



Tropentag 2007
University of Kassel-Witzenhausen and
University of Göttingen, October 9-11, 2007

Conference on International Agricultural Research for Development

Economic and Environmental Assessment of Organic Farming in Turkey

Dr. Tülin Yücel¹, Prof. Dr. Mehmet Bülbül², Assoc. Prof. Dr. Harun Tanrıvermiş³

¹ KfW-Bank, Büro Ankara (tyucel@kfwankara.com)

² Ankara University, Department of Real Estate Development (bulbul@agri.ankara.edu.tr)

³ Ankara University Department of Agricultural Economics, Turkey (tanrivermis@agri.ankara.edu.tr)

Turkey with its immense experience in farming practices, different climatic conditions and rich biodiversity possesses, has a high potential for organic agriculture. Although organic farming and in-conversion land constitute a small proportion of the total agricultural land, this proportion is growing from year to year with the increasing health awareness in domestic and international markets. According to the Turkish view during the transition to the EU membership, main targets are to improve the income distribution, to overcome poorness, activate the dynamics in agriculture. Investments in organic plant and animal production is one of the opportunities for this transition period. Organic farming has been adopted in farms since the mid 1980s by the supports of trade firms in the western part of Turkey and organic crop and livestock farming has rapidly diversified. Currently 170.000 hectares are managed organically, which corresponds to 0.70 % of the total agricultural area. % 56 of the this land is used for the production of dried fruits, % 24 for crops, % 9 for alternative plants and %6 for other products. 200 different crops and livestock are produced organically and organic production has reached 254.000 tons in 2006. Major product groups were dried fruits, edible nuts, spices and herbs as well as fresh and processed fruits and vegetables. Organic agriculture was initiated in Izmir which is located in the Aegean region, in 1985 with dried fruits. But today, organic agricultural production has expanded to all regions; Izmir, Malatya, Sanliurfa, Aydin, Bursa, Hatay, Kütahya, Isparta, Rize and Afyon are today the leading provinces in organic agricultural production. Production has been realized according to the standards and certification systems of the importing countries, which are mainly the EU countries. The state regulation on production, processing and trade of organic products came into force since 1994 and it has been revised four times so far to adopt international standards. A framework law was developed and put into force in December 2004.

Development of Organic Agriculture in Figures and Current Statistics

Organic production of Turkey

At the beginning of the 1990's, the number of organic farmers was very small and did not change to a big extent over the years. But towards the end of the decade a huge increase in the production of organic agricultural products was observed. Many farmers decided to change their conventional production methods to adaptation of organic techniques. Contract farming has been an important feature in organic agricultural production. This method enables

contractors to ensure that the product meets certain standards and for producers to guarantee a previously agreed payment. Although the dried fruits sector was the pioneer in Turkey's organic agricultural sector in 1985, today there exist nine major product groups, which are now produced extensively not only for foreign markets but for domestic consumers as well.

These nine subgroups are:

- Dried Fruits Edible Nuts
- Spices and Herbs
- Fresh /Processed Fruits and Vegetables
- Pulses
- Cereals
- Industrial Crops
- Oil Seeds and Other Raw /Processed Products.

In year 2005, the number of products reached 205. The number of farmers as well as there organic farming area and the product ranche increased rapidly. The number of farmers who were in transsition period of licenced organic products were 1.947 in year 1996 but increased to 4.974 in 2005. The number of total farmers which was 4.034 in 1996 reached 14.401 in 2005. The production volume increased from 168.306 tons in 1999 to 323.981 tons in 2003 and to 421.934 tons in 2005. In 2006 the number of farmers active in organic farming reached 14.256 including farmers in the transition period. According to the Law control of certification firms is needed at least 3 years before getting an organic certificate from Ministry of Agriculture and Rural Affairs (MARA).

Table 1: Increase in the Organic production of Turkey (incl. Transition period Production)

Years	No.of Products	No.of Farmers	Land (ha)	Production Amount (tons)
2003	179	14.798	113.621	323.981
2004	174	12.806	209.573	378.803
2005	205	14.401	203.811	421.934

Source: Ministry of Agriculture and Rural Affairs (MARA).

Export of Organic Production of Turkey

Turkish organic agricultural products are becoming more and more familiar to foreign importers. The destinations of Turkey's organic agricultural products' exports reached 37 countries in 2003. The majority of exports are directed to the European Union Countries: Germany, The Netherlands, England , Italy and France are the major export markets of Turkey. Switzerland, The USA, Belgium, Denmark, Austria, Thailand, Spain, Canada, Australia, Sweden, Bulgaria, India, Japan, Slovenia and New Zealand are other developing export markets. 61 % of export belongs to Germany. USA is the second queue with 15%, other countries in Europe are Sweden, England, Netherlands, France and Denmark which approximately have a share of 2-3 per cent in the Turkish organic export.

Turkey's export volume of organic products increased from 8.616 tons in year 1998, to 9.319 tons in 2005. The number of the exporting firms was 31 in 2000, their export was 12.049 tons with a value of 22.756.297 \$. This increased to 9.319 tons in 2006 and the value reached 26.230.250 \$. The pick of exports however reached 36.932.995 \$ in year 2003.

