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# Agricultural SectorProfile of Turkey in the World

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**Abstract**

Turkey has the 18th largest economy in the world with $820 billion Gross Domestic Product (GDP). At the same time Turkey's agricultural economy is the 8th largest in the world. The aim of this study is to determine agricultural sector profile of Turkey in the world. The data of the study were obtained from FAO (Food and Agriculture Organisation), WBG (World Bank Group), Turkish Statistical Institute and Ministry of Food, Agriculture and Livestock. According to the results of this study, about 50.6% of the country consist of agricultural lands and 14.6% forest. The agricultural land is around 38,9 million hectares that consist of 54.9% arable lands and 45.1% permanent lands as per 2012. Agricultural production value of Turkey is about 41 billion $. In the agricultural sector, the rate of crop production is 71.3%, animal product rate is 28.7%. 23.7% of Turkey's population is employed in agriculture. Turkey's female labour in agriculture is the 3th largest in the world. Turkey is a major producer of wheat, sugar beet, milk, whole fresh cow, tomatoes, barley, potatoes, grapes, maize, watermelons and apple. Apricots, cherries, hazelnuts with shell, figs, quinces and poppy seed are the most produced agricultural commodities by Turkey in the world. Turkey's top three agricultural export products are respectively flour of wheat, tomatoes, lemons and limes. In addition to this, wheat, soybeans and sunflower seed are repectively Turkey's top three agricultural import products. The results of this study will provide important information to Turkey's agricultural sector.

**Key words:** Turkey, Agriculture, Economy, World

## Introduction

Turkey generally has a mountainous land structure. 55.9 % of the land in Turkey above 1000 mt and 62.5 % has a slope more than 15%. Turkey is under the impact of the winds coming from Black Sea and North and under the sea impact of which the wind brings. But the impact of sea can not pass over the range of mountains on the north and south. For this reason, there is a strict tie between climatic characteristics and land forms of Turkey. Land structure and climatic characteristics of Turkey provided different geographical region and microclimate to be formed. There is a positive relation between land use and land structure of geographical regions, climatic characteristics in Turkey. So, forestry in humid regions, livestock in high, mountainous and arid regions and vegetative production in every regions can be done in Turkey. These characteristics make it possible to produce spesific agricultural product in different ecologic regions (Armağan, 2008).

The importance of agriculture in Turkish economy is still high in terms of meeting food need, supplying input to industry sector, export and employment opportunities although it is
decreasing proportionally. While the share of agriculture is 42,8% in gross national product (GNP) in the year when Turkey is established, it has decreased proportionally as 36% in 1970, 25% in 1980, 16% in 1990, 13,5% in 2000, 12.6%in 2003 and finally 7.4% in 2013. Decreasing of agriculture sector share in Turkey is the result of giving more importance to the developments in industrialisation and service sectors (Miran, 2005; Anonymous, 2013). Turkey has the 18th largest economy in the world with $820 billion Gross Domestic Product (GDP). At the same time Turkey's agricultural economy is the 8th largest in the World. About 50.6% of the country consist of agricultural lands and 14.6% forest. The agricultural land is around 38,9 million hectares that consist of 54.9% arable lands and 45.1% permanent lands

as per 2012. Agricultural production value of Turkey is about 41 billion $. In the agricultural sector, the rate of crop production is 71.3%, animal product rate is 28.7% (Anonymous, 2012b; Anonymous, 2012c; Anonymous, 2013b). The aim of this study is to determine agricultural sector profile of Turkey in the world.

**Material and Method**

The data of the study were obtained from FAO, WBG, Turkish Statistical Institute and Ministry of Food, Agriculture and Livestock. The data belong to the year 1995-2012. Descriptive statics are used in analyzing the data.

**Results**

**Agricultural products and trade**

The table below shows top five commodities production quantity of Turkey in the world. Apricots, cherries, hazelnuts,with shell, figs, quinces and poppy seed are the most produced commodities by Turkey in the world. With these commodities, the production quantity of Turkey is the highest in the world. Other than these commodities, Turkey's production quantity is ranked as second in milk (whole fresh sheep), strawberries, leeks, cherries, honey and chestnut. The third commodities which are produced most by Turkey in the world are watermelons, chillies and peppers, cucumbers, melons, chick peas etc. As we can see in the table below, 34 commodities produced by Turkey are in first five in the world. Only 3 of them are animal products and they are milk, honey and beewax. The table also shows that Turkey's the most produced commodities are vegetal. This also shows that Turkey's production level is very low in animal products (Table 1).

