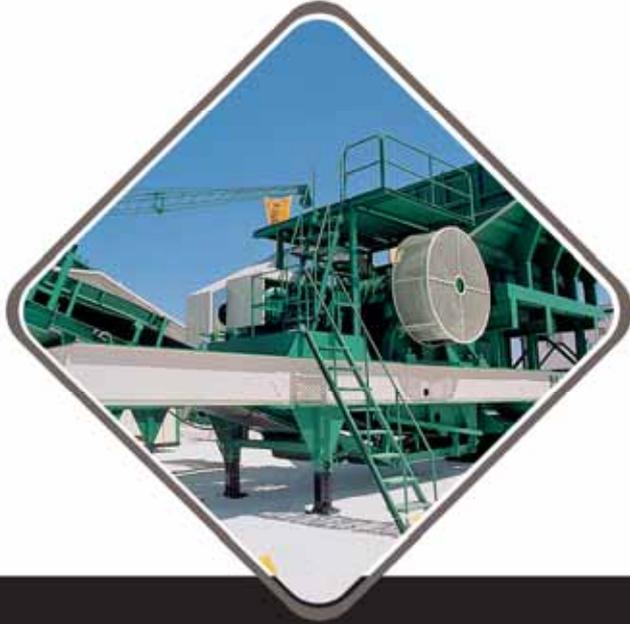




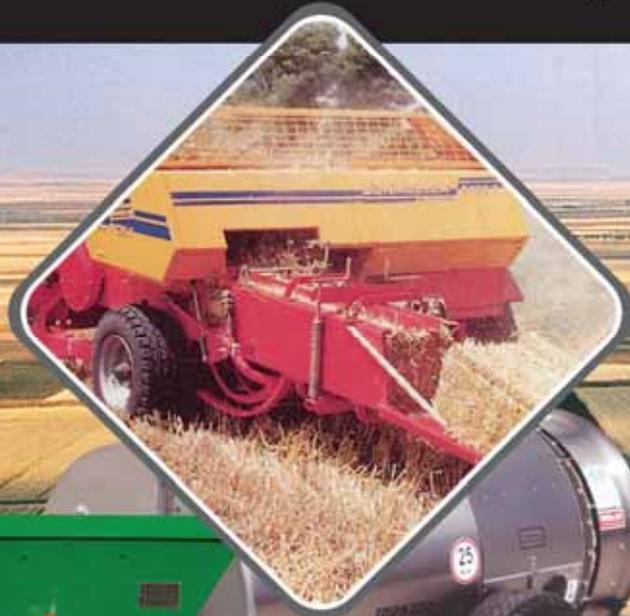
REPUBLIC OF TURKEY  
MINISTRY OF ECONOMY



INDUSTRY



# AGRICULTURAL MACHINERY AND EQUIPMENTS



TURKEY

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# AGRICULTURAL MACHINERY AND EQUIPMENTS

## DESCRIPTION OF THE SECTOR

Agricultural machinery and equipments sector is a sub-sector of the manufacturing sector. These products, which are also called agricultural mechanization equipments, form an important input group of agricultural production that increases the productivity of the labor force, decreases the costs, and raises the production quality and fertility by providing the usage of modern production technologies and the completion of the processes at the right time according to the needs.

The customs tariff statistical position numbers, which belong to the agricultural machines, and equipments are listed below:

### *Customs Tariff Statistical Position Numbers of Agricultural Machines&Equipments*

HS6	Product Name
<b>Tractors</b>	
8701.10	Pedestrian controlled tractors
8701.90	Wheeled tractors nes
8716.20	Trailers for agricultural purposes
<b>Soil Cultivation Machines</b>	
8432.10	Ploughs
8432.21	Disc harrows
8432.29	Scarifiers, cultivators, weeders and hoes
8432.80	Rollers,stone-removers&other soil preparation or cultivation machinery
<b>Seeders, planters and transplanters</b>	
8432.30	Seeders, planters and transplanters
8432.40	Manure spreaders and fertiliser distributors
<b>Harvesting/threshing machinery,hay mower,etc</b>	
8433.11	Mowers, powered, lawn, with horizontal cutting device
8433.19	Mowers, powered, lawn, nes
8433.20	Mowers for hay etc including cutter bars for tractor mounting
8433.30	Hay tedders and rakes and other haymaking machinery
8433.40	Straw or fodder balers, including pick-up balers
8433.51	Combine harvester-threshers
8433.52	Threshing machinery nes
8433.53	Root or tuber harvesting machines
8433.59	Harvesting machinery nes
8433.60	Machines for cleaning, sorting or grading eggs, fruit or other produce
<b>Milking machines and dairy machinery</b>	
8434.10	Milking machines
8436.10	Machinery for preparing animal feeding stuffs
8436.21	Poultry incubators and brooders
8436.29	Poultry-keeping machinery, nes
8436.80	Agri/hortic/forestry bee-keeping mach nes inc germination plant
<b>Pest Control Machinery</b>	
8424.81	Mech appl for proj/disp o sprayg liquids o powders for agr o horticut

### Parts of Agricultural Machines and Equipments

8208.40	Knives and blades for agricultural, horticultural or forestry machines
8432.90	Parts for rollers and other soil preparation or cultivation machinery
8433.90	Parts of harvesting, threshing & other agricultural & mowing machinery
8434.90	Parts of milking machines and dairy machinery
8436.91	Parts of poultry-keeping machinery
8436.99	Parts of agr/hort/forest/bee-keeping machines inc pts of germinant plant

Resource: ITC-Trade Map ([www.trademap.org](http://www.trademap.org))

According to the Standard International Trade Classification Rev. 3 which is prepared by Statistics Office of UN, agricultural machines and equipment are listed as below:

