

PAPER DETAILS

TITLE: Evaluation of Turkey`s Agricultural Support Policies in Terms of World Trends

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PAGES: 72-78

ORIGINAL PDF URL: <https://dergipark.org.tr/tr/download/article-file/3058052>



Evaluation of Turkey's Agricultural Support Policies in Terms of World Trends

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ARTICLE INFO

Article history:

Received date: 08.11.2022

Accepted date: 02.12.2022

Keywords:

Agricultural policy trends

Agricultural support

TURKEY

EU

USA

ABSTRACT

The agricultural sector seems to be overshadowed by the services sector in the globalizing world, but it still maintains its importance. Because agricultural products will continue to meet the basic needs of countries in the future as they do today. The most important problem faced by the sector, which is so important, is that it is overly affected by climatic conditions and the low income of the farmers operating in this field. Because of these features, agriculture has been a sector supported by various tools. The aim of this study is to reveal the evaluation of Turkey's agricultural support policies in terms of world trends implemented the world and to make necessary inferences by evaluating Turkey's agricultural support policies in terms of world trends in this context. For this purpose, agricultural support policy trends of the EU and USA were examined in this study. The main material of this study consisted of previous studies on the subject and material obtained from the web pages of the relevant institutes. The study was carried out as a compilation of studies containing analyzes and thoughts about the current situation and future of agricultural support policy trends in line with the determined purpose. Of the observed countries, only the United States has a positive CSE, that meaning its consumers are not taxed. On the other hand, Turkey recorded the highest negative CSE values in the observed period, which means that Turkish consumers are taxed the most.

1. Introduction

The agricultural sector is important for both developed and developing countries. This importance is due to the unique characteristics of agriculture. Also is an important sector in terms of contributing to a country in terms of labor, product and market, capital, and foreign exchange, as well as bringing balance to the state budget. The contribution of the agricultural sector to GDP in Turkey shows a decreasing trends. While the contribution of the agricultural sector to GDP was 9.03% in 2010, it decreased further in 2019 to 6.4%. In the EU, while the share of the agricultural sector in national income was 2.7% in 1991, it has decreased below 2% since 2005 (World Bank, 2020). Accordingly, while the share of the sector in GDP in the EU was 1.62% in 2010, it increased to 1.64% in 2019. The added value of agricultural production in Turkey reached 66.3 billion dollars by 2021. While agricultural production corresponded to 10.8% of GDP in 1995, this share decreased to 5.9% by 2021.

The history of agricultural support in the world dates back to BC it's seen that in the 18th century BC, it was

supported by the storage of grain crops in Egypt and its supply in scarce periods. When we look at Europe's continent, the history of support goes back to the 19th century. It was supported by the maize Law enacted in England in 1815 (Anonim, (2016a)). In the first quarter of the 1900s, as a result of the World Economic Depression that broke out in 1929 after the First World War, many countries took measures in order to encourage the increase in agricultural production. Agricultural support definition by OECD Total Support Estimate (measured as a percentage of GNP), Producer Support Estimate (measured as a percentage of gross farm income), Consumer Support Estimate (measured as a percentage of agricultural consumption), General Services Support Estimate (measured as a proportion of gross farm income), and also it includes 4 support estimates (Anonim, 2016b). After that, as can be seen, agricultural support is a concept that is given to producers and has a monetary function. According to 2014 published data by OECD, the Producer Support Estimate is 22.56% in Turkey, 18.36% on average in European Union (EU) countries, 9.8% in America, 0.99% in New Zealand, 58.37% in Norway (Anonim, (2016b)). In other words, 22.56% of the 1100-unit income created for a producer in Turkey

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is given to the producers by the state, and the remainder is obtained by the producer. Almost every country in the world supports agriculture and takes it under some protection and each country in the world supports its farmers within limits of the possible (Arisoy, 2020).

In the European Union, roughly 77% of agricultural support of 56 billion Euros consists of direct payments, 20% of rural development expenditures, and 3% of market measures. In the United States of America, 79% of the budget of the last (2014-2020) Agriculture Law (Farm Bill) close to one trillion dollars is to the supplementary food support program as consumption support, 9% to crop insurance supports, 6% to crop supports, 5% is spent on protection supports, and 1% on other programs. While in Turkey Direct agricultural support has increased continuously in the last sixteen years, from approximately 1.8 billion TL in 2002 to 21.96 billion TL in 2020, and the livestock support within these supports has increased from 83 million TL to approximately 4 billion TL (Semerci et al, 2020). In addition to the increasing food demand, developments in food technologies and studies in the field of biotechnology have caused large-scale capital companies to invest in the sector. A country that wants to keep the agriculture sector alive, feed its population, and compete in the world markets has to maintain support, protection, and incentive practices in the agricultural sector (Yorgun, 2006). Agricultural support policies implemented in Turkey are carried out by using tools such as support purchases, input supports, low-interest agricultural loans, milk incentive premium payments, natural disaster payments, limitation of cultivation areas, and support premiums payments. With market price support, which has been the most widely used support tool in the past, the Council of Ministers determines the price at which any product will be purchased and determines the institution to purchase. In addition, methods such as agricultural infrastructure investments, research, education and publication, investment incentives, incentives for foreign trade, and sometimes import protection are used (DPT, 1999). In addition, when the agricultural policy is mentioned, agricultural support policies usually come to mind. However, apart from support, agricultural policies include agricultural environment, rural development, agricultural extension, agricultural law, cooperatives, etc and as well as areas of interest.

In this study, while considering the agricultural support trends in the world and the problems of the agricultural sector, the agricultural support policies in Turkey were evaluated and suggestions were made for agricultural support policy trends. In order to do this, the developments in the world and in Turkey, especially the changes in the agricultural support policy trends in the EU, and the USA have been examined and evaluated, especially the studies that are critical on this subject. The reasons for the selection of these countries are that the EU, USA, and China have a large place in the world agricultural products market, and the agricultural sector of China has been in the world economy in recent years.

This is due to the fact that there is a visible vitality in the agricultural sector due to their prominence.