**Table 1:** Top five commodities production quantity by Turkey in the world (2011)

| Commodity | Production (Million Ton ) | Order of World's Commodity |
|---|---|---|
| Apricots | 676138 | 1 |
| Cherries | 438550 | 1 |
| Hazelnuts, with shell | 430000 | 1 |
| Figs | 260508 | 1 |
| Quinces | 127767 | 1 |
| Poppy seed | 45077 | 1 |
| Milk, whole fresh sheep | 892822 | 2 |
| Strawberries | 302416 | 2 |
| Leeks, other alliaceous vegetables | 246144 | 2 |
| Cherries, sour | 182234 | 2 |
| Honey, natural | 94245 | 2 |
| Chestnut | 60270 | 2 |
| Watermelons | 3864489 | 3 |
| Chillies and peppers, green | 1975269 | 3 |
| Cucumbers and gherkins | 1749174 | 3 |
| Melons, other (inc.cantaloupes) | 1647988 | 3 |
| Chick peas | 487477 | 3 |
| Spices, nes | 113783 | 3 |
| Pistachios | 112000 | 3 |
| Vetches | 107844 | 3 |
| Tomatoes | 11003433 | 4 |
| Apples | 2680075 | 4 |
| Olives | 1750000 | 4 |
| Beans, green | 614948 | 4 |
| Lentils | 405952 | 4 |
| Spinach | 221632 | 4 |
| Walnuts, with shell | 183240 | 4 |
| Beeswax | 4235 | 4 |
| Sugar beet | 16126489 | 5 |
| Tangerines, mandarins, clementines, satsumas | 872251 | 5 |
| Eggplants (aubergines) | 821770 | 5 |
| Tea | 221600 | 5 |
| Fruit, stone nes | 17332 | 5 |
| Vanilla | 287 | 5 |

Reference: Anonymous, 2012a

According to table 2, wheat is the most produced commodity in Turkey. Second commodity is sugar beet, third one ise milk, whole fresh cow. with these commodities, only milk (whole fresh cow) is animal product, all others are vegetal.

**Table 2:** Top ten commodities production quantitiy in Turkey (2011)

| | Commodity | Quantity [t] |
|---|---|---|
| **1** | Wheat | 21800000 |
| **2** | Sugar beet | 16126489 |
| **3** | Milk, whole fresh cow | 13802428 |
| **4** | Tomatoes | 11003433 |
| **5** | Barley | 7600000 |
| **6** | Potatoes | 4613071 |
| **7** | Grapes | 4296351 |
| **8** | Maize | 4200000 |
| **9** | Watermelons | 3864489 |
| **10** | Apples | 2680075 |

Reference Anonymous, 2012a

The table below shows top ten commodities import quantity in Turkey. Wheat is the most imported commodity while soybeans is second, sunflower seed is third. As we can see in the table, there are not any animal products imported in top ten.

**Table 3:** Top ten commodities import quantity in Turkey (2011)

| | Commodity | Quantity [t] |
|---|---|---|
| **1** | Wheat | 4754682 |
| **2** | Soybeans | 1297770 |
| **3** | Sunflower seed | 905686 |
| **4** | Cotton lint | 603950 |
| **5** | Sunflower Cake | 568534 |
| **6** | Cake of Soybeans | 541644 |
| **7** | Sunflower oil | 469963 |
| **8** | Bran of Wheat | 458429 |
| **9** | Palm oil | 429248 |
| **10** | Maize | 381293 |

Reference Anonymous, 2012a

In the table 4, flour of wheat is the most exported commodity. Tomatoes, lemons and limes, tangerines and oranges follow flour wheat. Chicken meat is the only animal product among them and it is ranked as 10th.

**Table 4:** Top ten commodities export quantity in Turkey (2011)

| | Commodity | Quantity [t] |
|---|---|---|
| **1** | Flour of Wheat | 2062730 |
| **2** | Tomatoes | 576573 |
| **3** | Lemons and limes | 487003 |
| **4** | Tangerines, mandarins, clem. | 470929 |
| **5** | Oranges | 366331 |
| **6** | Macaroni | 339401 |
| **7** | Pastry | 283620 |
| **8** | Food Prep Nes | 260149 |
| **9** | Grapes | 239577 |
| **10** | Chicken meat | 23414 |

Reference Anonymous, 2012a

The Table 5 shows us top ten countries where we import commodities. The USA is leading about this category. The value of the commodities which are imported from the USA is nearly 2.5 billion $. Ukraine is second, Russion Federation is third in this table.