### *Agricultural Machinery according to the SITC rev. 3*

721.11	Ploughs
721.12	Seeders, planters, transplanters; fertilizer distributors and manure spreaders (other than hand tools)
721.13	Scarifiers, cultivators, weeders, hoes and harrows (other than hand tools)
721.18	Other agricultural and horticultural or forestry machinery for soil preparation or cultivation; lawn and sports ground rollers
721.19	Parts of the machinery of subgroup 721.1
721.21	Mowers for lawns, parks or sports grounds
721.22	Combine harvester-threshers
721.23	Other harvesting and threshing machinery; mowers (other than those of heading 721.21)
721.26	Machines for cleaning, sorting or grading eggs, fruit or other agricultural produce
721.27	Machines for cleaning, sorting or grading seed, grain or dried leguminous vegetables (other than milling machinery of heading 727.11)
721.29	Parts of the machines of headings 721.21 through 721.26
721.31	Milking machines
721.38	Dairy machinery
721.39	Parts for milking machines and dairy machinery
721.91	Presses, crushers and similar machinery used in the manufacture of wine, cider, fruit juices or similar beverages
721.95	Poultry-keeping machinery; poultry incubators and brooders
721.96	Other agricultural, horticultural, forestry or bee-keeping machinery (including germination plant fitted with mechanical or thermal equipment)
721.98	Parts of the machinery of heading 721.91
721.99	Parts of the machinery of heading 721.98&721.96
722.41	Pedestrian-controlled tractors
722.49	Other wheeled tractors
786.21	Self-loading or self-unloading trailers and semi-trailers for agricultural purposes

Resource: UN Statistics Office, <http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=14>

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## **PRODUCTION**

Agricultural machinery sector is strongly related to both positive and negative events in the agriculture sector. That is why dealing with the agricultural machinery sector independently from the agriculture sector is not possible. In the planning of the machinery sector for agriculture, the targets that are determined for agricultural sector have to be considered. As in the other countries, agricultural sector is the base of the national economy in Turkey, too. According to the distribution of the 2011 employment statistics, approximately 26% of the total employment is in the agricultural sector. A strong agricultural machinery sector is developed as a result of that big sector.

By the end of the Southeast Anatolian Project (GAP), 1.8 million hectares of cultivated land can be irrigated. Such a big irrigated farmland means that agricultural production will be sufficient for all the Middle East. GAP, for which the government reserves 5 billion Dollars in the beginning of the year 2008, provides very significant opportunities for the future of Turkey's agricultural sector. After the completion of the project, the agricultural sector will have the opportunity to make large-scale investments and this will affect the development of the agricultural machinery sector in a positive way.

In Turkey, approximately 130 different machines and equipments are manufactured in agricultural machinery sector. The products manufactured are mainly as follows: Tractors, harvesters, pedestrian controlled tractors, mowers, powered, lawn, with horizontal cutting device, seeders, planters and transplanters, manure spreaders and fertiliser distributors, means and equipment for plant protection and irrigation, harvesters, threshers, dryers, machines and equipments for cleaning, distinguishing and processing, milking machines and other equipments for farm and garden usage.

The agricultural machinery sector is classified in two groups in Turkey as agricultural machines and equipment sector, and the tractor sector. In the machines and equipment sector, there are 1,000 producers and importers. On the other hand, 22 firms are active in tractor sector. The sector employs 20,000 people in Turkey.

## **FOREIGN TRADE OF TURKEY**

### **Export**

The export of the agricultural machinery and equipment sector, which decreased only in 2009 due to the global economic crisis between 2007 and 2011, has increased by 18% in 2011 compared to 2010 and reached 411 million Dollars.

The most important sub-products in 2011 are parts of harvesters+threshers (Code: 8433.90), poultry-keeping machinery, nes (Code: 8436.29), seeders, planters and transplanters (Code: 8432.30). The total export of the parts of the agricultural machines has been recorded as about 57 million Dollars in 2011.

**The Export of Agricultural Machines of Turkey (US\$ 1,000)**

HS6	Product Name	2009	2010	2011
8208.40	Knives and blades for agricultural, horticultural or forestry machines	332	624	733
8424.81	Mech appl for proj/disp o sprayg liquids o powders for agr o horticut	7.305	9.975	12.421
8432.10	Ploughs	7.181	7.076	10.772
8432.21	Disc harrows	2.153	1.989	4.172
8432.29	Scarifiers, cultivators, weeders and hoes	5.609	8.331	9.032
8432.30	Seeders, planters and transplanters	9.396	9.910	19.903
8432.40	Manure spreaders and fertiliser distributors	2.161	2.403	3.238
8432.80	Rollers,stone-removers&other soil preparation or cultivation machinery	2.002	1.737	3.262
8432.90	Parts for rollers and other soil preparation or cultivation machinery	6.431	8.082	12.594
8433.11	Mowers, powered, lawn, with horizontal cutting device	658	1.041	680
8433.19	Mowers, powered, lawn, nes	203	601	771
8433.20	Mowers for hay etc including cutter bars for tractor mounting	6.249	7.523	6.408
8433.30	Hay tedders and rakes and other haymaking machinery	678	784	1.183
8433.40	Straw or fodder balers, including pick-up balers	2.502	2.094	1.393
8433.51	Combine harvester-threshers	389	1.879	400
8433.52	Threshing machinery nes	10.502	11.283	4.117
8433.53	Root or tuber harvesting machines	831	972	1.171
8433.59	Harvesting machinery nes	7.096	5.218	2.323
8433.60	Machines for cleaning, sorting or grading eggs, fruit or other produce	603	655	1.753
8433.90	Parts of harvesting,threshing & other agricultural & mowing machinery	14.803	17.047	26.480
8434.10	Milking machinery	6.986	8.299	8.612
8434.90	Parts of milking machines and dairy machinery	2.352	2.786	3.998
8436.10	Machinery for preparing animal feeding stuffs	11.949	7.329	6.555
8436.21	Poultry incubators and brooders	943	2.422	2.875
8436.29	Poultry-keeping machinery, nes	13.486	20.042	25.810
8436.80	Agri/hortic/forestry bee-keeping mach nes inc germination plant	1.356	1.683	3.248
8436.91	Parts of poultry-keeping machinery	1.843	2.502	2.310
8436.99	Parts of agr/hort/forest/bee-keepg mach nes inc pts of germinant plant	4.120	4.211	11.374
<b>Total</b>		<b>130.117</b>	<b>148.495</b>	<b>187.589</b>

