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## **Evaluation of Agriculture Sector and Agricultural Policy in Turkey**

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**Abstract:** The agricultural sector has undertaken very important tasks in the economic and social development of countries, and will continue to undertake these tasks in the future. There have been significant changes in the agricultural sector in the last 50 years. With the rapid growth of industrialization in developing countries and the services sector in developed countries, the share of the agricultural sector in global economy has declined considerably. Increasing urbanization rates have also led to a decline in agricultural land. In this study, it was aimed to investigate changes in Turkish agriculture, changes in the share of agriculture in Gross National Product and foreign trade, changes in agricultural production areas and fluctuations in important crop and animal products. It is seen that there is premium payment and field based support to direct producers in Turkey. These type policies are affected short run but it's damaged to sector in the long run. Instead of short-term premium support policies, the long-term effect policies should be adopted to strengthen the agricultural sector.

**Keywords:** gross national product, agricultural land, sufficiency ratio, agricultural supports.

## **Introduction**

Agriculture is the period of vegetative and animal production in order to meet the nutritional needs of the people with the passive life transition of human beings from the hunter-gatherer lifestyle. The agriculture produces a variety of nutrients, diversifies nutrients by processing these substances, and meets the needs of the people as well as the health and development of the societies. Community health and socio-economic development is possible with adequate and balanced nutrition. First of all, it is necessary for people to have access to the quantity and type of nutrients they desire to be fed adequately and balanced, and then to have a home to purchase these items.

The agricultural sector has undertaken very important tasks in the economic and social development of countries, and will continue to undertake these tasks in the future. For this reason, the agriculture sector is closely related to the economic, social and environmental dimensions of the whole society (Doğan et al, 2015).

There have been significant changes in the agricultural sector in the last 50 years. With the rapid growth of industrialization in developing countries and the services sector in developed countries, the share of the agricultural sector in global economy has declined considerably. Increasing urbanization rates have also led to a decline in agricultural land (Aşarkaya, 2015). On the other hand, many countries have tried to increase their productivity with technological and genetic methods in order to meet the increasing demand. In this period, the share of developed economies in global agricultural production declined, while the share of developing countries increased. Developed countries are often oriented towards the production of high added value products and not based on work power (Ozertan, 2013). There have also been many changes in Turkish agriculture over the years. While some of these changes positively affected the agriculture sector, some of them had negative effects.

In this study, it was aimed to investigate changes in Turkish agriculture, changes in the share of agriculture in Gross National Product and foreign trade, changes in agricultural production areas and fluctuations in important crop and animal products. Besides, the agricultural policies will be examined and a solution proposal for the development of the agricultural sector will be brought up.

## **Material and Method**

Data used in the study obtained from Turkey Statistical Institute, Ministry of Agriculture and Livestock.

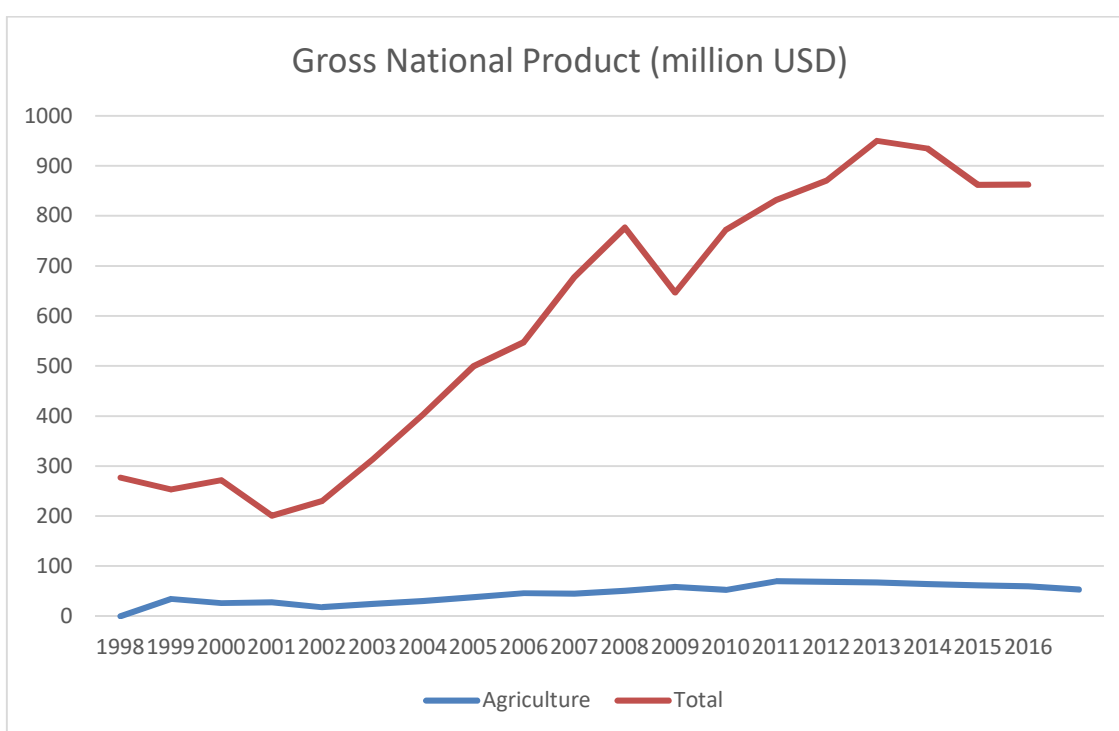
## **Structure of the Agriculture Sector in Turkey**

