

The Development of Production, Export and Domestic Sales of Organic Agricultural Products in Turkey

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Abstract: Sensitivity concerning environmental protection and demand for healthy food have been showing an escalating trend foremost in developed countries in recent years. For this purpose, production of organic agricultural products has become important in many countries around the world. The USA and EU countries are the leading countries which are attaching great importance to organic food production and consumption. Increase in the demand for organic products has created a need for cheaper and better quality organic production. The production of organic agricultural products has now created an additional export opportunity for developing countries such as Turkey. Despite having suitable conditions for organic production, Turkey's share of world organic production and marketing is very low. Turkey's share is only 0.1% in the world organic market of \$20 billion. Unlike the developments in Europe, organic agriculture activities in Turkey have begun to incline in accordance with the demand of importer companies. In the last decade in Turkey, legislation pertaining to organic agricultural products has come into force. The number of organic products had risen to 174 in 2004 from 8 in 1990. The reasons for this development are the education of farmers and technicians, producer organizations and important enterprises in marketing.

Key words: Organic agriculture • organic production • organic agriculture legislation • sustainable agriculture • Turkey

INTRODUCTION

As known, the propensity to consume escalates if population and income increase. Because of this fact, the world demand for food is increasing daily. To meet need for food, agricultural production per capita should be increased. The most effective way of increasing agricultural production is raising the yield. Raising the yield is a consequence of more intensive input usage. Especially after the Industrial Revolution, chemical input use in agricultural production has shown a marked rise in western countries. However, widespread chemical input use has increased environmental pollution and consequently, food safety has deteriorated. Accordingly, damage to the balance of nature and human health due to the use of excessive chemical input has become better understood. Consequently, searches for alternative approaches began as some developed countries began to restrict the usage of chemical inputs.

Restriction of chemical input use also provided a starting point for organic farming. For this purpose the International Federation of Organic Agriculture Movements (IFOAM) was founded in 1972 [1]. This foundation gathered the world's organic farming organizations under the same umbrella. The establishment of IFOAM and the increase in consumer demand in developed countries for healthier and better quality products lead the way to a rapid increase in the number of organic producers and organic production.

Trade of organic agricultural products began to increase globally after 1980. Today, organic production is practised in approximately 110 countries and on 26 million hectares (ha) area in the world [2]. Organic farming began through contractual farming in 1980's with very few products in Turkey [3]. In 1992, the Ecological Agriculture Organization (ETO) was established in Izmir. An important effect of the establishment of ETO was that the number of organic products increased and production became widespread in the country after 1992.

In Turkey, the most important problem is experienced between exporter companies and producers of organic agricultural products. However, inadequate domestic demand is a serious handicap to the development of organic farming.

MATERIALS AND METHODS

Data for this study were obtained from the Ministry of Agriculture and Rural Affairs, Turkey (MARA), IFOAM (Soel) and Undersecretariat of the Prime Ministry of Foreign Trade/ Export Promotion Center, Turkey (IGEME). Moreover, related literature was also utilized. Statistical methods, such as percentages and averages have been used in the study.

Developments in the production of organic agricultural products in Turkey: Especially after the Second World War, both in developed and to some extent developing countries, agriculture became highly mechanized and specialized as well as heavily dependent on agro-chemicals. Such intensification of farming has produced higher yields and greater wealth but has also created some problems affecting the environment, food and farm-worker safety [4]. As a consequence, organic agriculture became increasingly important. In 1972, the International Federation of Organic Agriculture Movements (IFOAM) was established. The main office of the organization is in Germany and it has more than 750 members in 108 countries [1]. After 1980's, organic agriculture have become a contemporary production system together with the development of alternative production methods. Also, consumer consciousness has had an important role in the development of organic agricultural production.

Today, organic agriculture is practised in approximately 100 countries and more than 26 million ha in the world. The ten countries having the largest organic agricultural area are Australia (11.300.000 ha), Argentina (2.800.000 ha), Italy (1.052.002 ha), USA (930.810 ha), Brazil (803.180 ha), Uruguay (760.000 ha), Germany (734.027 ha), Spain (725.254 ha), UK (695.619 ha) and Chile (646.150 ha) respectively. Turkey is twenty ninth ranked on the list with 103.190 ha [2].