2. Materials and Methods

The main material of the study consists of scientific studies that evaluate agricultural policies in particular. Basically, domestic and foreign literature on support policies was used. In addition, the publications of the official institutions of the countries within the scope of the study and the official institutions in Turkey were used. Also, official data obtained from the units of the Ministry of Agriculture and Forestry in Turkey on agricultural support, the Turkish Statistical Institute (TUIK), the Organization for Economic Cooperation and Development (OECD), the European Union (EU), and the United States of America (USA) were used. In terms of a detailed evaluation of agricultural support policies, the time series of 2010 and 2021 were used. The fluctuations and changes in these series are interpreted to evaluate the policies in practice.

This study is a review study. New information cannot be reached by collecting original data or analyzing existing data with a method. By examining the previous scientific studies on the subject, inferences for the purpose of the study were tried to be made. It is assumed that the agricultural support policies in Turkey should be designed in accordance with the trends in the world and that these trends should be followed closely and implemented by adapting them to the conditions of the country. In fact, in order to be one step ahead, it has been tried to present predictions about what Turkey's agricultural support policies should be, with shortcuts for the future.

3. Findings

3.1. Agricultural Sector in The World

In order to better understand the importance of the agricultural sector, it is necessary to examine the share of agriculture in macroeconomic variables. In this context, the share of GDP, employment, and agriculture are mentioned below in light of Turkey and world data. It is possible to reveal the place and importance of the agricultural sector in the economy with a number of economic indicators. The shares of sectors in GDP play an important role in measuring the performance of the economy (TİM, 2016). According to the data from the World Bank, the total world GDP in 2020 was approximately 84.71 trillion dollars. On the basis of sectors, it is seen that the agriculture sector has made approximately 3.5 trillion dollars, the industrial sector approximately 23.5 trillion dollars, and the service sector has contributed the most with approximately 59 trillion dollars. According to the data of the World Bank, in 2018, 24% of the world GDP was in the USA, 21% in the EU, 15% in China, 6% in Japan, and 1% in Turkey.

The economic performance of the sectors is evaluated by their share in GDP. Agriculture has been the sector that was at the center of the economy until the

industrial revolution, but with the industrial revolution, the central position of agriculture in economic life began to lose its importance and its share in the economy decreased over time. Depending on the developments in the industry and service sectors, the share of the agricultural sector in GDP has decreased (Acar & Aytüre, 2014). In figure 1, the sectoral distribution of GDP in the world was given.

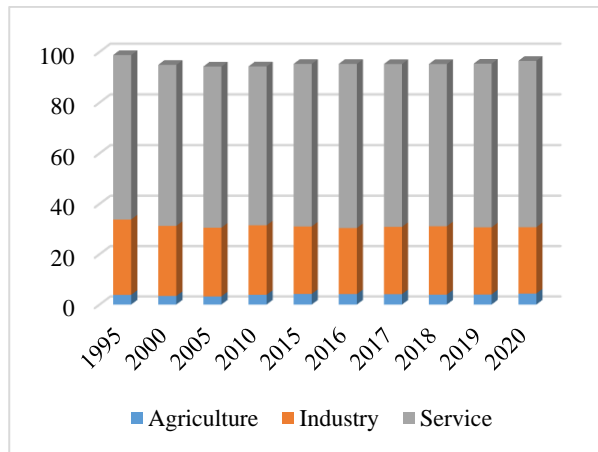


Figure 1
Distribution of World GDP by Sector (%), (Source: World Bank, 2022)

According to World Bank data, while Turkey's GDP in 2018 was approximately 778.4 billion dollars, it was realized as 720.1 billion dollars in 2020. On the basis of sectors, the agricultural sector was worth about 66 billion dollars, the service sector was worth about 542 billion dollars, and the industrial sector was worth about 280 billion dollars. It is seen that the agricultural sector is the sector that creates the least added value. However, in 1927, the agricultural sector comprised 60% of the GDP.

Turkey was an agricultural country in those years. While the industry sector was 10-11%, the service sector made up the rest (Bülbül, 2010). Until the 1950s, the share of agriculture in GNP was above 50%, and in the following years, this share decreased relatively. In 1960 it was over 30%; In the 1970s-80s, it was between 20-25% (Kepenek, 2012). In figure 2, the sectoral distribution of GDP in Turkey is given.

When Figure 2 is examined, it is seen that the share of agriculture in GDP decreased to 15% in 1995 and to 6.6% in 2020. In short, the share of agriculture in national income in Turkey has tended to decrease since 1950. It is observed that the agricultural sector is in decline, while the service sector has become the center of the economy.

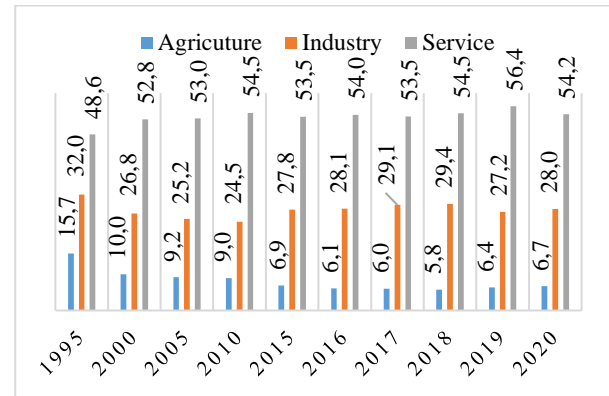


Figure 2
Sectoral Distribution of GDP in Turkey (%), (Source: World Bank, 2022)

This shows that the development rate of other sectors is higher than that of the agricultural sector. The figures above show the changes in the shares of three main sectors in GDP in the world and in Turkey. The share of the agricultural sector in GDP can be used as a measure to show the development level of countries. In this case, the agricultural GDP of various countries is given in Table 1.