The agricultural sector should not be perceived only in terms of food or agricultural production. Since agricultural activities are sources of livelihoods for billions of people living in rural areas of the world, these activities have not only economic and environmental but also social dimensions. The contribution of the agricultural sector to the country's economy can be listed as economic contribution, poverty reduction, food security, environmental sustainability and raw materials for other sectors.

While Turkey was referred to as an agricultural country, the role of agriculture continues to diminish day by day due to the transition to the full competition economy

in 1980. When the share of the agricultural sector in economy over the last 50 years is examined, it is seen that as the level of development in the economies increases, the share of services and manufacturing sectors and the urbanization rate increase and accordingly the share of agriculture decreases considerably. While the Turkish economy had a 277 million dollar GNP in 1998, it became an 863 million dollar in 2016 (Figure 1). However, the agriculture sector was not growing at the same rate and the share of agriculture in GNP declined from 12.5% to 6.2%. In 1970s, the contribution of agriculture to the GNP was around 30% (Tuik, 2017).

In 2016, the services sector is the highest contribution to the GNP of Turkey with 21.17%. It is followed by the industrial sector with 19.72% and the manufacturing sector with 16.67%. (Figure 2).



*Figure 1. Gross National Product*

The value of agricultural production is estimated to be 83 million dollars by 2015. The share of live animals within the value of agricultural production is the first order with 29%. The share of animal products is 22%, the share of cereals and other herbal products is 20%.

When the share of agriculture sector in foreign trade is analysed, it is seen that the share of agriculture sector in total exports is 3.79% in Turkey (Tuik, 2017). We are leader in world production of hazelnut, cherries and figs export has not increased the share of exports in agriculture sector. Considering imports, 3.55% of total imports consist of agricultural products. These include sunflower seeds, other vegetable crude oils, wheat, corn, soybean. According to the sectors of Turkey, foreign trade shares are given in Table 1.

