2010 | 2009 | 2008 | 2007 | 2006 | 2005 | 2004 |
| Europe | Agricultural land and crops, no details | 143,742 | 132,736 | 60,716 | 329,693 | 76,756 | 230,144 | 289,847 |
| | Arable crops | 4,058,385 | 3,707,543 | 3,259,790 | 3,196,456 | 2,877,116 | 2,721,086 | 2,166,920 |
| | Cropland, no details | 39,341 | -89,323 | -13,966 | -83,515 | 81,116 | 79,648 | 191,237 |
| | Other agricultural land | 276,965 | 313,504 | 341,217 | 281,922 | 213,935 | 227,923 | 184,539 |
| | Permanent crops | 983,783 | 1,007,746 | 751,611 | 703,110 | 691,772 | 511,083 | 451,845 |
| | Permanent grassland | 4,499,872 | 4,131,393 | 3,870,335 | 3,342,375 | 3,325,392 | 2,992,793 | 3,068,716 |
| Total | | 10,002,087 | 9,203,600 | 8,269,703 | 7,770,041 | 7,266,087 | 6,762,677 | 6,353,105 |
| Turkey | Agricultural land and crops, no details | -18.107 | | | 136.845 | | | |
| | Arable crops | 274.169 | 221.326 | 60.696 | 64.434 | 417 | 9.130 | 8.000 |
| | Cropland, no details | | -89.323 | -13.966 | -173.611 | | 73.761 | 94.481 |
| | Other agricultural land | 25.602 | 24.907 | 6.632 | 11.021 | 9.152 | 3.960 | 2.470 |
| | Permanent crops | 69.016 | 144.165 | 52.968 | 82.928 | 82.774 | 6.282 | 3.646 |
| | Permanent grassland | 33.102 | 24.757 | 3.058 | 2.646 | 7.932 | | |
| Total | | 383.782 | 325.831 | 109.387 | 124.263 | 100.275 | 93.133 | 108.597 |
| Turkey's share in Europe (%) | Agricultural land and crops, no details | -12.60 | 0.00 | 0.00 | 41.51 | 0.00 | 0.00 | 0.00 |
| | Arable crops | 6.76 | 5.97 | 1.86 | 2.02 | 0.01 | 0.34 | 0.37 |
| | Cropland, no details | 0.00 | 100.00 | 100.00 | 207.88 | 0.00 | 92.61 | 49.41 |
| | Other agricultural land | 9.24 | 7.94 | 1.94 | 3.91 | 4.28 | 1.74 | 1.34 |
| | Permanent crops | 7.02 | 14.31 | 7.05 | 11.79 | 11.97 | 1.23 | 0.81 |
| | Permanent grassland | 0.74 | 0.60 | 0.08 | 0.08 | 0.24 | 0.00 | 0.00 |
| Total share (%) | | 3.84 | 3.54 | 1.32 | 1.60 | 1.38 | 1.38 | 1.71 |

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In Table 3, domestic sales of organic products for Europe countries from 2009-2010. Comparisons of total sales in 2010 by 2009 are calculated by countries. Especially, while share values of Cyprus, Czech Republic, Estonia, Greece, Hungary, Liechtenstein, Russian Federation, Spain and Turkey are the same namely; zero, share of the remains countries are dramatically increase. But, Ireland, Norway, Portugal, Slovakia and United Kingdom share values are decrease.

International trade data exports by country for 2009 and 2010 are given Table 4. According to Table 4, Italy, Netherlands and Spain countries have over 20%, especially Italy has a strong exports structure in Europe than the other Europe countries. While Turkey has a 0.89% in 2009, in 2010 Turkey's share decrease 0.86%.

Organic agricultural land and producers numbers with relevant Europe countries and Turkey are given. Share of organic agricultural land and producers are compared between 2005 and 2010 year. Agricultural land areas are 312.08% increased and producers 199.26% increased in Turkey in 2005 year for 2010 year.

Organic land use is different categories as follows: Agricultural land and crops, no details; arable crops; cropland, no details; other agricultural land; permanent crops and permanent grassland. According to these categories, Turkey's share in Europe is calculated between 2004 and 2010 year. While agricultural land and crops, no details in 2004 has zero percentage, -12.60% in 2010. In this category, although the highest percentage