Resource: R.T. Ministry of Economy Data System

The major export partners of Turkey in agricultural machinery parts sector are Iraq, Sudan, Azerbaijan, Italy and France.

***The export countries of the sector (US\$ 1,000)***

Country	2009	2010	2011
1 Iraq	7.947	12.250	15.271
2 Sudan	5.906	6.163	14.963
3 Azerbaijan	6.097	7.085	14.852
4 Italy	6.313	8.354	13.254
5 France	6.684	7.174	12.247
6 Iran	8.106	13.840	12.101
7 Bulgaria	6.867	6.962	9.566
8 Romania	3.850	4.912	5.834
9 Algeria	999	3.697	5.681
10 Russian Federation	5.883	3.864	4.969
<b>First 10 Total</b>	<b>58.652</b>	<b>74.302</b>	<b>108.735</b>
11 Saudi Arabia	2.460	3.713	4.420
12 Egypt	2.352	3.118	4.366
13 Syria	3.983	5.219	3.637
14 Uzbekistan	2.170	2.535	3.396
15 U.S.A	1.977	2.473	3.203
16 T.R.N.C.	2.113	4.533	2.989
17 Morocco	11.958	10.817	2.915
18 Tunisia	1.789	2.681	2.694
19 Turkmenistan	988	1.781	2.614
20 Malaysia	2.932	1.418	2.341
First 20 Total	91.374	112.590	141.310
<b>Total</b>	<b>130.117</b>	<b>148.495</b>	<b>187.589</b>

Resource: R.T. Ministry of Economy Data System

The export of tractors, trailers and pedestrian controlled tractors has increased by 36.2% to 227 million Dollars, and after the economic crisis, the total exports has been recorded as 224 million Dollars in 2011.

***The Export of Tractors, Trailers and Pedestrian Controlled Tractors of Turkey (US\$ 1,000)***

HS6	Product Name	2009	2010	2011
8701.10	Pedestrian controlled tractors	2.534	2.932	2.632
8701.90	Wheeled tractors nes	178.699	195.428	219.413
8716.20	Trailers for agricultural purposes	1.842	1.771	1.469
<b>Total</b>		<b>183.075</b>	<b>200.131</b>	<b>223.514</b>

Resource: R.T. Ministry of Economy Data System

The major export partners of Turkey in tractors sector are the USA, Iraq, Italy, Morocco and Poland.

***The export countries of the sector (US\$ 1,000)***

Country		2009	2010	2011
1	U.S.A	61.922	64.737	38.050
2	Iraq	16.593	18.163	27.947
3	Italy	4.623	13.909	14.705
4	Morocco	24.444	11.901	14.217
5	Poland	2.088	5.016	13.972
6	South Africa	5.323	5.133	13.272
7	Chile	3.113	3.862	10.297
8	Paraguay	771	4.262	8.328
9	Australia	7.186	7.878	5.527
10	Portugal	1.075	3.126	4.558
<b>First 10 Total</b>		<b>58.652</b>	<b>127.138</b>	<b>137.987</b>
11	Thailand	1.089	4.152	4.421
12	Spain	1.640	4.463	3.825
13	Indonesia	1.105	2.500	3.560
14	Uruguay	1.138	2.475	3.290
15	Philippines	1.443	1.583	3.151
16	Germany	535	572	3.133
17	Argentina	1.751	2.199	3.035
18	France	1.737	3.529	3.005
19	Algeria	864		2.691
20	Ecuador	1.525	2.792	2.501
<b>First 20 Total</b>		<b>139.965</b>	<b>162.252</b>	<b>183.485</b>
<b>Total</b>		<b>183.075</b>	<b>200.131</b>	<b>223.514</b>

Resource: R.T. Ministry of Economy Data System

## Import

While the Turkish imports in the agricultural machinery and equipment sector were 131 million Dollars in 2009, it increased by 63% to 387 million Dollars in 2011 compared to the previous year. The most imported sub-product is harvesters (Code: 8433.51). The share of this product's is 24% in total imports.