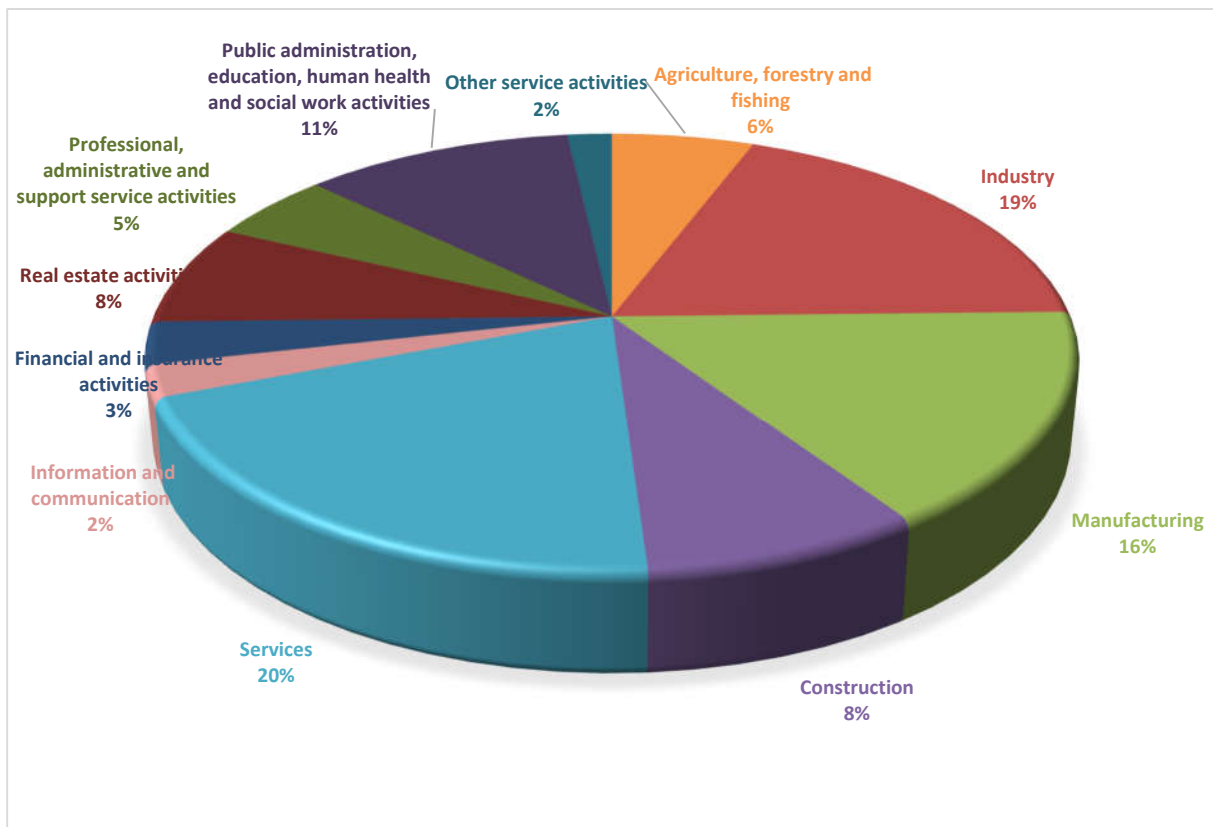


Figure 2. Share of All Sectors in GNP

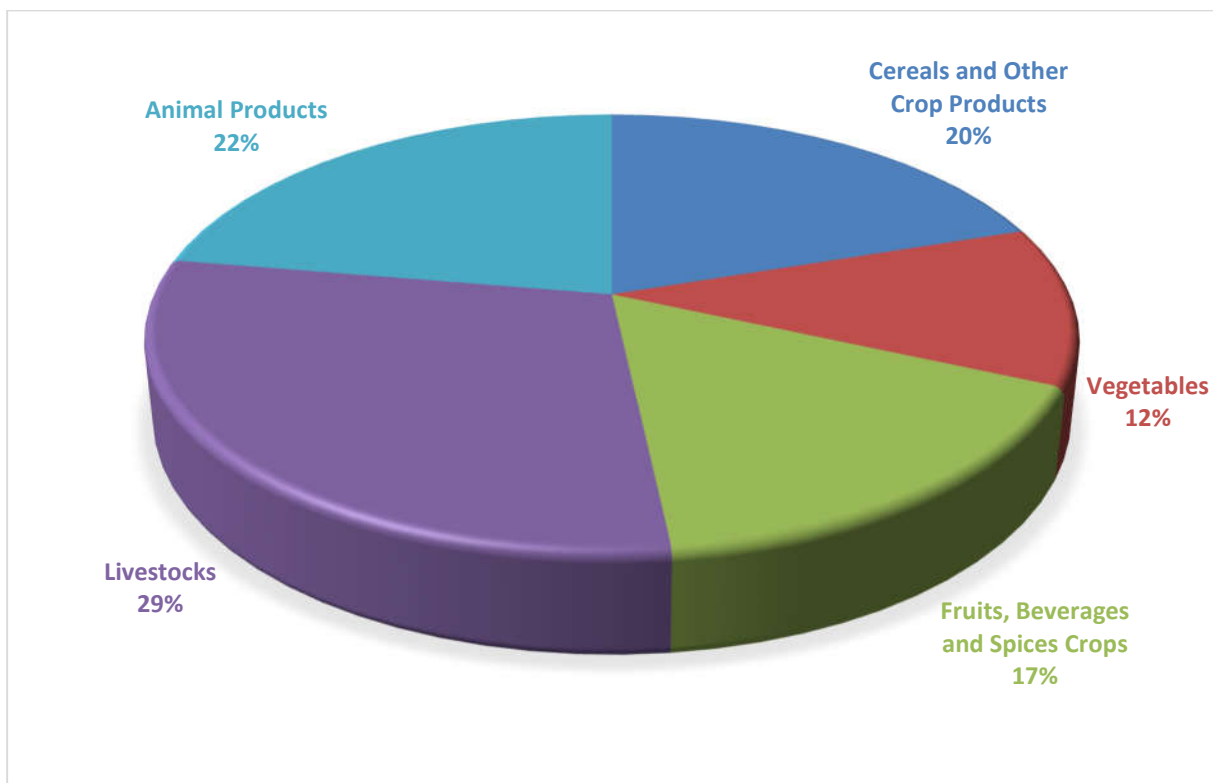


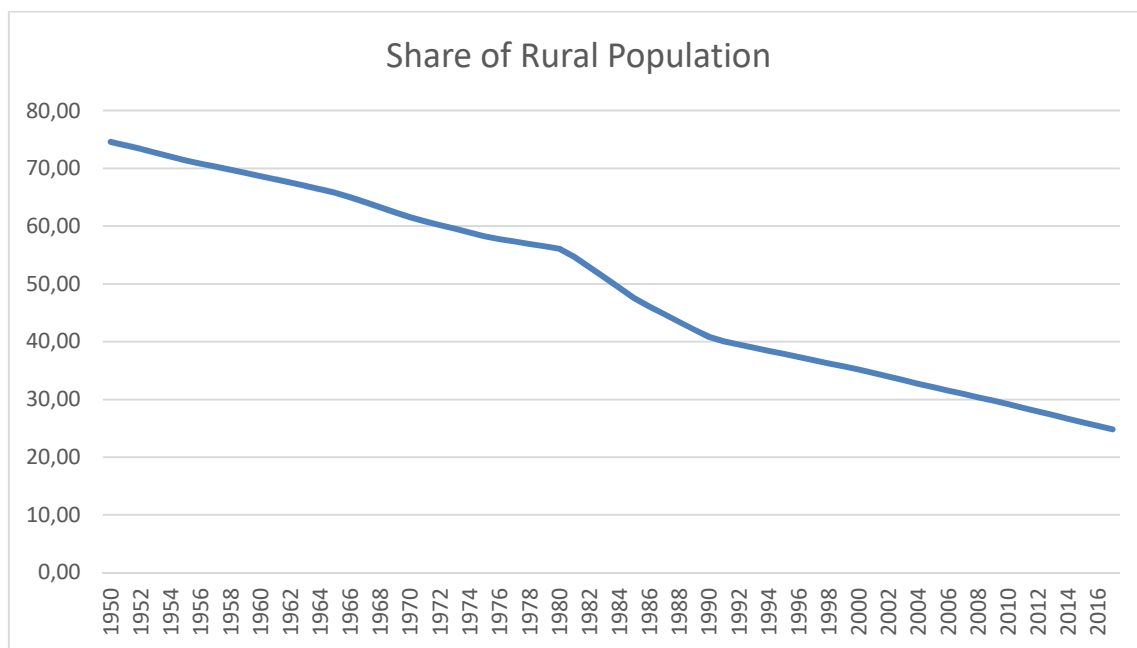
Figure 3. Agricultural Production Value

*Table 1. Agricultural Products in Foreign Trade (million USD)*

	Export	%	Import	%	Difference
Agriculture and Forestry	5397	3,79	7042	3,55	-1645
Mining	2677	1,88	19009	9,57	-16332
Manufacturing	133600	93,73	167242	84,20	-33642
Others	859	0,60	5324	2,68	-4465
Total	142533	100,00	198617	100,00	-56084

*Source: Turkish Statistics Institute, Agricultural Production Database, 2017.*

While the rural population in Turkey has been over 70% in 50's, the ratio of rural population to total population has decreased to 25% in recent years. The young people have rapidly been seen as a record for other sectors in last years. The reason for this is that it is difficult to compete with world prices and increases in input costs in agricultural production. In 2017, the total population of Turkey is 80 million and 20 million people live in the rural area and earn their income from agricultural sector. However, as mentioned above, the share of agriculture in GNP is gradually decreasing, and accordingly the rural population is becoming increasingly impoverished. For this reason, shifting young people from rural to other sectors is an inevitable result. It should be noted that in 50's the population of Turkey was around 21 million and the rural population was around 16 million.



*Figure 4. Share of Rural Population*

Agricultural production in Turkey is ongoing at 38 million hectares. Over the years, there have been contractions in agricultural lands. In recent years, 15 million hectares have been cultivated, while fallow lands have changed around 4 million hectares. Besides, the meadow and pasture land has 14.6 million hectares, the fruit

trees are 3.3 million hectares and the vegetable lands are 800 thousand hectares. There are 2.3 million farms and the average size of farms in Turkey is 6.5 hectares in Turkey (Tuik, 2017d). The most important factor in the reduction of agricultural land is to meet the housing needs of the rapidly increasing population. In recent years, many settlements have been transformed into metropolitan municipal administrations and agricultural land has been transferred to building land status.