Table 1
Agricultural GDP in Various Countries (2020)

	Country	Agricultural GDP (Million Dollars)	Share of Agriculture in Total GDP (%)	Share in World Agricultural GDP (%)
Developed countries	EU (28)	224.653,76	1,66	6,13
	USA	259.076,10	1,06	7,07
	Australia	82.801,82	2	2,26
Developing countries	Chinese	1.095.786,03	7,69	29,93
	India	431.169,34	18,23	4,98
	Indonesia	136.665,25	13,7	3,74
	Turkey	67.771,12	6,68	1,82
Less developed countries	Kenya	15.523,04	22,6	6,18
	Ethiopia	29.006,25	35,5	9,71
	Uganda	9.280,94	23,93	Haz.54
	World	3.659.981,77	3,94	1,07

Source: World Bank, 2022

According to Table 1, the countries with the highest share of world agricultural GDP can be listed as China, Ethiopia, and the USA. These countries make the highest contribution to the world's agricultural GDP. The very low rate of agricultural GDP in the EU reveals the level of development of the country. When the agricultural GDP share of other developed countries is considered, it is seen that it is at very low levels. In other words, the share of agriculture in GDP is low in developed countries. In developing countries, the share of agricultural GDP is higher than in developed countries. Turkey, which is in the category of developing countries, has a lower share of agricultural GDP than the countries in the same category but is quite high compared to developed countries. It contributes 1.07% to the world GDP. In underdeveloped countries, the share of agricultural GDP is quite high, but its contribution to world agricultural GDP is quite high. This means that as the level of

development of countries increases, the share of agricultural GDP decreases.

4. General Trends of Agricultural Support Policy in the World

Agricultural policy is one of the economic regulation priorities all over the world. So the importance of this immanent component of economic policy is determined by the importance of the agricultural sector in the social and economic life of mankind, as well as the high degree of involvement of all countries in the global trade in agricultural products. Therefore, examining the historical developments of agricultural policies will provide a good understanding of the structure of the current agricultural policy and the policies that are planned to be implemented in the future. Therefore, before examining current agricultural policies, was tried to reveal what kind of developments in agricultural policy trends were implemented in the past of some selected countries.

4.1 EU Agricultural Support Policy Trends

European Union countries, agricultural policies, and agricultural supports aim to increase farmers' production, and farmer's incomes to keep agricultural production resources in agriculture, to support family businesses in order to survive by obtaining sustainable income and to ensure food security and safety of the society. In the European Union, approximately 77% of agricultural support of 56 billion euros is made up of direct payments, 20% of rural development expenditures, and 3% of market measures (OECD, 2022).

While the Common Agricultural Policy has been the agricultural policy framework of the European Union since its establishment in 1962, the composition of policy instruments has evolved significantly over time (Table 2). The first major reform of the Common Agricultural Policy took place in 1992, with conferences and negotiations on the General Agreement on Tariffs and Trade (GATT) and following the conclusion of the US-EU soybean board (Grant, 2020). The MacSharry Reform conveyed a major shift in how the public sector provides support to agriculture. Rather than supporting production (through intervention purchases and export subsidies), management has turned to directly supporting farmers' incomes, closing the gap between supply and demand, and reducing overall spending (European Parliament, 2021). This was followed by Agenda 2000 reform, which focused on reconciling EU and world prices, offsetting the decline in price support with increased direct assistance to producers (European Parliament, 2021). Subsequently, the 2003 Fischler Reform² further developed and consolidated these measures. And

it saw the introduction of a single payment scheme (SPS), which separates most support from production (European Parliament, 2021). Reform programs for certain commodities (cotton, hops, olive oil, tobacco, sugar, fruit and vegetables, and wine), reducing corrupt payments and market-based incentives (OECD, 2011).

Then, measures were taken as part of the 2009 Health Check, which was necessary to continue the direction of the 2003 reform. It also further reduced market intervention for a number of agricultural products, eliminated set-offs, and phased out milk quotas (OECD, 2011). The 2013 Reform introduced a more global, integrated approach to agricultural support, undertaken through four lines of action, listed as follows (European Parliament, 2021):

1) Conversion of disaggregated help into a multi-functional support system with targeted assistance. Accordingly, the single payment scheme was replaced by a system of disaggregated payments with seven components: (a) a basic payment; (b) a greening payment for environmental public goods; (c) an additional payment for young farmers; (d) a 'redistributive' payment for first hectares of farmland; (e) support for areas with specific natural constraints; (f) aid coupled to production; and (g) a simplified system for small farmers.

2) Consolidation of the two pillars of the Common Agricultural Policy with market measures, mostly unbundled direct subsidiary and financed through Pillar 1, and rural development co-financed by Member States, financed through Pillar 2.

3) Consolidating Common Market Organisation tools into safety nets in case of market disruption or price crisis, and ending other supply control support measures, namely the sugar and milk quotas.

4) A more integrated, targeted and regional approach to rural development, including simplification of available tools to focus on specific key objectives. On 27 November 2020, a political agreement was reached in the Council between the European Parliament and the EU Member States on the transitional rules of the Common Agricultural Policy 2021-22. These transitional rules are based on the continuity of the Common Agricultural Policy 2014-2020.

Policy rules also incorporate new elements to ensure a smooth transition. From 2023-27, existing Pillar 1 and Pillar 2 systems will be included in the national strategic plans of the Member States' Common Agricultural Policy, although with an annual budget similar to the transition period. At the same time, the Common Agricultural Policy expenditures as a percentage of the total EU budget fell significantly, from 65.5% in 1980 to 35% in 2020.