Table 2: Countries of Export in Year 2004

Country	Amount (Ton)	Value (\$)	%
Germany	5.238	12.348.225	37,3
England	1.710	3.123.607	9,4
Holland	1.677	2.555.794	7,7
Switzerland	822	2.456.479	7,4
France	832	2.257.458	6,8
Tailand	1.139	1.980.218	6,0
Italy	1.386	1.798.780	5,4
United Nations	694	1.567.104	4,7
Belgium	706	756.138	2,3
Austria	372	619.136	1,9
Denmark	306	603.355	1,8
Total	14.882	30.066.294	90,7
Total incl.other exports	16.093	33.076.319	

Source: Eagean Exporters Federation, 2005

Table 3: Export of Organic Production of Turkey

Year	Amount (kg)	Amount (\$)
1998	8.616.687	19.370.599
1999	12.049.949	24.563.892
2000	13.128.934	22.756.297
2001	17.556.280	27.242.407
2002	19.182.859	30.877.140
2003	21.083.351	36.932.995
2004	16.093.000	33.076.319
2005	9.319.328	26.230.250

Source: Export Promotion Center-IGEME

Turkish exporters are aware of the health and environmental considerations of customers and satisfy these customer needs by offering products, which comply with both legislative and market requirements. Instruments such as ISO 9001: 2000 and HACCP are positive arguments for quality and food safety. Turkish exporters have successfully followed these developments which affect world trade. The main products are Raisins, Dried Figs, Hazelnuts, Dried Apricots, Apple Juice, Frozen

Fruits, Cotton Pine, Kernels Lentils, Chick Peas, Frozen Vegetables, Anise, Fennel & Coriander Seeds, Honey, Pistachios, Olive Oil, Canned Cherries, Tomato Paste, cracked Wheat (Bulgur) and Semolina and prunes.

Firms active in organic farming in Turkey:

In 2000, only 92 firms were active in the production and processing of organic products in Turkey out of these 21 firm were active in the production of dried crops, 10 in the production of edible nuts, 5 in the production of canned food, 6 in crop production, 4 olive oil production, 3 in the textile sector and 3 in the honey production (Bulbul & Yucel 2003). The number of firms increased in 2003 to 236, newcomers were firms which produced fresh fruits and

vegetables, tea and wine yards. Out of these 236 firms 92 were active in the production of dried fruits and vegetables, 15 in the production of edible nuts, 8 in the production of canned and frozen fruits, 19 in crop production, 13 in the olive oil production, 4 in the organic wool production, 3 in organic meat and milk production, 10 in alternative crops, 4 in the trade sector, 4 in the wine yard production, 12 in the honey production, 4 in the tea production, 7 harvesting directly from the nature, 20 firms are producing the inputs and 6 are active in different sub-sectors of the organic production.

Economic and Environmental Assessment of Organic Farming

Organic (ecological, biological) agriculture is an alternative production system that protects the balance of nature which gets lost in the result of faulty applications, that is friendly to human and environment, that prohibits the use of hormones and synthetic fertilizers, that uses green manure, that increases the alternation production system, soil conservation, the resistance of plants, that purpose is increasing the product quality.

Integrated pest and nutrient management systems and certified organic agriculture can reduce reliance on agricultural inputs as well as making agriculture environmentally and economically sound. Pimentel and Pimentel (1996) and the National Academy of Sciences (2003) have demonstrated that sound management practices can reduce pesticide inputs while maintaining high crop yields and improving farm economics. Some government programs in Sweden, Ontario (Canada) and Indonesia have demonstrated that pesticide use can be reduced 50 to 65% without sacrificing high crop yields.

A research on organic nuts in the Black Sea region of Turkey shows that yield wasn't affected directly by organic production techniques (Bülbül, Tanrıvermiş, 2002). The study also gave an economic analysis on expenses and outflows.

The Local Market for Organic Products in Turkey

Most of the organic products are exported to the EU countries. Germany is in the first row (about 55-60% of total sales). The domestic market is much below the expected level but has started to develop since the last 2-3 years, due to the interest of people who are living in big cities. The sales of organic products in the domestic market are made in natural product shops or in special sections of hypermarkets. Unfortunately, all products come from plant production. A research of the University of Izmir shows that out of the 1000 consumers 15% were willing to buy organic products. These are the income groups which have 50% of the income. The organic products in the local Turkish market are mostly 40% more expensive than the conventional products in the market. There are about 50 shops and supermarkets where the local consumers can purchase organic foods. However, the need is at least 100 shops and supermarkets.

Discussion

Results of the research carried out on the farm level indicate that average yields of organic crops are generally low, prices received by farmers, labor requirements and the net profit per hectare of planted area is higher than conventional farming in Turkey. Organic farming has a positive contribution to producer welfare, and producers are inclined to maintain and expand the organic farming in general.

References:

Beşirli, Gülay, 2001, Anbau von Tomaten im Öko Bau. Bericht des Ökologischen - Landwirtschaft 2'tes Semposiums, 266- 257

- Bülbül, M., Tanrivermiş, H., 2002, Vergleichende wirtschaftliche Analyse des konventionellen und ökologischen Haselnussanbaues in der Türkei, Berichte über Landwirtschaft, Band 8, Landwirtschaftsverlag, Münster-Hiltrup
- Bülbül, Yücel, 2003, Analyse der Öko Firmen der Türkei, Ökologische Landwirtschaft 2. tes Semposium, 36-48
- Anonymous 1. Tarım ve Köyisleri Bakanlığı bildirgesi, <http://www.IGEME.org.tr>
- Anonymous 2. Tarım ve Köyisleri Bakanlığı www.tarim.gov.tr
- Anonymous 3. <http://rapunzel.com/about/>
- Anonymous 4. Ege Ihracatçılar Birliđi, Izmir 2006
- Canbazođlu, Ege University -1999
- Pimentel D.L., Mc. Laughlen, A. Zepp, B. Kakitan, T. Kraus, P. Kleinmann, F. Vancini, WC. Keeton: Environmental and Economic effects of reducing pesticide use in Agriculture
- Türkiye Kakinma Bankası, TKB