***The Import of Agricultural Machines of Turkey (US\$ 1,000)***

HS6	Product Name	2009	2010	2011
8208.40	Knives and blades for agricultural, horticultural or forestry machines	332	2.410	3.349
8424.81	Mech appl for proj/disp o sprayg liquids o powders for agr o horticut	7.305	23.836	42.310
8432.10	Ploughs	7.181	66	148
8432.21	Disc harrows	2.153	313	324
8432.29	Scarifiers, cultivators, weeders and hoes	5.609	18.925	31.622
8432.30	Seeders, planters and transplanters	9.396	7.450	9.629
8432.40	Manure spreaders and fertiliser distributors	2.161	570	719
8432.80	Rollers,stone-removers&other soil preparation or cultivation machinery	2.002	769	1.924
8432.90	Parts for rollers and other soil preparation or cultivation machinery	6.431	4.317	6.718
8433.11	Mowers, powered, lawn, with horizontal cutting device	658	9.034	11.250
8433.19	Mowers, powered, lawn, nes	203	1.548	1.776
8433.20	Mowers for hay etc including cutter bars for tractor mounting	6.249	4.833	8.406
8433.30	Hay tedders and rakes and other haymaking machinery	678	154	505
8433.40	Straw or fodder balers, including pick-up balers	2.502	6.812	10.752
8433.51	Combine harvester-threshers	389	58.485	92.790
8433.52	Threshing machinery nes	10.502	3.229	939
8433.53	Root or tuber harvesting machines	831	3.708	3.141
8433.59	Harvesting machinery nes	7.096	11.033	51.888
8433.60	Machines for cleaning, sorting or grading eggs, fruit or other produce	603	14.712	15.716
8433.90	Parts of harvesting,threshing & other agricultural & mowing machinery	14.803	8.691	19.722
8434.10	Milking machinery	6.986	6.080	12.063
8434.90	Parts of milking machines and dairy machinery	2.352	3.493	11.543
8436.10	Machinery for preparing animal feeding stuffs	11.949	6.142	8.873
8436.21	Poultry incubators and brooders	943	10.522	9.782
8436.29	Poultry-keeping machinery,	13.486	20.474	19.433

	nes			
8436.80	Agri/hortic/forestry bee-keeping mach nes inc germination plant	1.356	3.451	4.658
8436.91	Parts of poultry-keeping machinery	1.843	2.437	1.810
8436.99	Parts of agr/hort/forest/bee-keepg mach nes inc pts of germinant plant	4.120	3.112	4.886
<b>Total</b>		<b>130.569</b>	<b>236.606</b>	<b>386.675</b>

Resource: R.T. Ministry of Economy Data System

The major import partners of Turkey in this sector are Italy, Poland, the USA, Germany and China.

***The import countries of the sector (1000 Dollars)***

	Country	2009	2010	2011
1	Italy	29.461	50.185	68.181
2	Poland	24.198	49.070	67.587
3	U.S.A	7.885	17.884	52.795
4	Germany	13.731	32.454	52.350
5	China	5.703	16.926	30.561
6	Netherlands	10.843	19.609	21.349
7	Belgium	12.832	11.023	20.910
8	Saudi Arabia	38	44	13.177
9	France	3.891	5.493	12.809
10	Israel	3.016	4.826	7.427
<b>First 10 Total</b>		<b>58.652</b>	<b>111.598</b>	<b>207.514</b>
11	Spain	2.345	5.773	5.855
12	Sweden	1.330	1.574	5.680
13	England	2.685	6.363	4.668
14	Austria	1.804	1.935	3.922
15	Brazil	342	974	2.370
16	Denmark	537	2.925	1.744
17	Mexico	695	663	1.713
18	India	271	488	1.184
19	Syria		32	1.015
20	Greece	309	872	1.006
<b>First 20 Total</b>		<b>121.915</b>	<b>229.113</b>	<b>376.302</b>
<b>Total</b>		<b>130.569</b>	<b>236.606</b>	<b>386.675</b>

Resource: R.T. Ministry of Economy Data System

In 2009, Turkey imported tractors, trailers and pedestrian controlled tractors at a value of 91 million Dollars with a 44% rate. However, after 2009, the import of Turkey continuously increased and, reached to 351 million Dollars with a 74% increase in 2011 compared to the previous year.

***The Import of Tractors, Trailers and Pedestrian Controlled Tractors of Turkey (US\$ 1,000)***

HS6	Product Name	2009	2010	2011
8701.10	Pedestrian controlled tractors	663	1.797	5.262
8701.90	Wheeled tractors nes	90.800	200.090	345.233
8716.20	Trailers for agricultural purposes	18	178	202
<b>Total</b>		<b>91.482</b>	<b>202.065</b>	<b>350.697</b>

Resource: R.T. Ministry of Economy Data System

Italy is the first country among the countries from which Turkey imported tractors, trailers and pedestrian controlled tractors with a share of 27%. It is followed by India, France and Germany respectively.

***The import countries of the sector (US\$ 1,000)***

	Country	2009	2010	2011
1	Italy	34.167	38.420	93.972
2	India	15.052	51.289	79.768
3	France	7.689	26.908	36.638
4	Germany	7.752	23.671	28.660
5	South Korea	5.926	16.430	25.057
6	U.S.A	1.222	5.700	23.792
7	England	4.521	13.382	18.184
8	China	1.171	3.192	10.314
9	Mexico	6.422	13.153	10.194
10	Japan	4.668	3.693	9.223
<b>First 10 Total</b>		<b>58.652</b>	<b>88.589</b>	<b>195.839</b>
11	Austria	2.303	4.834	8.883
12	Finland	107	657	3.668
13	Czech Republic			831
14	Spain	195	200	741
15	Iraq		146	204
16	Slovenia		121	160
17	Morocco			155
18	Croatia	62	53	111
19	Poland	98	153	79
20	Netherlands	19	62	61
<b>First 20 Total</b>		<b>91.373</b>	<b>202.065</b>	<b>350.697</b>
<b>Total</b>		<b>91.482</b>	<b>202.065</b>	<b>350.697</b>

Resource: R.T. Ministry of Economy Data System

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## WORLD TRADE

### World Production and Consumption

World agricultural production is expected to increase regularly for the next decade but at a lower rate than the previous decades. Together with the increase at incomes and trade, consumption per capita is also increasing. Increase of local production, decrease of costs as a consequence of transportation and product delivery systems' working more efficiently, and also consumption changes related to urbanization and nourishment changes are the factors that contribute to this change at developing countries. In these countries, stock raising and feeds are concentrated on compared to food based grain production. In developed countries, however, concerns related to foods' properties and qualities have replaced the concerns for finding food products.