Table 2. EU: Agricultural policy trends

Years	Main Milestones	Key policy features
Pre-1992	Coupled support phase Common Agricultural Policy financed by the European Agricultural Guidance and Guarantee Fund (EAGGF), European Union expansion to 15 members	Support prices are higher than world prices. Unlimited purchase guarantee Production quotas for certain products, including milk and sugar.
1992-1999	MacSharry Reform Common Agricultural Policy, EU Expansion 1995 (Austria Finland, Sweden), Uruguay Round Agreement on Agriculture	A shift from crop support through prices to producer support through income-supporting measures, with the reduction in intervention prices, offset by increased direct aid or per-hectare animal payments.
2000-2001	Agenda 2000 CAP Reform: Common Agricultural Policy (Rural Development) is divided into Pillar 1 and Pillar 2	Further lowering of EU market support prices in closer alignment with world prices. It is offset, in part, by direct assistance to producers in the form of the initial introduction of mandatory environmental cross-compliance.
2003-2008	Fischler Reform: Pillars 1 of the Common Agricultural Policy (funded by EAGF) and (funded by the European Agricultural Fund for Rural Development EAFRD), Enlargement of the EU 2004 (Malta, Cyprus ¹ , Estonia, Latvia, Lithuania, Poland, Czech Republic), Slovakia, Slovenia, Hungary), and 2007 (Bulgaria and Romania)	Decoupling much of Common Agricultural Policy support from the volume of production, with a constant single farm payment (SPS) introduced based on historical references. Cross-compliance with environmental and public health objectives is Mandatory for receiving full payments. Single common market organization (CMO) reform programs launched for cotton, hops, olive oil, tobacco, sugar, fruit, vegetable, and wine regimens
2009-2013	Health Check Common Agricultural Policy Pillars 1 and 2	Further reduction of EU market intervention for certain products, Phase-out of milk quotas, Unbundling, Integration of almost all payments into SPS, New cross-compliance requirements introduced
2013-present	2013 Reform. Common Agricultural Policy Pillars 1 and 2, EU Expansion 2013 (Croatia) and Contraction 2020 (United Kingdom)	Support converted to discrete assistance or multifunctional support (including basic payment, greening payment, small farmer payment, etc.). Consolidation of direct payments and market measures and two pillars of the Common Agricultural Policy under the two pillars of Pillar 1 and Pillar 2.
2021-2022	Transitional rules	Continuity of the 2014-2020 CTP rules and incorporation of new elements to ensure a smooth transition

Source: (European Parliament, 2021); (OECD, 2011)

4.1.1. EU agricultural support

Support for agriculture in the European Union, one of which is measured by the PSE producer support estimate, is close to the OECD average. EU support to producers as a percentage of gross farm receipts stabilized in 2010 at 19.2% since it started to fall to its lowest level in 2021 at 15.9%. Policy reforms over the past three decades have significantly reduced support for the industry and transformed the composition of support into less disruptive measures to production and trade. Another support measurement indicator used by the OECD to aid policy analysis is the Consumer Support Estimate (CSE). As a result of the policies implemented within a year, the Consumer Support Estimate is obtained by calculating the margin consisting of the difference between

the price at which the consumer reaches the agricultural goods and the market price that should be (Anonymous, 2008). When Table 3 is examined, it is seen that the EU's Consumer Support Estimate has negative percentage values. This means; refers to the relative tax imposed on the consumer. General Sector Service Expenses (GSSE) in 2019-21 averaged 12% of total support. While the relative importance of GSSE has slightly decreased over the past two decades, the composition of GSSE spending has changed. Spending on agricultural knowledge and innovation systems grew by nine percentage points to 51% of total spending in 2019-21. TSE's total support to the sector has decreased in relative terms in the last 20 years. In 2019-21, total support was estimated at 0.7% of GDP, compared to 1.0% in 2010-11.

Table 3. EU agricultural support by using Organization for Economic Cooperation and Development (OECD; 2022).

EU agricultural support EU- OECD - Total								
Years	Producer support (PSE), Million Euros	Producer support (PSE), % of gross farm receipts	Consumer support (CSE), Million Euros	Consumer support (CSE), % of agricultural consumption	General services support (GSSE), Million Euros	General services support (GSSE), % of total agricultural support	Total support (TSE), Million Euros	Total support (TSE), % of GDP
2010	188 393	19.2	75 724	-8.6	35 084	13.73	338 542	0.747
2011	186 655	17.8	76 773	-7.3	35 173	13.76	355 384	0.729
2012	207 695	18.2	84 910	-7.9	36 780	13.04	362 419	0.745
2013	187 198	16.9	89 526	-6.1	38 032	14.47	348 968	0.709
2014	180 789	16.4	78 194	-5.8	33 483	13.37	332 362	0.661
2015	198 856	17.0	84 977	-6.1	37 486	13.41	310 004	0.655
2016	205 281	17.8	86 240	-7.2	38 830	13.52	317 645	0.655
2017	198 457	16.9	87 183	-6.8	39 654	14.16	315 619	0.624
2018	203 196	17.6	92 504	-7.2	38 301	13.62	331 965	0.621
2019	217 893	18.1	93 906	-7.0	39 687	13.29	334 155	0.619
2020	221 527	18.2	91 254	-5.7	40 425	13.21	348 628	0.665
2021	207 477	15.9	82 848	-3.6	37 015	12.38	353 518	0.612

Source: OECD;2022

4.1.2. EU Domestic policy developments

EU members' agriculture and rural development budget in 2021 was €55.71 billion (\$65.5 billion), a small increase of €310 million²¹ compared to 2020. Total expenditure under Pillar 1 was €40.4 billion (\$47.5 billion), with €15.3 billion (\$18 billion) (23.2%) and 76.8% allocated to Pillar 2. , The European Commission presented an Action Plan for the development of agricultural production (EC, 2021) on March 23, 2021. Its overall goal is to increase the production and consumption of organic agricultural products, to reach 25% of organic farmland by 2030, and to improve aquaculture. is to increase significantly.

23 actions have been proposed to ensure balanced growth in the sector, which is structured around three axes: increasing consumption, increasing agricultural production, and improving the sustainability of the agricultural sector. Some EU Member States have also announced initiatives or support for their national agricultural sectors. For example, Denmark has allocated Danish Kroner 3.6 billion (€484 million, US\$569 million) to support farmland to help with its goal of doubling farmland by 2030. Its strategy with aim of doubling domestic consumption and agricultural exports.

4.2. USA Agricultural Support Policy Trends

The United States is one of the most important producers of agricultural commodities in the world, and have a large domestic market, and also it is the world's largest exporter of agricultural products. An omnibus legislative set of packages known as the Farm Bill primarily governs agricultural policy support in the United States. In the United States of America, 79% of the budget of the last (2014-2020) Agriculture Law (Farm Bill) is close to one trillion dollars and is to the supplementary food support program as consumption support, 9% to crop insurance supports, % to crop supports. 6, 5% is spent on protection support, and 1% on other sector programs (OECD, 2022).