When the land area under organic management as a percentage of total agricultural area is analyzed, the five highest ranked countries are Liechtenstein (26.4%), Austria (12.9%), Switzerland (10.3%), Finland (7.2%) and Italy (6.9%) [2].

The number of farms worldwide practising organic agriculture production is approximately 558.500. The top three countries are; Mexico (120.000), Indonesia (45.000) and Italy (44.043). Turkey is twelfth ranked with 13.044 farms [2].

Italy is the top country in Europe in terms of organic agricultural area. Germany, UK, Spain and France follow Italy respectively. Although Sweden, Austria, Denmark, Finland and Switzerland have small organic agricultural areas, they are among the developed countries in the organic agricultural sector [5].

Organic agricultural activities in Turkey became export-oriented mainly after 1986. This was in accordance with the demands of importer companies. In the beginning, production and export was practised according to the legislation of importer countries. After 1991, production and export were carried out in accordance with the European Council Regulation numbered 2092/91. Subsequently, the obligations for countries exporting organic products to the European Union were stated in detail in the appendix numbered 94/92, published in January 14, 1992. Under this arrangement, every country has to prepare its own legislation and apply to the European Union in relation to various technical and administrative subjects and the legislation [6].

In 1992, ETO was founded in order to provide the rapid and stable development of organic agriculture under a specific umbrella organization with the participation of producers, consumers, handlers, auditors, researchers propounding ecological agriculture philosophy. The center for ETO is in Izmir. The main purposes of ETO are to develop and widen organic agriculture and to create a domestic market [7].

The Ministry of Agriculture and Rural Affairs (MARA) brought "The Legislation Concerning the Production of Vegetable and Animal Products by Ecologic Methods" into force in 1994 to accommodate developments in the EU.

In 2004, "Organic Farming Law" which can be considered as a revolution after dense studies, came into force so as to practise organic agriculture extensive [8].

Production of organic agricultural products began in 1983-1984 in Turkey [9]. Organic production began with sultanas and figs which are traditional export products from the Aegean region. Later, hazelnuts and apricots were added to these products [3]. Today, 7 companies are charged with certification and control by MARA in Turkey. Five of them are foreign and two of them are domestic. Furthermore, the number of companies

Table 1: Changes in the number of organic products, organic producers and organic production area in Turkey *[10],**[6]

Years	Number of Products	Number of Producers	Production Area (ha)
1990*	8	313	1037
1992*	23	1780	6077
1994*	20	1690	5196
1996*	37	4039	16000
1998*	65	8302	25303
1999*	92	12435	44552
2000**	95	18385	59985
2001**	98	15795	111324
2002**	147	12428	89826
2003**	176	13044	103190
2004**	174	9314	162193

processing, storing, packing, transporting and marketing organic products is 236 and all of these are registered by MARA. [6].

As seen in Table 1, there has been a steady increase in organic agriculture in terms of products, producers and area in Turkey from the beginning in 1990. While the number of organic products was 8 in 1990, it rose to 174 in 2004. The number of producers increased 30 fold and the production area increased 156 fold between the same years. In 2004, 9.314 producers were practising organic agriculture on an area of 162.193 ha. In 2004, organic agriculture area per producer was 17.4 ha.

Fruits comprise the major part of organic production (66%) in Turkey. Others are field crops (16%), vegetables (9%) and minor products (9%). Especially grapes, figs, apricots and hazelnuts have important production volumes [3].

All of the products produced organically are listed in Table 2. When Table 2 is analyzed, it can be seen that organic agriculture is practised in nearly all agricultural products. The largest organic product ranges are in fruits and vegetables.

The price of an organic product is generally determined by the “market price+premium approach” in Turkey. Price is determined usually at harvest time or at the beginning of the purchase and sale period. Organic product prices are generally 10-15 % more than conventional product prices [7].