**Table 5:** Top ten partners import value (2011)

| | Partner | Value [1000 USD] |
|---|---|---|
| **1** | United States of America | 2487518 |
| **2** | Ukraine | 1177765 |
| **3** | Russian Federation | 801159 |
| **4** | Indonesia | 628128 |
| **5** | Malaysia | 613222 |
| **6** | Brazil | 612043 |
| **7** | Germany | 536014 |
| **8** | Poland | 368735 |
| **9** | Bulgaria | 361924 |
| **10** | Argentina | 354614 |

Reference Anonymous, 2012b

In the Table 6, we can see top ten countries where we export commodities. Iraq is leading about this category. The value of the commodities which are exported to Iraq is nearly 2.3 billion $. Secondly, Turkey exports commodities to Germany mostly. Russian Federation is the third with the value of nearly 1 billion$.

**Table 6:** Top ten partners export value (2011)

| | Partner | Value [1000 USD] |
|---|---|---|
| **1** | Iraq | 2366298 |
| **2** | Germany | 1226205 |
| **3** | Russian Federation | 1068680 |
| **4** | Italy | 570761 |
| **5** | France | 481323 |
| **6** | United States of America | 439451 |
| **7** | United Kingdom | 405589 |
| **8** | Saudi Arabia | 369514 |
| **9** | Netherlands | 320527 |
| **10** | Iran (Islamic Republic of) | 306492 |

Reference Anonymous, 2012b

According to Table 7, the inland fishery and aquaculture production of Turkey has not changed much between the period of 1995-2010. When we have a look at the marine production, we can see declines in 2000 and 2005.

**Table 7:** Fisheries and aquaculture production

| | Production [1000 t] | | | |
|---|---|---|---|---|
| | **1995** | **2000** | **2005** | **2010** |
| **Inland** | 45 | 43 | 46 | 40 |
| **Marine** | 586 | 461 | 380 | 446 |
| **Total** | 653 | 582 | 546 | 654 |

Reference: Anonymous, 2012b

While capture fishery production in Turkey is generally decreasing from 1995 to 2010, we can see a remarkable raise with aquaculture Production between the period of 1995-2010 (Table 8).

**Table 8:** Capture and aquaculture production quantity

| | Production [1000 t] | | | |
|---|---|---|---|---|
| | **1995** | **2000** | **2005** | **2010** |
| **Capture fishery** | 631 | 503 | 426 | 486 |
| **Aquaculture** | 22 | 79 | 120 | 168 |

Reference: Anonymous, 2012b

While the import value of fishery products is 51 million $ in 1995, it has reached to 242 million $ by the year 2010 (Table: 9). Between the period of 1995-2010, export value is also on the rise as 87 million in 1995, 357 million $ in 2010.

**Table 9:** Trade values of fishery products

| | Value [Millions of USD] | | | |
|---|---|---|---|---|
| | **1995** | **2000** | **2005** | **2010** |
| **Imports** | 51 | 52 | 101 | 242 |
| **Exports** | 87 | 91 | 243 | 357 |

Reference: Anonymous, 2012b

According to Table 10, the production of roundwood decreased in the period of 1998-2003. But in 2008 and 2010 we can see raises. Import of roundwood had a sharp decrease in 2013 (-12.29%). When we have a look at the export value, we can olsa see a sharp decrease in 2008 (-41.1%).

**Table 10:** Evolution of roundwood production and trade

| | Volume [1000 CUM] | | | | Annual growth rate [%] | | |
|---|---|---|---|---|---|---|---|
| | **1998** | **2003** | **2008** | **2013** | **1998-2003** | **2003-2008** | **2008-2013** |
| Production | 17668.00 | 15810.00 | 19420.00 | 21141.44 | -2.2 | 4.2 | 1.71 |
| Imports | 1346.00 | 1401.00 | 1349.00 | 700.10 | 0.8 | -0.75 | -12.29 |
| Exports | 93.00 | 68.57 | 4.86 | 11.30 | -5.91 | -41.1 | 18.38 |

Reference Anonymous, 2012b

**Land use and agricultural inputs**

The table 11 shows the evoluation of land use in Turkey. While arable lands decrease, permanent crops and forest cover increase between the period of 1996-2011.