Developments in world agriculture market affect developing countries. Since production capacity and infrastructure investments cause the production, notably uncultivated agricultural products, to move from developed countries to developing countries, this tendency is expected to increase in the next years. Reforms in the agriculture policies in developing countries affect the production's quantity and result in a change in the qualification of support given to agricultural production.

The general development rate in developing countries' production is more than developed countries'; however, the least developed countries' exports for basic food products are expected to increase explicitly. In these countries, the increase in productivity falls behind the population increase and this leads to more dependency on world markets for food safety and being subject to fluctuations in international prices.

The main uncertainties that may affect the world agriculture markets' future are production shocks dependent to climate conditions, general tendency in energy prices, investment into bio-fuel capacity, economical development perspectives and possible developments in agriculture policies in the future. World agricultural markets' future is also strictly dependent to economical developments in the world's three major agricultural producers, which are Brazil, China and India.

Important increases at food prices worldwide have occurred since the midst of 2007. Developing countries whose income levels are low are affected mostly from these increases, which are also named as a food crisis. In some African and Asian countries whose citizens reserve  $\frac{3}{4}$  of their incomes to food expenditures, the food prices doubled compared to the costs in the previous months.

Besides the drought worldwide, two important developments in world agriculture in the last years also have an effect on these price increases. The first of them is agricultural production for fuel, which has begun to be widespread in world agriculture, and the other is ecological agriculture practices.

The use of a product, which is named as bio-diesel and generated by reacting oils extracted from fatty seed plants like canola, sunflower, soybean, safflower, cottonseed, and palm with a short-chained alcohol (methanol or ethanol) accompanied with a catalysor, as a fuel-oil purely or by mixing with a petrol-based diesel at certain ratios, is a spreading worldwide.

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Every year more agricultural lands are dedicated to the production of bio-diesel, which is considered as an important alternative to fossil fuels. In this respect, agricultural production for fuel, which is also declared as a significant danger for food safety by United Nations Food and Agriculture Organization, affected the world food market dramatically.

Ecological agriculture practices, in which additives like chemical fertilizers, disinfection and hormones are not used for production and are aimed to protect the soil quality in the long term, also affected the world agriculture market negatively regarding consumers.

The spreading of ecological agriculture which is more costly than conventional production methods and can give low product per unit land, even though not that much as fuel-oriented agriculture does, increased the prices by affecting the product supply at world food market negatively.

Besides these factors, the increase of food prices as a result of the increase in national income per capita and the consumption demand especially due to the economical developments China and the Russian Federation experienced in the last years, are other important causes of the food crisis.

Moreover, as there are attempts to meet the increasing demand for meat and milk in developed countries, basic foodstuff per capita in developing countries is getting lower day by day. In addition, food waste, which is very common in developed countries, ruins the food range worldwide. Only in England, annually wasted food's cost is estimated to be 20 billion pounds (about 30 billion dollars).

Developed countries rank in the first rows in the world agricultural products' exports. The most important reason of this is that agricultural mechanization occurs at the top level and high-quality processed products are produced in these countries. Other than these, countries, which possess restricted agricultural lands especially like Belgium and Netherlands, re-export in high quantity and rank near the top. The only exception among the countries in the first rows is Brazil which has large cultivable lands and can be qualified as a major agriculture country. Still, it is important to note that Brazil has achieved agricultural mechanization at an important level.

It is inevitable that the financial crisis, which began in the USA, also affected the agricultural sector following its impact on the real sector. Although it was not considered that much of a problem that the agricultural sector is affected from shrinking demand less than other industrial goods as the sector produces staple foods, it cannot be ignored that the income of the producers may fall sharply due to the inelastic demand structure of the agricultural goods which creates large price changes even in the case of low levels of shrinking demands. In order to prevent these types of developments affecting both the agricultural sector and other related sectors negatively in the long term, the effects of the crisis to the agricultural sector should not be disregarded and the ways to bypass with minimum damage should be sought.

The world production of agricultural machines and equipments is a circle of trade, in which integrations between the companies dominate. Most of the big companies like John Deere, Case New Holland (CNH Global) and AGCO Corporation are multinational companies with common production investments and worldwide distribution channels. Other companies, which do not have production facilities overseas, have distribution channels and business agents in several countries. Companies like Japan Kubota Tractor or Sweden Alfa-Laval

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established some plants and distribution networks in the USA and some other places. Parts and components are sent to the whole world and used in the production of original equipments. This makes it difficult to determine the indigenoussness of the agricultural machines and equipments, which are produced in various countries.

The classification of the agricultural machinery and equipments, with the main lines, arise from three agricultural business scales which are valid all over the world. Large-scale and capital-intensive agricultural business model is applied in the USA, Canada, Australia and in a limited range in Mexico, Argentina, Brazil and South Africa. Although Russia, Ukraine and other former Soviet Republics apply the large-scale agricultural business model, the intensity of the agricultural capital and the level of mechanization are not like the former. In Europe, Latin America and some regions of Asia, medium scaled but developed agricultural industry is carried out. Small-scaled business model is performed in Asia, Africa and Caribbean's. Consequently, it is directly related to the size of the land which belongs to the business, which agricultural machine and/or equipment is utilized in a business.

The machines and equipments produced in the USA and Canada serves mainly to the large scaled agricultural businesses. Medium size machines are generally manufactured in Europe by European companies and by the co-partners of the US companies. With the license agreements or joint ventures with the US and European companies, the production of medium sized agricultural machines and equipments increased in Mexico, Brazil and Argentina. Japan is the leader of the market for small-scaled equipments. Nevertheless, South Korea, India, Taiwan, and China also started to increase their share in small-scaled equipments production.