Farm Bills let authorize agricultural and food policies in areas including nutrition assistance, crop insurance, commodity support, conservation, and

agricultural research. Historically, the commodity support component of Farm Bills has focused on stabilizing and increasing farm income through price and income support for a particular group of commodities, including but not limited to corn, and soybeans, to aid economic recovery and development during the Depression and post-war periods, wheat, cotton, rice, peanuts, dairy products, and sugar (OECD, 2011).

Reforms continued and followed with subsequent Farm Bills. The 1996 Farm Bill reformed income support programs by replacing target prices, price-based deficit payments, and acreage controls with historically based direct payments independent of current agricultural production. The 2014 Farm Act ended these direct and countercyclical payments, but continued direct income support to farmers based on historical production, with programs that triggered payments based on reference prices or income criteria. Like this, it also ended the dairy price support program, by replacing it with a premium - based milk - to feed margin protection program. The 2018 Farm Bill continued these programs with only small adjustments (Table 4).

The largest of the farm programs in the Farm Bill is the Federal Crop Insurance Program (FCIP), which was established in the 1930s in order to cover yield losses from most natural causes. The program's current form was authorized by the Federal Crop Insurance Act of 1980 and then modified by subsequent Farm Bills and another legislation program.

The 1980 Act introduced federal premium subsidies program and brought in private insurance companies (Approved Insurance Providers, or AIPs) in order to deliver crop insurance policies. Followed by the catastrophic (CAT) coverage level was created in 1994, under which 100 % of the premium is subsidized and products pay a fee for coverage of yield loss greater than 50 % at 55 % of the base commodity price. It also followed the Agricultural Risk Protection Act of 2000, which expanded the geographically determined availability of insurance, increased premium subsidy levels, and lifted restrictions on livestock insurance products.

Table 4
United States: Main agricultural policy trends

Period	Framework	Changes in agricultural policies
1980	Federal Crop Insurance Act of 1980 ¹	Introduced federal premium support for crop insurance (30% at the 65% coverage level) Created a public-private partnership with private insurance companies (Approved Insurance Providers), who became responsible for offering crop insurance policies crops
1985	Food Security Act of 1985	Marketing loans were created for cotton and paddy, market price support elements were removed from cotton and rice commodity loans, and Export Establishment. Development Program and Dairy Export Incentive Program. Established the Conservation Reserve Program (CRP)
1990	Food, Agriculture, Conservation, and Trade Act of 1990	Introduced 15 % " normal flex acres " and 10 % " flexible turning on demand. Marketing credit provisions were expanded to oilseeds in 1991 and to wheat and feed grains in 1993. Oilseeds and alternative crops were allowed to be planted on the land without loss of payment on the 0/85-92 schedule.
1994	Federal Crop Insurance Reform Act of 1994	Catastrophic crop insurance (CAT) coverage level set Higher premium subsidies (purchase coverage) for higher coverage levels

Table 4 (continue)

United States: Main agricultural policy trends

1996	Federal Agriculture Improvement and Reform Act of 1996	Crop shortage payments and benchmark prices have been replaced by fixed direct payments that are decoupled from current prices and production levels that will decrease over time. Removed most planting restrictions. Extended marketing credit provisions for most other covered crops and Alternative Direct Credit Deficiency Payments (LDP)
2000	Agricultural Risk Protection Act of 2000 ¹	It expanded the geofigureic accessibility of crop insurance, increased premium subsidy levels, and lifted restrictions on the development of livestock insurance products.
2002	Farm Security and Rural Investment Act of 2002	Annual declining Production. Flexibility Contract payments have been replaced by a fixed Direct Payments program. Created a Counter-Circular Payments program that triggers additional direct income support payments when prices fall below targets.
2008	Food, Conservation, and Energy Act of 2008	Direct Payment Retained, Countercyclical Payment, and Marketing Assistance Loan programs. Established Average Crop Revenue Election (ACRE) as an income-based alternative to the Countercyclical Pay Program Milk price support program baseline changed from milk price to dairy prices
2014	Agricultural Act of 2014	Agricultural Risk Coverage (PLC) and Agricultural Risk Coverage (ARC), which created the repealed Direct Pay, Countercyclical Payment, and ACRE programs: Additional Cover Option (SCO) Stacked Income Protection Plan (STAX) for American cotton, Extended Uninsured Crop Assistance Program (NAP)) Reconstructed protection conditionality requirements.
2018	Agriculture Improvement Act of 2018	Continued and followed by 2014 Farm Bill programs with only minor changes, with some additions to programs for specialty crops, organic farmers, local and regional markets, and beginning, a military veteran and minority farmers.

Crop insurance law.

Source: Congressional Research Service (2018), OECD (2011; 2014 201951), USDA ERS (2020).

4.2.1. USA Support for agriculture

In the USA, the support provided to agricultural producers is below the OECD average. Producer support was on average 11% of gross revenues in 2019-2021, well below 20% measured in the mid-1980s and early 2000s, but higher than a decade ago. The share of the most potentially distorting transfers was 25% in 2019-2021, also below the OECD average, and half of its maximum value. The prices received by farmers in 2019-21 were 3% higher on average than in the world

market, while they had been 11% higher in 2000-2002. US domestic food assistance programs that support consumers account for nearly half of total support to US agriculture Expenditures for general services (GSSE) were equivalent to 2.6 % of the value of production in 2019-21, and total support to agriculture was 0.5 % of GDP in 2019-2021. In the period from 2010 to 2021, there was a decrease in total support for agriculture (TSE % of GDP), 0.530% to 0.454% respectively. On the other hand, the US records positive CSE rates, which means that its consumers are not taxed

Table 5

USA agricultural support by using Organization for Economic Cooperation and Development (OECD; 2022).