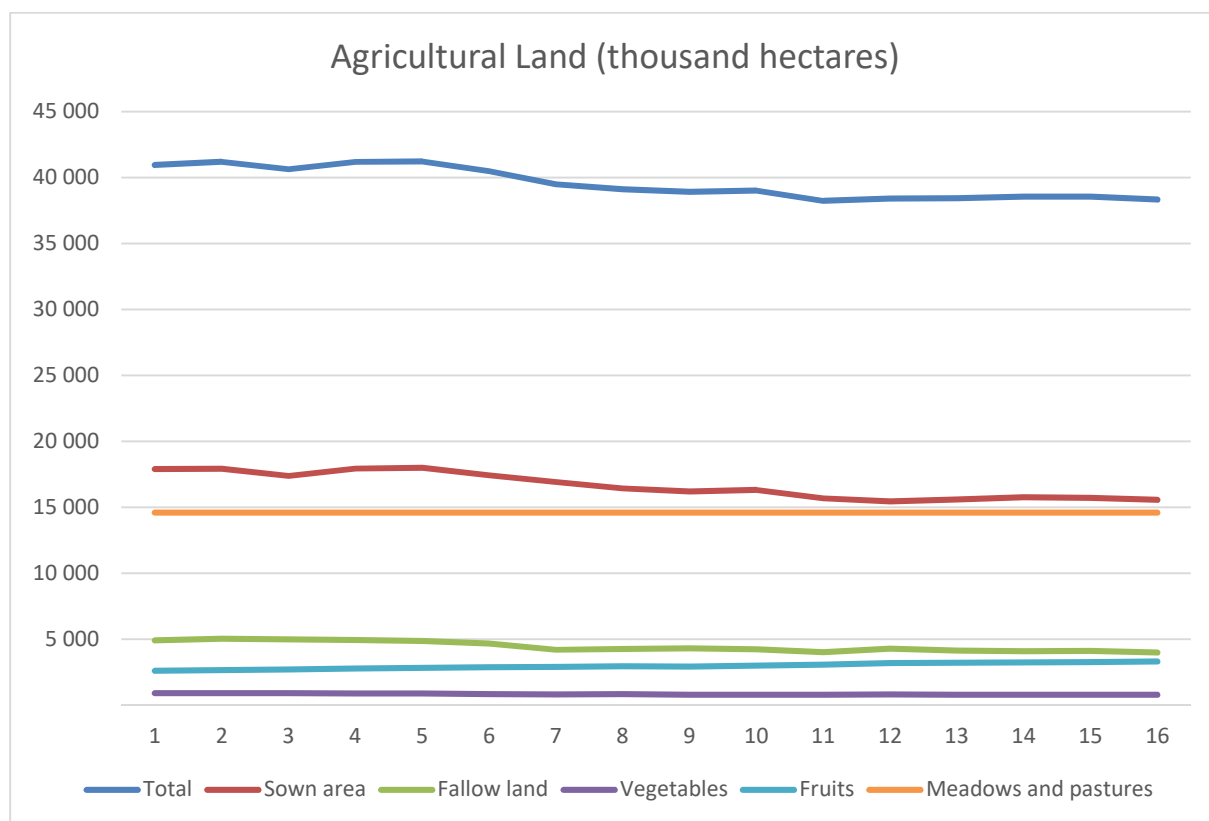


Figure 5. Agricultural Land

When the changes in important crops are examined, it is seen that sown areas of some crops are decreasing. It is observed that wheat, barley, cotton and sugar beet sown areas are decreasing whereas corn and sunflower sown areas are increasing. Wheat sown areas decreased from 9.3 to 7.6 million hectares between 2001 and 2016. The sunflower sown areas increased from 510 to 720 thousand hectares in the same period. The changes in sown areas of other crops are given detailed in Table 2.

Despite the decreasing of the wheat sown area, the production quantities fluctuated depending on years, but production of over 20 million tons was achieved. Barley production fluctuated between 6 million tonnes and 9.5 million tonnes over the years. In maize and sunflower, a significant increase in production has been achieved due to the increase in sown areas. However, the production deficiency in sunflower and vegetable oils is still ongoing. Cotton production was stable compared to the years, while sugar beet production increased from 12.6 million tons to 19.5 million tons (Table 3).