The growth of size in the farms in the developed countries like the USA, Canada, the EU, Australia and in some Latin American countries like Argentina, Brazil, Mexico, the utilization of high technology is the most important advancement in the sector. In these countries, the sales of the agricultural machinery and equipments are mainly for replacing the old technology equipments. On the other hand, the increase of the average farm size affects the sales of the machines per farm negatively.

It is clearly seen that the developments in the sector in the world are much more different than Turkey. The world agricultural machinery and equipments sector, like in the automotive sector, advances in a high integration and globalization level. The best example especially for the production of tractors is that in 1992, two world wide tractor brands, "Fiat" and "Ford", merged and named as "New Holland", and then by merging with another big tractor brand "Case", a great tractor producer Case New Holland emerged.

The global economic crisis experienced in 2009 resulted in significant effects in machinery and equipments sector like in agriculture sector itself. However, continuously increasing food demand resulting from constantly rising population of the world and widening food consumption behavior will not lead to a downsize in the agricultural and indirectly agricultural machinery and equipments sector. Moreover, the fact that agricultural businesses worldwide have the smallest loan/resource proportion values indicates that the investments in the agricultural machinery and equipments sector will continue in the coming years. Though the short-term affects of the global crisis are still present, it is

expected that both the agricultural sector and agricultural machinery and equipments sector will remain positive.<sup>1</sup>

## World Export

Between 2004 and 2008, the volume of world trade of agricultural machinery and equipments has doubled to reach at 37 billion Dollars. However, it declined to 28 billion Dollars in 2009. Thereafter, it started to increase again and at the end of 2010, it reached 31 billion Dollars of trade volume.

The group of products which are mostly subject to trade consist of harvesters (3.2 billion Dollars), mowers, powered, lawn, with horizontal cutting device (3.1 billion Dollars) and pest control machinery (2.8 billion Dollars). The total world export of the agricultural machinery parts was recorded as about 8.1 billion Dollars in 2010.

Examining the situation of the trade of agricultural machines and equipment, it is revealed that developed countries, like in the trade of agricultural products, are again at the top of the trade of the machines and equipments. This fact shows that intra-industry trade is very common in the sector. The most important reason for this is that developed countries are able to meet the demand of the sector by themselves resulting from their capability to manufacture high-tech machines.

### *The Export of the Agricultural Machines of the World (US \$ million)*

HS6	Product Name	2008	2009	2010
8208.40	Knives and blades for agricultural, horticultural or forestry machines	406	340	302
8424.81	Mech appl for proj/disp o sprayg liquids o powders for agr o horticut	2.992	2.381	2.783
8432.10	Ploughs	511	410	361
8432.21	Disc harrows	305	181	192
8432.29	Scarifiers, cultivators, weeders and hoes	1.177	880	962
8432.30	Seeders, planters and transplanters	1.563	1.139	1.132
8432.40	Manure spreaders and fertiliser distributors	390	259	293
8432.80	Rollers,stone-removers&other soil preparation or cultivation machinery	1.040	773	908
8432.90	Parts for rollers and other soil preparation or cultivation machinery	2.451	1.892	2.017
8433.11	Mowers, powered, lawn, with horizontal cutting device	3.671	2.824	3.117
8433.19	Mowers, powered, lawn, nes	805	484	513
8433.20	Mowers for hay etc including cutter bars for tractor mounting	1.265	867	869
8433.30	Hay tedders and rakes and other haymaking machinery	654	431	453
8433.40	Straw or fodder balers, including pick-up balers	1.188	892	820
8433.51	Combine harvester-threshers	4.460	3.294	3.173
8433.52	Threshing machinery nes	231	226	237
8433.53	Root or tuber harvesting machines	441	352	421
8433.59	Harvesting machinery nes	1.478	1.049	1.101

<sup>1</sup> <http://news.thomasnet.com/IMT/archives/2009/03/agricultural-machinery-manufacturers-forecast-to-have-strong-sales-in-2009-despite-credit-crisis.html>

8433.60	Machines for cleaning, sorting or grading eggs, fruit or other produce	565	469	530
8433.90	Parts of harvesting,threshing & other agricultural & mowing machinery	5.092	3.800	3.954
8434.10	Milking machinery	427	295	292
8434.90	Parts of milking machines and dairy machinery	798	574	645
8436.10	Machinery for preparing animal feeding stuffs	804	649	713
8436.21	Poultry incubators and brooders	146	120	217
8436.29	Poultry-keeping machinery, nes	1.086	898	1.318
8436.80	Agri/hortic/forestry bee-keeping mach nes inc germination plant	2.204	1.355	1.826
8436.91	Parts of poultry-keeping machinery	380	336	494
8436.99	Parts of agr/hort/forest/bee-keepg mach nes inc pts of germinant plant	1.010	777	988
<b>Total</b>		<b>37.539</b>	<b>27.949</b>	<b>30.629</b>

Resource: ITC-Trade Map ([www.trademap.org](http://www.trademap.org))

The country that has exported the most agricultural machinery and equipments was Germany in 2011. It was followed by the USA, Italy, China and the Netherlands respectively. The exception among all the exporter countries is China. Like every other sector, China comes in the first place in the agricultural machinery sector due to its cheap labor force. Hence, China is in a more advantageous position relative to the others with its low quality but reasonably priced machines and equipments.