Domestic sales of organic agricultural products in Turkey and developments in export: The nurturing of a domestic market is an important alternative solution for the healthy development of organic agriculture. However, lack of demand cannot be disregarded despite substantial

Table 2: Organic agricultural products which are produced commercially in Turkey [11]

Crops	
Hard-shelled fruits	Hazelnuts, Walnuts, Pistachios, Almonds, Peanuts, Chestnuts
Dried fruits	Grape, Apricot, Sliced Apricots Apricot, Plum, Fig, Apple, Cherry, Sour Cherry, Peary, Strawberry
Dried vegetables	Tomato, Mushroom
Fresh fruits and Vegetables	Apple, Figs, Strawberry, Plum, Pear, Sour Cherry, Cherry, Persimmon, Berry, Watermelon, Lemon, Orange, Grapefruit, Mandarin, Peach, Grape, Tomato, Pepper, Cucumber, Spinach, Leek, Cauliflower, Aubergine, Parsley, Carrot, Potato, Onion, Garlic, Celery, Old buffer, Pea
Pulses	Lentil, Chickpea, Haricot bean
Spices and medical-Perfumed plants	Bay, Thyme, Cumin, Sage, Rosemary, Linden, Fennel, Peppermint, Nettle
Industrial plants	Cotton, Poopy seed, Anise, Sugar beet
Oil seeds	Sunflower, Sesame
Cereals	Wheat, Rice, Corn, Oats, Barley
Others	Capers, Pine nut, Olive, Rose hip, Red Pepper, Hazelnut flour
Processed food products	
Frozen fruits And vegetables	Apricot, Strawberry, Cherry, Sour cherry, Berries, Plum, Onion, Courgette, Tomato, Pepper
Fruit juices And concentrates	Apricot puree, Pear juice concentrate, Sour cherry concentrate, Apple juice concentrate
Others	Olive oil, Boiled and pounded wheat, Pectin, Tomato puree, Jam, Wine, Embered pepper
Other agricultural Crops	Honey, Apricot kernel, Sour cherry kernel, Dried Rose, Rose Oil, Rose water, Mersin oil, Mersin water, Thyme oil, Lavender oil

effort. The opening of a few shops selling organic products in big cities and establishment of special stands in some supermarkets are positive developments, but on the other hand, it can be said that a domestic market is still not present [12]. Due to the demand deficiency, unconcioussness of consumers, lack of promotion, expensiveness of organic products and marketing problems, domestic market is limited in Turkey [3].

In Turkey, while sultana and fig were the only commercial organic agricultural products in 1985, the product range had expanded by 2001. Organic products produced and exported in importanat volumes were hard-shelled and dry fruits, frozen fruits and vegetables, damp fruits and vegetables, spices and pulses. Rose water, rose oil, olive oil and cotton were other products produced and exported.

Table 3: Organic product export values of Turkey according to countries (in tonnes) [6]

Years	Germany	UK	Netherlands	Switzerland	Italy	Others	Total
1998	3610	593	1222	1400	29	1762	8616
1999	3841	1447	1959	1354	183	3266	12050
2000	4022	1469	1811	1258	399	4170	13129
2001	6213	1716	1670	1311	905	5741	17556
2002	7629	2023	1517	1223	941	5850	19183
2003	7531	1867	3598	1155	1710	5222	21083
2004	5238	1710	1677	822	1381	5265	16093
2004 (%)	32.6	10.6	10.4	5.1	8.6	32.7	100.0

Turkey exports to a total of 37 countries with the EU countries being the most important export markets. The countries of northern Europe, USA, Canada and Japan are potential markets which draw attention [11].

When we analyse the total export and distribution of organic products according to countries (Table 3), it is seen that Germany is the biggest importer country with a share of 32,6% in 2004. The countries following Germany were respectively the UK, Netherlands, Italy and Switzerland [6].

RESULTS AND DISCUSSION

Organic agriculture is expanding daily in Turkey. However it is underdeveloped when compared with European countries. Agricultural land in Turkey is not very contaminated, so changing over organic agriculture is relatively easier. Furthermore, Turkey has a wealthy flora and in this respect Turkey is well placed for the development of organic agriculture.

To create a supportive environment, government should develop agricultural policies encouraging organic agriculture. For example, certain inputs could be supported and credits with special conditions could be allocated to producers practising organic agriculture.

Currently, the organization of organic producers is inadequate at the local and regional level. Producers should be more organized according to products and location on a local and regional basis.

Organic agriculture is a production system requiring 2 or 3 times more man labor when compared with conventional agriculture [7]. Turkey has high unemployment, a large rural population and one-third of Turkey's population is working in the agriculture sector, for these reasons organic agriculture is favorable for Turkey.