USA Support for agriculture								
Years	Producer Support (PSE), Million Euros	Producer Support (PSE), % of gross farm receipts	Consumer Support (CSE), Million Euros	Consumer Support (CSE), % of agricultural consumption	General Services Support (GSSE), Million Euros	General Services Support (GSSE), % of total agricultural support	Total Support (TSE), Million Euros	Total Support (TSE), % of GDP
2010	21 517	8.0	24 840	14.4	7 513	12.5	79 447	0.530
2011	21 957	7.5	28 655	14.9	4 136	7.0	81 642	0.525
2012	26 054	7.9	31 632	14.5	4 741	7.0	86 732	0.535
2013	21 042	6.7	34 383	17.4	7 682	11.8	86 340	0.514
2014	28 745	8.7	28 520	13.7	5 819	8.3	92 574	0.528
2015	32 540	8.9	32 670	14.2	7 834	9.5	91 523	0.502
2016	31 524	9.1	32 882	16.1	8 960	10.9	91 316	0.487
2017	28 396	8.2	30 401	14.1	9 437	12.0	88 730	0.454
2018	35 243	10.5	28 164	13.7	9 222	11.1	98 303	0.477
2019	44 909	12.7	29 455	13.2	10 048	10.6	106 492	0.497
2020	42 880	11.6	39 203	17.7	8 315	8.8	107 458	0.514
2021	44 852	10.5	49 863	21.1	8 848	8.2	127 087	0.554

Source: OECD;2022

4.2.2. USA Domestic policy developments

Policy developments in the United States in 2021 continued to focus largely on helping agricultural producers, consumers and the agri-food sector cope with the effects of the COVID-19 pandemic, with several new programs and initiatives launched to strengthen supply

chains and address inequalities. in previous producer support and promoting food and nutrition security. After the recovery, new programs or initiatives were launched to help ensure that USDA programming is focused on ensuring that a more resilient industry emerges from the crisis by improving environmental sustainability and

changing the effects of climate change (OECD, 2021). The only policy change to direct payment schemes in 2021 was the establishment of the Additional Program in December 2021 to allow small and medium-sized dairy businesses weighing less than 5 million pounds (2,268 million kg). Established production history for registration. Formula based additive production using 2019 milk sales. Additional DMC coverage was available for calendar years 2021 and 2022 and will also be available in 2023 and participation operations will be eligible to receive retroactive additional payments for 2021.

4.3. Turkey Agricultural Support Policy Trends

When we look at the general structure of agricultural support in the world, it is seen that specially developed countries do not support it, but these countries provide serious support. However, within the framework of the World Trade Organization (WTO) Agriculture Agreement, a change is observed in the support instruments, and in this context, it is requested to remove the supports that distort the trade. It is observed that there is a shift towards support for the development of the environment and rural areas instead of support related to production.

When we look at the history of agricultural support in Turkey, it is possible to examine the subject in 3 periods: support before 1980, support between 1980-2000, and support after 2000.

1. *Supports before 1980:* - It can be said that the first application in terms of support in the agricultural sector was in the form of the refund of the tax collected from fuel and oil. In accordance with the Law enacted in 1926, the tax collected from the fuel spent in agricultural activities was returned to the producers. The first support application in terms of the product was in wheat in 1932 through Ziraat Bank. This support was later called market price support. With the establishment of the Turkish Grain Board (TMO) in 1938, this task was assigned to TMO (Yentürk et al. 2004). Another support was the subsidies given at the stage of input supply and product evaluation. In this period, support was made by giving important agricultural inputs such as chemical fertilizers, chemical pesticides, and seeds to producers at a lower price than the market price.

2. *Supports between 1980-2000:* - With the transition to a free market economy after 1980, the liberalization process started and the state's support for the agricultural sector decreased (Akbulut 2015). In particular, as a result of the Decisions taken on January 24, 1980, a foreign policy was followed in the Turkish economy. The agricultural sector was also affected by these policies. In Turkey, which has opened up to a market economy, the breezes of liberalization have shown themselves and it has been preferred to move away from supportive policies by reducing interventions in agriculture. As a result of the narrowing of interventions such as price support policies, input supports, low-interest loans, and the privatization of agricultural SEEs, the agricultural sector was tried to be reshaped. Another turning point in this period was the Decisions taken on April 5, 1994.

The scope of supported products has been narrowed down to cereals, sugar beet, and tobacco. In 1993, 24 products, in 1994 8 products, and in 1995 7 products were included in the scope of support.

3. *Supports after 2000:* - In the 2000s, reforms were sought in the agricultural sector in Turkey. There are 4 elements in the search for reform: WTO Agricultural Agreement provisions, compliance with the EU Common Agricultural Policy, IMF and World Bank policy recommendations, and Turkey's own conditions and needs. Fundamental policy changes, initiated with the title of reform in agricultural policies, have been driven by external influences rather than internal reasons that have been valid for years. As a matter of fact, among the commitments made to the IMF for the stand-by agreement in December 1999, the direction of change in support policies in agriculture was determined (Olhan 2012).

In general, the measures proposed to Turkey were to reduce support purchases, lower support prices, strengthen the market economy, and provide support to producers through direct payments. In this period, reducing the intervention of the state in the market, reducing the public finance burden, and reducing income inequality were the main objectives of the support. TRUP, which started to be implemented in 2001, can be defined as the instrument that has had the greatest impact on Turkey's agricultural policies since the 2000s. TRUP was conducted in conjunction with the World Bank as a follow-up to the Economic Reform Loan. It is to use policies that will plan to improve a situation that can be given to agriculture for basic purposes, to provide financial support to producers in the transition process, and to accelerate the privatization process of organizations such as TEKEL (cigarettes and alcohol), ÇAYKUR, sugar factories, TMO, which started in 1998. In the context of monetary support, producers were supported with DGD (Demirdöğen and Olhan 2014). It has been decided to give DGD instead of price, input, and credit support. However, the loan supports, which were abolished with DIS, started again in 2006, and diesel and fertilizer support in 2007. The most important written document on agricultural support in Turkey is Agricultural Law No. 5488, which was enacted in 2006. It is seen that in an important part of the law, there are statements about support practices. While subjects such as the purpose and principles of agricultural support, agricultural support tools, and application principles are specified in the Law, it can be said that the most important point open to discussion is related to the support budget. Article 21 of the Law states that "Financing of agricultural support programs is provided from budget sources and external sources. The resource to be allocated from the budget cannot be less than 1% of the GDP.