**Table 11:** Evolution of land use in Turkey (2011)

| | Area [Millions of ha] | | | | Annual growth rate [%] |
|---|---|---|---|---|---|
| | 1996 | 2001 | 2006 | 2011 | 1996-2011 |
| Total area | 76.96 | 76.96 | 76.96 | 76.96 | - |
| Arable land | 24.51 | 23.80 | 22.98 | 20.54 | -3.97 |
| Permanent crops | 2.47 | 2.55 | 2.90 | 3.09 | 0.62 |
| Forest cover | 9.96 | 10.26 | 10.86 | 11.45 | 1.49 |

Reference Anonymous, 2012b

In table 12, the number of combine harvester (per 1000 ha) has not change much between 1993-2008. But the number of agricultural tractors increases gradually. While in 1993, the number of agricultural tractors per 1000 ha. is 27.1, in 2008 it increases up to 42.97.

**Table 12:** Machinery usage

| | Machines [n/1000 ha of arable land and land under permanent crops] | | | |
|---|---|---|---|---|
| | 1993 | 1998 | 2003 | 2008 |
| Combine harvester/treshers | 0.42 | 0.47 | 0.45 | 0.53 |
| Agricultural tractors | 27.10 | 33.46 | 37.79 | 42.97 |

Reference Anonymous, 2012b

The table 13 shows pesticide import and export values. The values have fluctuating structure. The import value in 2002 has decreased comparison to 1997. When we take export values into consideration, we can also see a decrease in 2002 but increases in 2007 and 2012.

**Table 13:** Pesticide trade

| | **Value [Millions of USD]** | | | |
|---|---|---|---|---|
| | **1997** | **2002** | **2007** | **2012** |
| Imports | 119.74 | 85.61 | 224.36 | 331.56 |
| Exports | 20.10 | 18.03 | 48.47 | 76.04 |

Reference Anonymous, 2012b

**Population**

Rural population in Turkey constitutes only 1% of total world rural population. As we can see in the table 14, rural population share is decreasing periodically. While it was 36.32% in 1998, it has decrased to 29% in 2013. Labour force in agriculture is also on the decline. It was 43.34% in 1998 but in 2013 it is only 30.14%. Contrary to this, female labour in agriculture is increasing

**Table 14:** Evolution of population and labour force composition ,in Turkey

| | Share [%] | | | | Annual growth rate [%] |
|---|---|---|---|---|---|
| | 1998 | 2003 | 2008 | 2013 | 1998-2013 |
| Rural population [% of total population] | 36.32 | 33.72 | 31.28 | 29.00 | -7.32 |
| Labour force in agriculture [% of total labour force] | 43.34 | 38.98 | 34.09 | 30.14 | -13,2 |
| Females [%of labour force in agriculture] | 49.10 | 51.46 | 51.77 | 53.98 | 4.88 |

Reference: Anonymous, 2012a

**Conclusion**

Agricultural production value of Turkey is about 41 billion $. In the agricultural sector, the rate of crop production is 71.3%, animal product rate is 28.7%.23.7% of Turkey's population is employed in agriculture. Turkey's female labour in agriculture is the 3th largest in the world. Turkey is a major producer of wheat, sugar beet, milk, whole fresh cow, tomatoes, barley, potatoes, grapes, maize, watermelons and apple. Apricots, cherries, hazelnuts with shell, figs, quinces and poppy seed are the most produced agricultural commodities of Turkey in the world. Turkey's top three agricultural export products are respectively flour of wheat,tomatoes, lemons and limes. In addition to this, wheat, soybeans and sunflower seed are respectively Turkey's top three agricultural import products. The value of the commodities which are imported from the USA is nearly 2.5 billion $. Ukraine is second, Russion Federation is third The value of the commodities which are exported to Iraq is nearly 2.3 billion $ Secondly, Turkey exports commodities to Germany mostly. Russian Federation is the third with the value of nearly 1 billion $. While arable lands decrease, permanent crops and forest cover increase between the period of 1996-2013. Rural population share is decreasing periodically. Female labour in agriculture is increasingin Turkey. Turkey has a big share in world agricultural sector. We can make a healtier structure to make Turkey's agriculture stonger by evaluating organic agriculture development, alternative product

development, agricultural production planning, collaboration in education, agriculture and rural development policies, industry-university-agriculture collaboration, efficiency of getting a cooperative, agro-industry development and modern technology usage together.

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