*Table 2. Sown area of some crops (1000 hektar)*

	Wheat	Barley	Maize	Sunflower	Cotton (raw)	Sugar beets
<b>2001</b>	9350	3640	550	510	685	359
<b>2002</b>	9300	3600	500	550	721	372
<b>2003</b>	9100	3400	560	545	637	315
<b>2004</b>	9300	3600	545	550	640	315
<b>2005</b>	9250	3650	600	566	547	336
<b>2006</b>	8490	3650	536	585	591	326
<b>2007</b>	8098	3428	518	555	530	300
<b>2008</b>	8090	2950	595	580	495	322
<b>2009</b>	8100	3010	592	584	420	324
<b>2010</b>	8103	3040	594	641	481	329
<b>2011</b>	8096	2869	589	656	542	297
<b>2012</b>	7530	2749	623	605	488	281
<b>2013</b>	7773	2721	660	610	451	291
<b>2014</b>	7919	2787	659	657	468	289
<b>2015</b>	7867	2784	688	685	434	274
<b>2016</b>	7672	2740	680	720	416	322

*Source: Turkish Statistics Institute, Agricultural Production Database, 2017.*

*Table 3. Production of some crops (1000 tonnes)*

	Wheat	Barley	Maize	Sunflower	Cotton (raw)	Sugar beets
<b>2001</b>	19000	7500	2200	650	2358	12633
<b>2002</b>	19500	8300	2100	850	2542	16523
<b>2003</b>	19000	8100	2800	800	2346	12623
<b>2004</b>	21000	9000	3000	900	2455	13517
<b>2005</b>	21500	9500	4200	975	2240	15181
<b>2006</b>	20010	9551	3811	1118	2550	14452
<b>2007</b>	17234	7307	3535	854	2275	12415
<b>2008</b>	17782	5923	4274	992	1820	15488
<b>2009</b>	20600	7300	4250	1057	1725	17275
<b>2010</b>	19674	7250	4310	1320	2150	17942
<b>2011</b>	21800	7600	4200	1335	2580	16126
<b>2012</b>	20100	7100	4600	1370	2320	14920
<b>2013</b>	22050	7900	5900	1523	2250	16489
<b>2014</b>	19000	6300	5950	1638	2350	16743
<b>2015</b>	22600	8000	6400	1681	2050	16023
<b>2016</b>	20600	6700	6400	1671	2100	19465

*Source: Turkish Statistics Institute, Agricultural Production Database, 2017.*

The number of livestock is observed an increase in the last 15 years. The number of cattle increased from 10 million to 14 million between 2001 and 2016. The number of sheep increased from 26 million to 31 and the number of goats increased from 7 million to 10 million in the same period. In this period, new arrangements were made to release live animal imports. Although the total number of animals has increased from 44 million to 55 million heads, the red meat prices are still very high and the government is trying to reduce red meat price via imports of live animals in certain periods. In this period, the population of Turkey increased from 65 to 80

million. The reason for the increase in the number of animals is the import of live animals, which is made to meet the increasing population's need for red meat.

*Table 4. Number of livestock (1000 head)*

	Cattle	Sheep	Goats	Total
<b>2001</b>	10548	26972	7022	44542
<b>2002</b>	9803	25174	6780	41757
<b>2003</b>	9788	25432	6772	41991
<b>2004</b>	10069	25201	6610	41880
<b>2005</b>	10526	25304	6517	42348
<b>2006</b>	10871	25617	6643	43132
<b>2007</b>	11037	25462	6286	42785
<b>2008</b>	10860	23975	5594	40428
<b>2009</b>	10724	21750	5128	37602
<b>2010</b>	11370	23090	6293	40753
<b>2011</b>	12386	25032	7278	44696
<b>2012</b>	13915	27425	8357	49697
<b>2013</b>	14415	29284	9226	52925
<b>2014</b>	14223	31140	10345	55708
<b>2015</b>	13994	31508	10416	55918
<b>2016</b>	14080	30984	10345	55409

*Source: Turkish Statistics Institute, Agricultural Production Database, 2017.*

When the changes in animal products are examined, it is seen that all products except mohair recorded an increase. Red meat production was 435 thousand tons to 1 million 170 thousand tons between 2001 and 2016. Milk production increased from 9.5 million tonnes to 18.5 million tonnes in the same period, while chicken meat production increased from 600 thousand tonnes to 1.9 million tonnes. The changes in other products are given in Table 5.