*The exporters of the sector (Million Dollars)*

Country		2009	2010	2011
1	Germany	4.724	4.961	6.836
2	U.S.A	4.736	5.368	6.831
3	Italy	2.304	2.434	2.945
4	China	1.728	2.187	2.605
5	Netherlands	1.761	1.867	2.182
6	France	1.552	1.606	1.908
7	Belgium	1.504	1.282	1.702
8	Canada	1.189	1.168	1.401
9	Brazil	452	803	962
10	Denmark	662	690	883
<b>First 10 Total</b>		<b>20.611</b>	<b>22.367</b>	<b>28.256</b>
11	Austria	693	669	840
12	Poland	483	569	735
13	England	510	559	666
14	Sweden	370	471	626
15	Spain	467	548	596
16	Hungary	446	415	572
17	Czech Republic	290	335	509
18	Japan	457	497	479
19	Mexico	355	450	466
20	Finland	242	378	461
<b>First 20 Total</b>		<b>24.924</b>	<b>27.259</b>	<b>34.206</b>
25	Turkey	242	378	461
<b>Total</b>		<b>27.949</b>	<b>30.629</b>	<b>unavailable</b>

Resource: ITC-Trade Map ([www.trademap.org](http://www.trademap.org))

The total export of the tractors, trailers and pedestrian controlled tractors also doubled between 2004 and 2008, like the case for the agricultural machinery and equipments. However, during 2009, it declined sharply from 23 billion Dollars to 15.4 billion Dollars because of the global crisis. In 2010, it started to rise again and came up with a 16 billion Dollars of exportation value at the end of the year.

***The Export of Tractors, Trailers and Pedestrian Controlled Tractors of the World (US\$ million)***

HS6	Product Name	2008	2009	2010
8701.10	Pedestrian controlled tractors	319	196	316
8701.90	Wheeled tractors nes	22.179	14.663	15.348
8716.20	Trailers for agricultural purposes	733	517	510
<b>Total</b>		<b>23.231</b>	<b>15.376</b>	<b>16.173</b>

Resource: ITC-Trade Map ([www.trademap.org](http://www.trademap.org))

The developed countries are at the top of the list in terms of the export of tractors, trailers and pedestrian controlled tractors. The share of Germany, which comes first in the export of the tractors, is 18 % in total export value. It is followed by the USA, Italy, Japan, the UK and France.

***The exporters of the sector (US\$ million)***

Country	2009	2010	2011
1 Germany	3.108	2.876	3.890
2 U.S.A	2.069	2.082	2.734
3 Italy	1.650	1.612	2.018
4 Japan	1.248	1.606	1.624
5 UK	1.223	1.239	1.548
6 France	1.082	1.103	1.497
7 Austria	740	650	870
8 Brazil	452	536	594
9 Finland	413	423	562
10 China	280	335	463
<b>First 10 Total</b>	<b>12.265</b>	<b>12.461</b>	<b>15.800</b>
11 South Korea	224	252	368
12 Mexico	153	225	343
13 Netherlands	166	233	328
14 Belgium	345	254	314
15 Canada	210	192	265
16 Turkey	183	200	224
17 Sweden	92	162	195
18 Czech Republic	131	144	163
19 Thailand	43	74	122
20 Poland	71	84	116
<b>First 20 Total</b>	<b>13.884</b>	<b>14.280</b>	<b>18.238</b>
<b>Total</b>	<b>15.376</b>	<b>16.173</b>	<b>unavailable</b>

Resource: ITC-Trade Map ([www.trademap.org](http://www.trademap.org))

## World Import

As for the import of agricultural machines and equipments, the developed countries come first. The reason for this, as mentioned above, is the intra-industry trade commonly observed in the sector.

### *The Import of the Agricultural Machines of the World (US\$ million)*

HS6	Product Name	2008	2009	2010
8208.40	Knives and blades for agricultural, horticultural or forestry machines	452	388	335
8424.81	Mech appl for proj/disp o sprayg liquids o powders for agr o horticut	2.631	2.058	2.352
8432.10	Ploughs	447	340	317
8432.21	Disc harrows	292	190	185
8432.29	Scarifiers, cultivators, weeders and hoes	1.209	875	970
8432.30	Seeders, planters and transplanters	1.656	1.215	1.144
8432.40	Manure spreaders and fertiliser distributors	489	301	322
8432.80	Rollers,stone-removers&other soil preparation or cultivation machinery	978	692	743
8432.90	Parts for rollers and other soil preparation or cultivation machinery	2.402	1.849	1.904
8433.11	Mowers, powered, lawn, with horizontal cutting device	3.651	2.938	3.110
8433.19	Mowers, powered, lawn, nes	522	355	410
8433.20	Mowers for hay etc including cutter bars for tractor mounting	1.102	756	756
8433.30	Hay tedders and rakes and other haymaking machinery	597	394	398
8433.40	Straw or fodder balers, including pick-up balers	1.070	838	794
8433.51	Combine harvester-threshers	4.583	3.282	3.208
8433.52	Threshing machinery nes	140	99	109
8433.53	Root or tuber harvesting machines	383	255	363
8433.59	Harvesting machinery nes	1.463	1.079	1.149
8433.60	Machines for cleaning, sorting or grading eggs, fruit or other produce	498	415	490
8433.90	Parts of harvesting,threshing & other agricultural & mowing machinery	4.931	3.776	4.003
8434.10	Milking machinery	483	351	401
8434.90	Parts of milking machines and dairy machinery	1.051	753	758
8436.10	Machinery for preparing animal feeding stuffs	686	520	615
8436.21	Poultry incubators and	186	147	242

	brooders			
8436.29	Poultry-keeping machinery, nes	898	715	1.059
8436.80	Agri/hortic/forestry bee-keeping mach nes inc germination plant	2.110	1.316	1.821
8436.91	Parts of poultry-keeping machinery	345	290	439
8436.99	Parts of agr/hort/forest/bee-keepg mach nes inc pts of germinant plant	941	716	986
<b>Total</b>		<b>36.197</b>	<b>26.905</b>	<b>29.381</b>

Resource: ITC-Trade Map ([www.trademap.org](http://www.trademap.org))

The country that imported the most agricultural machines end equipments was the USA with a share of 9.5%. France, Germany and Canada follow the USA.