However, when the ratio of the supports directly reaching the producer to the GDP is examined, it is seen that it changed between 0.5-0.67% between 2006 and 2014 (0.56% in 2014). Data for 2015 on this subject have not been disclosed yet. However, considering the GDP and the agricultural support amounts announced by

the Ministry of Food, Agriculture, and Livestock (MFAL) in the Central Government Budget for 2016 announced by the Ministry of Finance, it becomes clear that the support rate for 2016 will be 0.52%. When this calculation is made by zeroing VAT on agricultural loan subsidies, intervention purchases, and financing, of agricultural SEEs, fertilizer, and feed, it becomes 0.79%. As can be seen, the 1% rate envisaged in the Law will not be achieved in 2016.

4.3.1. Turkey's Support of agriculture

As a result of the developments in the world, there have been radical changes in agricultural policies in Turkey, but it is understood that there has not been enough change in the budget of support policies over the years, since the current value has increased by 8.05 times and the real value has increased by only 2.15 times. 2019. In Turkey, 13% of the gross production value obtained as a result of the agricultural policies implemented in the agricultural sector, 12% in the USA, and 19% in the EU are formed. Considering the shares of agricultural support groups in total supports, the ratio of supports in 2018 was 27.0% livestock supports, 26.0% difference

payment support, 25.0% field-based supports, 8.0% other/ compensatory payments, 8.0% agricultural insurance supports, and 7.0% rural development supports. When Table 6 and figure 3 are examined; Turkey's producer support estimation (PSE) in 2021 shows that 15.1% of the gross production value obtained is a result of the agricultural policies implemented. Turkey recorded the highest level of PSE in 2010, which means that Turkey farmers are the most protected.

Therefore, the support level of the Total Support Estimate (TSE) of GDP varies from year to year and was decreasing, and it can be said that while it was above the EU in the period from 2010 to 2021, it decreased rapidly after 2017. General support to the sector (GSSE) was 15.6 % of the value of agricultural production in 2021, down from 17.86 % in 2013. Of the observed periods, Turkey has a negative value of CSE, which means that their consumers are more taxed. And the highest negative CSE value recorded in the observed period was in 2020 at 26.7%, which means that Turkey consumers are taxed the most

Table 6

Turkey's agricultural support by using Organization for Economic Cooperation and Development (OECD; 2022).

Years	Producer Support (PSE), Million Euros	Producer Support (PSE), % of gross farm receipts	Consumer Support (CSE), Million Euros	Consumer Support (CSE), % of agricultural consumption	General Services Support (GSSE), Million Euros	General Services Support (GSSE), % of total agricultural support	Total Support (TSE), Million Euros	Total Support (TSE), % of GDP
2010	18 743	30,2	-13 578	-26,7	2 086	10,02	27 587	3,54
2011	15 034	24,9	-9 873	-20,2	2 421	13,87	24 272	2,88
2012	14 772	23,4	-9 218	-18,4	1 722	10,44	21 200	2,40
2013	11 411	20,9	-6 372	-15,3	2 481	17,86	18 442	1,92
2014	13 289	26,1	-8 400	-21,5	2 290	14,70	20 670	2,20
2015	15 792	26,4	-10 066	-22,4	2 571	14,00	20 371	2,35
2016	17 060	29,4	-11 632	-24,5	2 428	12,46	21 551	2,48
2017	13 059	23,8	-8 382	-19,0	2 508	16,11	17 549	2,04
2018	7 065	15,2	-4 139	-10,7	1 852	20,77	10 523	1,35
2019	8 751	17,4	-5 455	-13,0	973	10,01	10 885	1,43
2020	13 738	26	-5 425	-13,3	894	6,11	16 673	2,31
2021	6 313	15,1	-4 637	-12,4	1 167	15,60	8 846	1,15

Source: OECD;2022

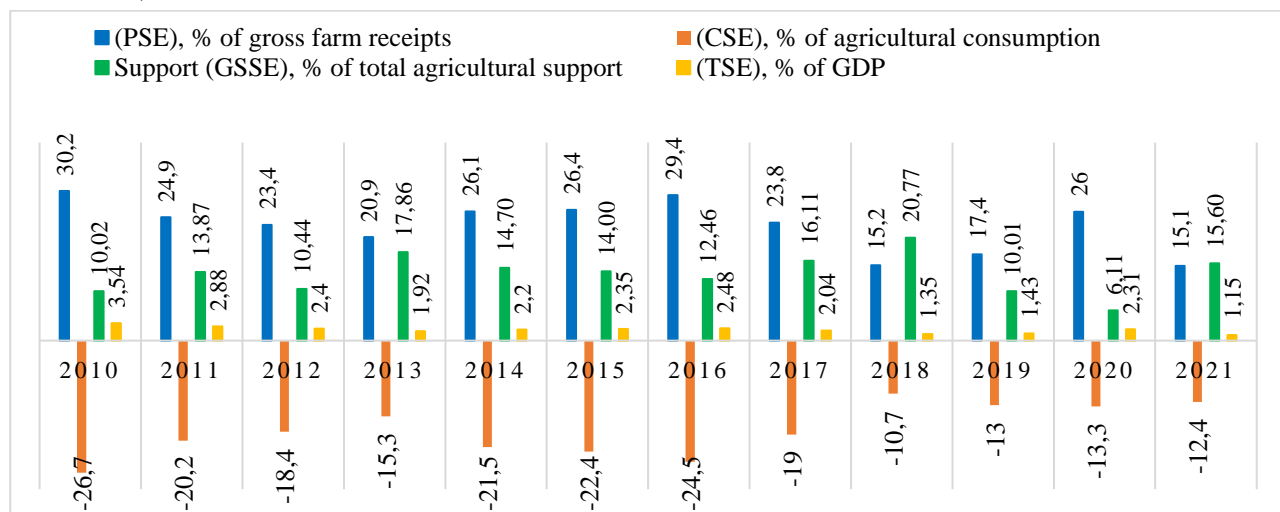


Figure3

Turkey's agricultural support by using Organization for Economic Cooperation and Development (OECD;2022).