Table 3: Domestic sales of organic products by country 2009 and 2010

| Countries | Sales, total (Mio €) | | Comparison share (%) |
|------------------------|----------------------|-------|----------------------|
| | 2009 | 2010 | |
| Austria | 868 | 986 | 13.65 |
| Belgium | 350 | 421 | 20.29 |
| Bosnia and Herzegovina | No data | 1 | - |
| Bulgaria | 5 | 7 | 55.56 |
| Croatia | 37 | 69 | 85.15 |
| Cyprus | 2 | 2 | 0.00 |
| Czech Republic | 68 | 68 | 0.00 |
| Denmark | 765 | 791 | 3.40 |
| Estonia | 12 | 12 | 0.00 |
| Finland | 75 | 80 | 6.10 |
| France | 3,148 | 3,516 | 11.69 |
| Germany | 5,800 | 6,020 | 3.79 |
| Greece | 58 | 58 | 0.00 |
| Hungary | 25 | 25 | 0.00 |
| Ireland | 113 | 103 | -8.51 |
| Italy | 1,350 | 1,550 | 14.81 |
| Liechtenstein | 3 | 3 | 0.00 |
| Luxembourg | 51 | 65 | 27.45 |
| Montenegro | 0 | 0 | 81.82 |
| Netherlands | 591 | 657 | 11.18 |
| Norway | 114 | 113 | -0.90 |
| Poland | 50 | 59 | 17.80 |
| Portugal | 22 | 21 | -4.55 |
| Romania | 3 | 45 | 1700.00 |
| Russian Federation | 65 | 65 | 0.00 |
| Serbia | No data | 40 | |
| Slovakia | 4 | 4 | -7.19 |
| Slovenia | 35 | 38 | 10.14 |
| Spain | 905 | 905 | 0.00 |
| Sweden | 698 | 804 | 15.18 |
| Switzerland | 1,023 | 1,180 | 15.30 |
| Turkey | 4 | 4 | 0.00 |
| Ukraine | 1 | 2 | 100.00 |
| United Kingdom | 2,065 | 2,000 | -3.15 |

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Table 4: International trade data exports by country 2009 and 2010

| Countries | Exports, total (Mio €) | | Country's share in Europe total | |
|------------------------|---------------------------|---------|------------------------------------|--------|
| | 2009 | 2010 | 2009 | 2010 |
| Austria | 66 | 76 | 2.99 | 3.32 |
| Belgium | No data | No data | - | - |
| Bosnia and Herzegovina | 1 | 1 | 0.05 | 0.04 |
| Bulgaria | No data | No data | - | - |
| Croatia | 3 | 4 | 0.14 | 0.19 |
| Cyprus | No data | No data | - | - |
| Czech Republic | 4 | 4 | 0.18 | 0.17 |
| Czech Republic | No data | No data | - | - |
| Denmark | 100 | 115 | 4.52 | 5.03 |
| Estonia | No data | No data | - | - |
| Finland | 14 | 14 | 0.63 | 0.61 |
| France | No data | No data | - | - |
| Germany | No data | No data | - | - |
| Greece | No data | No data | - | - |
| Hungary | 20 | 20 | 0.90 | 0.87 |
| Ireland | No data | No data | - | - |
| Italy | 1.000 | 1.050 | 45.23 | 45.91 |
| Liechtenstein | No data | No data | - | - |
| Luxembourg | No data | No data | - | - |
| Montenegro | No data | No data | - | - |
| Netherlands | 525 | 525 | 23.75 | 22.96 |
| Norway | No data | No data | - | - |
| Poland | No data | No data | - | - |
| Portugal | No data | No data | - | - |
| Romania | No data | No data | - | - |
| Russian Federation | 4 | 4 | 0.18 | 0.17 |
| Serbia | No data | No data | - | - |
| Slovakia | No data | No data | - | - |
| Slovenia | No data | No data | - | - |
| Spain | 454 | 454 | 20.54 | 19.85 |
| Sweden | No data | No data | - | - |
| Switzerland | No data | No data | - | - |
| Turkey | 20 | 20 | 0.89 | 0.86 |
| Ukraine | No data | No data | - | - |
| United Kingdom | No data | No data | - | - |
| Europe total | 2.211 | 2.287 | 100.00 | 100.00 |

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is 41.51% in 2007, the lowest percentage is 2010 year. When cropland, no details category is examined, the lowest shares are zero in 2006 and 2010 year. Except from these years in this category, shares have 49% and over. Share of other agricultural land category has changed between 1 and 9%. Permanent grassland shares have <1% for all years.

Domestic sales of organic products are calculated for countries between 2009 and 2010 year. Comparison share for Turkey between 2009 and 2010 year is zero. The highest sales ratio has Romania.

CONCLUSION

When international trade data exports by countries are examined, some countries have not any trade data. For

this reason, it was not calculated share belong to these country's trade data. Turkey's export value has not change that is stable between 2009 and 2010 year. But, country's share in Europe is changed for the years. Especially while in 2009, Turkey's share in Europe has 0.89%, in 2010 this ratio has 0.86%. The other European country's share have not any volatilities and smoothly alittle changed.

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