*Table 5. Production of Animal Products*

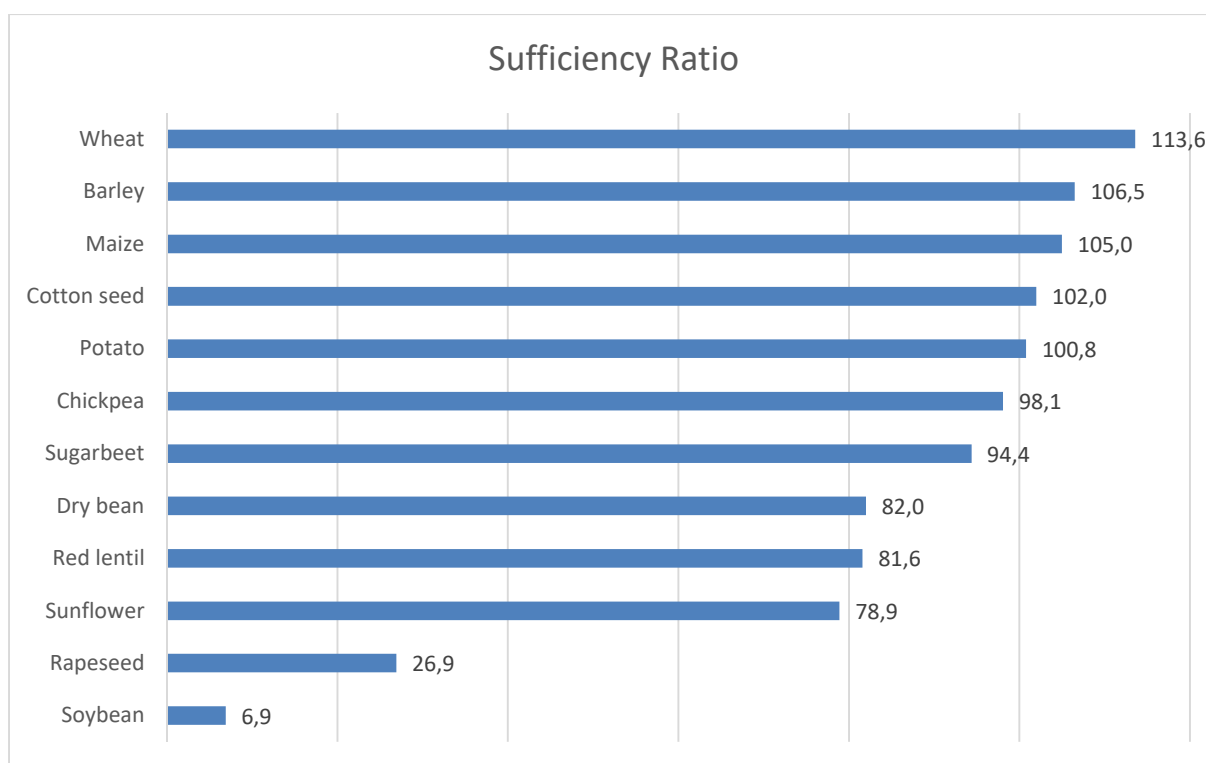
	Meat (Tons)	Milk (Tons)	Chicken meat (Tons)	Hen eggs (Thousand)	Honey (Tons)	Silk worm cocoon (Tons)	Wool (Tons)	Hair (Tons)	Mohair (Tons)
<b>2001</b>	435778	9495550	614745	10575046	60190	47	40909	2684	400
<b>2002</b>	420595	8408568	696187	11554910	74554	100	38244	2589	318
<b>2003</b>	366962	10611011	872419	12666782	69540	169	46456	2741	333
<b>2004</b>	447154	10679406	876774	11055557	73929	143	45972	2715	304
<b>2005</b>	409423	11107897	936697	12052455	82336	157	46176	2654	302
<b>2006</b>	438530	11952099	917659	11733572	83842	127	46776	2728	274
<b>2007</b>	575622	12329789	1068454	12724959	73935	125	46752	2536	237
<b>2008</b>	482458	12243040	1087682	13190696	81364	125	44166	2238	194
<b>2009</b>	412621	12542186	1293315	13832726	82003	136	40270	2002	174
<b>2010</b>	780718	13543674	1444059	11840396	81115	126	42823	2607	200
<b>2011</b>	776915	15056211	1613309	12954686	94245	151	46586	3062	194
<b>2012</b>	915844	17401262	1723919	14910774	89162	134	51180	3570	200
<b>2013</b>	996125	18223712	1758363	16496751	94694	121	54784	4902	260
<b>2014</b>	1008272	18630859	1894669	17145389	103525	80	58403	5460	280
<b>2015</b>	1149262	18654682	1909276	16727510	107665	66	59196	5569	325
<b>2016</b>	1173042	18489161	1879018	18097605	105727	103	62525	5445	341

*Source: Turkish Statistics Institute, Agricultural Production Database, 2017.*



Although Turkey has the climate and soil conditions suitable for the production of many agricultural products, it can not provide self-sufficiency in some crops. At the beginning of insufficient crops are oil seeds.