On the other hand, when we look at it the resource allocated to agriculture by the Central Government Budget in 2019 increased to 26.5 billion TL. In this allocated resource; 16.1 billion TL for agricultural support

programs, 5.3 billion TL for agricultural loan subsidies, intervention purchases, financing of agricultural SEEs and export supports, and 5.1 billion TL for agricultural sector investment appropriations (Anonymous 2020b).

Table 7

Resources Allocated to Agriculture in Turkey

Resources Reserved for Agriculture	2019 (Billion TL)
Agricultural Support Programs	16,1
Agricultural Credit Subsidies, Intervention Purchase, Export and Financing of Agricultural SOEs	5,3
Investments	5,1
Total	26,5

Source: Anonymous 2020b

4.3.2. Domestic policy developments

Global markets are becoming increasingly sensitive to environmental performance. In particular, the EU Green Deal will affect Turkey, both as a candidate country of the EU and as a Customs Union partner. In light of this, the government considers that the green transformation of the Turkish economy and industry is necessary and essential for sustainable growth, export competitiveness, and for preserving and deepening Turkey's integration with the EU market. In response to these international market changes, Turkey adopted its own Green Deal Action Plan, which was published in the official gazette in July 2021. This action plan includes goals and actions related to sustainable agriculture. Reducing the use of pesticides, antimicrobial and chemical fertilizers, improving organic production, increasing the use of renewable energy in agriculture, and better management of waste and residues are the main actions envisaged.

Turkey prepared Turkey's National Road in 2021 as part of the UN Food Systems Summit. Turkey's national path includes 117 actions linked to 10 key priority areas with five Summit action paths in order to transform food systems and achieve Sustainability Development Goals by 2030.

The main priority areas are:

- Promote equitable access to safe and nutritious food, especially for vulnerable groups.
- Improving public health and food safety and strengthening inspections and controls through innovative methods.
- Promote sustainable supply and value chain in the agri-food sector and reduce food loss and waste.
- To increase consumer awareness and promote sustainable consumption.
- To develop production models compatible with climate change.
- To increase using water resources more efficiently.
- To manage natural resources in a more sustainable way.
- To develop a more inclusive policy for disadvantaged groups in the agri-food sector.
- Increasing rural liveliness.

- Improve building the resilience of food systems and food security against climate change, natural disasters, and unexpected crises.

Coverage of state-supported agricultural insurance continues to expand Income Protection Insurance is offered as a pilot project to wheat producers in Konya as of 2021-22.

Turkey's Agricultural Drought Strategy and Action Plan, 2018-22" has entered its final year. Work continues under five headings: i) drought risk forecasting and crisis management; ii) sustainable water supply, iii) effective management of agricultural water demand, iv) Increasing support for R&D activities, training and extension service programs and v) strengthening institutional capacity As part of the strategy, drought management plans for 25 basins and 15 such plans between 2014 and 2021 to be completed by the end of 2023 were completed.

Responsible institutions should report on the implementation of the Management Plans semi-annually. Within the scope of the "Support Program for Investments in Rural Development", 50% support is provided for the installation of modern irrigation systems (drip or sprinkler). Until the end of 2021, approximately 330,000 producers were supported with grants and loans, and modern irrigation systems were installed on a total area of 1.12 million hectares. Since 2003, the use of closed system irrigation projects has accelerated to reduce losses and leaks. In 2003, only 6% of the irrigated area used piped irrigation networks, while in 2020 this rate increased to 29%.

During the 2021 irrigation season, a pilot study began charging higher water use service fees when more water was used. This pilot will be extended to all irrigation facilities with adequate infrastructure and suitable methods. Storage facilities and metering facilities of 500 hectares and above have been established on one hectare that is centrally monitored in irrigation networks. It measures the flow of water during storage, transmission, distribution and discharge. These plant installations will eventually support volume-based water pricing.

5. Results and Recommendation

The fact that the countries of the world have different economic structures can be considered as the reason for

the different agricultural support policies in force. Changes in the world economy and globalization trends in the 1980s also affected the agricultural sector and caused major transformations in agricultural policies throughout the world.

In most of the world's countries, the change in agricultural support in the 2000s occurred in the form of direct income support, support that reduces the effects of risk and uncertainty, rural development support and even the substitution of a single payment system instead of price and input supports that interfere with the market. EU countries and the USA have applied direct income payments independent of production, which do not direct the market, in order to prevent production surpluses and have gradually expanded this application area in the last 20 years. In addition, the EU has turned to environmental protection and rural development policies. In the EU, which has made long-term budget creation plans after 2013, the benefit of farmers from the support system since 2013 has been linked to the fulfillment of certain environmental, animal, and food safety standards. Policies that support food consumption in the world, especially in the USA, have objectives that both ensure the raising of healthy generations and indirectly support agricultural production by increasing domestic demand. Policies such as food subsidies, which have a large share in the support of the US Agricultural Law,

It is seen that the trends in support policies in the world do not interfere with the market, aim to improve the agricultural structure, and therefore aim to create a more competitive agricultural sector. It is known that developing countries, which go one step further, have achieved agriculture without support by making the necessary structural and institutional improvements and are in the position of important agricultural product exporters in the world. In the period from 2010 to 2021, there was a consequently decrease in total support estimation (TSE), producer support estimation (PSE), and, consumer support estimation (CSE) in all countries covered by the research (TR, EU, USA). On the other hand, there was an increase in allocations for general services in agriculture (GSE), primarily due to the obligation to reduce market-price support and support to farmers. In addition, Of the observed countries, only the USA has a positive value of CSE, which means that their consumers are not taxed. While Turkey recorded the highest negative CSE values in the observed period, which means that Turkey consumers are taxed the most.

Agricultural support should be in effect for a long time without changing in order to direct the farmers in the desired direction. If the support is determined by changing every year with annual regulations, farmers cannot make long-term plans, projects, and programs, and cannot make investment decisions. Therefore, as in the United States and the European Union, it can be

ensured that the farmers are directed to structural improvements by planning and applying the support for 7 years or so, without changing.

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