#### *The Importers of the Sector (US\$ million)*

COUNTRY		2009	2010	2011
1	U.S.A	2.540	2.779	3.241
2	France	2.451	2.290	2.937
3	Germany	2.080	2.122	2.791
4	Canada	1.889	2.181	2.576
5	England	1.314	1.236	1.503
6	Australia	848	798	1.212
7	Belgium	956	799	1.018
8	Netherlands	846	832	927
9	Poland	566	712	780
10	Austria	613	597	746
<b>First 10 Total</b>		<b>14.104</b>	<b>14.346</b>	<b>17.731</b>
11	Sweden	495	649	741
12	Italy	547	658	722
13	Mexico	496	609	702
14	China	444	511	689
15	Denmark	585	489	656
16	Brazil	237	395	576
17	Spain	482	493	549
18	Czech Republic	355	337	535
19	Romania	305	326	439
20	Japan	338	381	397
<b>First 20 Total</b>		<b>18.387</b>	<b>19.193</b>	<b>23.735</b>
22	Turkey	131	237	387
<b>Total</b>		<b>26.905</b>	<b>29.381</b>	<b>unavailable</b>

Resource: ITC-Trade Map ([www.trademap.org](http://www.trademap.org))

The USA imported tractors, trailers and pedestrian controlled tractors in 2011 more than all the other countries like in the case of other agricultural machines and equipments (2.5 billion Dollars). France, Germany, Canada, England and Poland are the five countries, which followed the USA.

***The Import of Tractors, Trailers and Pedestrian Controlled Tractors of the World (US\$ million)***

HS6	Product Name	2008	2009	2010
8701.10	Pedestrian controlled tractors	358	247	321
8701.90	Wheeled tractors nes	21.029	14.322	15.151
8716.20	Trailers for agricultural purposes	599	381	378
<b>Total</b>		<b>21.986</b>	<b>14.950</b>	<b>15.849</b>

Resource: ITC-Trade Map ([www.trademap.org](http://www.trademap.org))

***The Importers of the Sector (US\$ million)***

COUNTRY	2009	2010	2011
1 U.S.A	1.893	2.195	2.505
2 France	1.428	1.171	1.529
3 Germany	1.008	982	1.354
4 Canada	1.017	1.134	1.308
5 England	882	807	967
6 Poland	434	628	607
7 Belgium	501	393	564
8 Italy	445	453	541
9 Australia	571	439	525
10 Netherlands	304	342	514
<b>First 10 Total</b>	<b>8.482</b>	<b>8.545</b>	<b>10.414</b>
11 Spain	414	491	490
12 Austria	298	356	411
13 Sweden	229	311	362
14 Turkey	91	202	351
15 Norway	176	271	350
16 South Afrika	230	190	336
17 Switzerland	185	224	280
18 Thailand	336	347	248
19 Czech Republic	134	139	246
20 Denmark	166	161	225
<b>First 20 Total</b>	<b>10.742</b>	<b>11.239</b>	<b>13.713</b>
<b>Total</b>	<b>14.950</b>	<b>15.849</b>	<b>unavailable</b>

Resource: ITC-Trade Map ([www.trademap.org](http://www.trademap.org))

## TRADE FAIRS

The products of the Turkish agricultural machinery industry are exhibited in international and national fairs organized in Turkey.

Trade fairs held in Turkey related to agricultural machinery are listed on the web page of TOBB – Union and Chambers of Commodity Exchanges of Turkey – “Turkey Fair Guide” ( <http://www.fuarrehberi.org.tr/> OR <http://www.tobb.org.tr/fuar/eng> )

Major fair organized in this sector in 2010 are;

- Agrodays – Agriculture and Agricultural Technologies Fair  
March 2010, Mersin
- Malatya Agrotech – Agricultural Technology, Agricultural Industrial Products, Livestock Fair  
April 2010, Malatya
- Çorlu Agriculturetech 2010 – Agriculture Technologies, Animal Breeding, Planting, Seeding Fair  
June 2010, Tekirdağ
- Agriculturetech 2010 – Agriculture Technologies, Animal Breeding, Planting, Seeding Fair  
September 2010, Kırklareli
- Agroexpo Eurasia – Agriculture, Agricultural Technologies, Greenhouse, Livestock Breeding, Seed and Seedling Production, Irrigation Technologies, Dairy Industry, Livestock Production Machinery Fair  
September 2009, Izmir
- BurTarım – Bursa Agriculture, Stockbreeding, Poultry, Seed Raising, Saplings and Dairy Industry Fair  
October 2010, Bursa
- Anatolia – Agriculture, Agricultural Machines and Industry Fair  
October 2010, Çorum
- Agrotec'2010 – International Agriculture, Agricultural Machines, Pesticides, Animal, Greenhouse Equipments Fair  
October 2010, Ankara
- Adana Agriculture – Agriculture, Stockbreeding, Poultry and Dairy Industry Fair  
November 2010, Adana
- Growtech Eurasia – International Horticulture, Agriculture, Floriculture and Technologies Fair  
December 2010, Antalya

## USEFUL LINKS

- General Secretariat of Central Anatolian Exporters Union:  
<http://www.oaib.org.tr/en>
- Turkish Machinery Promotion Group:  
<http://www.makinetanitimgrubu.com.tr/en/>
- The Turkish Association of Agricultural Machinery and Equipment Manufacturers:  
<http://www.tarmakbir.org/index-eng.htm>
- Association Of Machinery Manufacturers:  
<http://www.mib.org.tr/index.php?lang=english>



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