Figure 6 gives the self-sufficiency ratios of cereals, pulses and oil seeds. In cereals, the sufficiency level of domestic production was 110.2% in the 2015-2016 periods (TUIK, 201a). Self-sufficiency have been provided in wheat, barley and maize, but insufficiency are still continues such as sugar beet, sunflower, red lentils, soybean. Almost all of the fruit vegetables were provided self-sufficiency (Tuik, 2017b, Tuik, 2017c).



*Figure 6. Sufficiency ratio of the cereals*

### **Agricultural Policies in Turkey**

Agricultural supports in Turkey are divided into five main groups as field based supports, biological and bio-technical fight supports, domestic certified seedling / seed production and utilization support, premium payment support, animal husbandry support.

Field based support includes area based income support for hazelnut producers, good agricultural practices support, organic farming support, organic animal husbandry support, fuel oil, fertilizer and soil analysis support.

Other agricultural supports include protection of agricultural lands for environmental purposes, domestic seed production and use support, domestic seedlings / seedlings production and use support.

Within the scope of premium payment support, basin based supports are supported for certain products by paying a difference for each region.

Within the context of livestock support, there are a lot of animal husbandry support methods, such as sheep-goat support, vaccine support, breeding cattle support, calf support, feed plant support, shepherd support, silk beetle, beekeeping, aquaculture support, fishing boat support, animal gene resources support.

The ratio of agricultural supports to GNP decreases from 6.1% to 2.42% between 1991 and 2016 in Turkey. When the OECD average is examined, it drops below 2% to 1% in the same period.

### **Conclusion**

In Turkey, the agriculture sector has lost its share in GNP over the years and the contribution of agriculture to GNP has decreased by 6.2%. This is mainly due to the fact that the services sector and the manufacturing industry are improving day by day, as it is all over the world.

The agricultural sector is a social sector in developing countries like Turkey. Currently, 25% of our population is employed in the agricultural sector. Therefore the agricultural sector is supported. 2.4% of GNP is transferred to agricultural supports. It is hard to explain that a sector contributing 6.2% to the GNP is supporting 2.4% of the GNP. However, as mentioned above, 25% of the population is employed in this sector and the existence of structural problems in the agriculture sector suggests that agricultural support should continue. It should not be forgotten that agricultural products are strategic products.

In the study, the structure of the Turkish agricultural sector has been revealed, the average size of farms, contraction in agricultural lands, developments in vegetable and animal products, and finally self-sufficiency rates in important crops. As can be seen, agricultural enterprises are small-scale family businesses. For this reason, the capital structures of the enterprises are insufficient and financial problems arise. Due to the fact that the enterprises are small scale, planned production patterns can not be revealed and foreign dependence is emerged in major strategic products.

Another reason for the contraction in agricultural production is the rapid shift of the agricultural population to other sectors. The young generation living in rural areas prefers service and industry sectors not interested in agriculture. In this case a serious immigration problem arises.

When the agricultural policies applied in Turkey are examined, it is seen that there is premium payment and field based support to direct producers. These type policies are affected short run but it's damaged to sector in the long run. The main aim in politics is to create an organized, competitive and sustainable agricultural sector. The agricultural policies implemented in Turkey are aimed to increase production and to protect economic balances. Increasing production is good for ensuring self-sufficiency, but it is not enough regarding long-term sustainability of agriculture.

Firstly, it is necessary to shift the agricultural population to other sectors in a planned way and to carry out reverse migration (from the city to village) in order to be able to include unused arable land in the required regions. Due to the decrease in population, the average size of farms will increase and more efficient use of inputs will be ensured. It is important not to forget the foreign dependence of agricultural inputs. The fact that, farms have small scale and multi-part land revealed significant resource waste in the current structure.

Instead of short-term premium support policies, the long-term effect policies should be adopted to strengthen the agricultural sector.

Accordingly, land consolidation studies should be accelerated. The producer's ability to handle its own product must be increased and the added value to be achieved must be in favor of the producer. Co-operative should be widespread and producers should be able to sell their products themselves. Also, infrastructure work for irrigable agriculture should be accelerated. Regulations on meadows and pastureland should improve livestock which we have high potential.

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