Inputs used in organic production are generally hard to obtain. For example, organic fertilizers in markets are scarce and expensive. Organic fertilizers in Turkey are generally imported from abroad. Therefore, organic fertilizer production should be increased in Turkey. In this way, a reduction in both production costs and prices should occur.

Currently, Turkish farmers have inadequate knowledge about organic agriculture. This education deficiency should be addressed rapidly. Agricultural Provincial Directorates and Agricultural District Directorates have this responsibility. Producers state that they do not meaningfully benefit from current courses. These institutions should inform producers about organic agriculture. For example, they could organize workshops of 1 or 2 days.

It is not generally understood by the growers that organic products have positive effects for human health and for the protection of natural sources. On this account, government and private institutions should explain the contributions of organic products to human health and environment. Organic agriculture potential is not appreciated and fostered enough in Turkey and consequently there is demand deficiency. A change in peoples' inclination to purchase organic products will encourage development of the domestic market for organic products. In this way, some organic production will be redirected to internal demand.

In parallel, book keeping by producers should be encouraged. Keeping books should be supported by the relevant institutions. It would then be easier to conduct research about organic products of economic importance.

Today, countries all over the world are making efforts to increase their organic production, accelerate related studies and develop legislations. Laws now oblige the use of organic products in infant food in USA for children of 0-2 years old and in Germany for children of 2-6 years old. In EU countries similar decisions were taken place for 0-5 years old children. In EU countries 40% of agricultural production is planned to be turned to organic production. Sweden has made laws for allocating 10% of her current agricultural land to organic production. In addition, Austria aims to raise its proportion of organic agricultural production of total agricultural production to 25% in the coming five years. While these developments are occurring, Turkey having suitable land and rich flora, should rapidly develop an organic production plan. This would enable Turkey to direct her production to the quantities and varieties needed, if she wants to be a

substantial shareholder in the organic product market which is enlarging year to year.

ACKNOWLEDGEMENTS

The authors thank Gregory T. Sullivan of Ondokuz Mayıs University in Samsun, Turkey for his proofreading of this manuscript.

REFERENCES

1. IFOAM, 2006. www.ifoam.org
2. Yussefi, M. and H. Willer, (Eds.), 2005. *The World of Organic Agriculture: Statistics and Emerging Trends 2005*, Germany, IFOAM Publications.
3. Demiryürek, K., 2004. Organic Agriculture and Organic Hazelnut Potential of Black Sea Region, Organic Hazelnut and Tea Potential in the Black Sea Region Symposium, Samsun, pp: 1-2. (in Turkish).
4. Rehber, E. and S. Turan,, 2002. Prospects and Challenges for Developing countries in Trade and Production of Organic Food and Fibers: The Case of Turkey, *British Food Journal*, Volume: 104 Issue: 3/4/5, pp: 371-390.
5. Dabbert, S., A.M. Haring and R. Zanoli, 2004. *Organic Farming*, Zed Books Ltd., London.
6. MARA, 2006. www.tarim.gov.tr
7. Demirci, R., A. Erkuş, H. Tanrıvermiş, E. Gündoğmuş, N. Parlıtı and H. Özüdoğru, 2002. Economic Course and Future of Agricultural Crop Production in Turkey: Debate of Forefront Research, Black Sea Region Agricultural Production and Marketing Symposium, October, 15-16, 1999, Black Sea Agricultural Research Institute Publications, Samsun, pp: 197- 210 (in Turkish).
8. REGA, 2004. www.rega.com.tr
9. Bülbül, M. and H. Tanrıvermiş, 1999. Economic Structure of Organic and Conventional Hazelnut Production and Export Potential in Turkey, Black Sea Region Agricultural Production and Marketing Symposium, October 15-16, 1999, Black Sea Agricultural Research Institute Publications, Samsun, pp: 144-156 (in Turkish).
10. Güzel, T., 2001. Facilities in the Development of Organic Agricultural Products and Export in Turkey, in *World. Istanbul Chamber of Commerce*, Publication No: 2001-14 Istanbul (in Turkish).
11. IGEME, 2006. www.igeme.org.tr
12. Kayahan, S., 2001. Development of Domestic Market in Organic Agriculture, Second Organic Agriculture Symposium of Turkey, November 14-16, 2001, Antalya, pp: 24-29 (in Turkish).