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The status of farmers benefiting from agricultural support: Eastern Mediterranean Region – Mersin

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Abstract

Objective: The presence of risks and uncertainties in agriculture underscores the importance of support mechanisms for ensuring the sustainability of farmers' agricultural activities. Mersin Province possesses high potential in terms of agricultural output. This study aims to examine the relationship between the demographic characteristics of farmers in rural Mersin, the size of agricultural holdings, and the extent to which farmers benefit from agricultural support instruments. However, the scope of support mechanisms considered in this study has been limited to those applicable within the research area.

Design/Methodology/Approach: In this study, data were collected through face-to-face surveys conducted with 297 farmers engaged in agricultural production within the borders of Mersin Province during the 2020 period. The survey results were evaluated using the Chi-square analysis. The farmers' utilization of agricultural support schemes was analyzed in relation to the size of their agricultural holdings and their demographic characteristics.

Findings: The study revealed that determining the amount of agricultural support based on farm size specifically, increasing the support amount as farm size decreases can effectively guide production activities through support mechanisms. It was also determined that the type of supported products and the amount of support should be announced prior to the planting season, and payments should be made before planting begins.

Originality/Value: Studies that examine how agricultural supports are utilized based on farmers' demographic characteristics and farm sizes are limited in the literature in Türkiye. The absence of a study on this topic specifically in Mersin province highlights the originality of this research.

Keywords: Agricultural enterprise, agricultural support, farmer behavior, farm size, Mersin.

Çiftçilerin tarımsal desteklemeden yararlanma durumu: Doğu Akdeniz Bölgesi-Mersin

Özet

Amaç: Tarımda risklerin ve belirsizliklerin olması, çiftçilerin tarımsal faaliyetlerinin sürdürülebilirliği açısından desteklemeleri önemli hale getirmektedir. Mersin ili tarımsal çıktı açısından yüksek potansiyele sahiptir. Bu araştırmada Mersin kırsalında "çiftçilerin demografik" özellikleri ile "tarım işletmelerinin büyüklüğü" ve "destekleme araçlarından" çiftçilerin yararlanma durumlarının ortaya konulması amaçlanmıştır. Ancak destekleme araçları, araştırma alanında geçerli olan araçlarla sınırlandırılarak incelenmiştir.

Tasarım/Metodoloji/Yaklaşım: Bu çalışmada, Mersin il sınırları içinde 2020 döneminde tarımsal üretim faaliyetinde bulunan 297 çiftçiyle yüz yüze yapılan anketlerle veriler toplanmıştır. Anket sonuçlarının değerlendirilmesinde Ki-kare analizi kullanılmış; çiftçilerin tarımsal desteklemelerden yararlanma durumu, tarımsal işletme büyüklüğüne ve çiftçilerin demografik özelliklerine göre analiz edilmiştir.

Bulgular: Çalışmada; destekleme miktarının işletme büyüklüğüne göre belirlenmesinin yani işletme ölçeği küçüldükçe destekleme miktarının artması, destekleme araçları ile üretim faaliyetlerinin yönlendirilebileceği, desteklenecek ürün ve destek miktarının ürün ekiminden önce açıklanması ve ödemelerin ekimden önce yapılması gerektiği saptanmıştır.

Özgünlük/Değer: Türkiye'de tarımsal desteklemelerin çiftçilerin demografik özellikleri ve tarım işletmelerinin büyüklüğü göre destekleme araçlarından yararlanma durumlarının ortaya koyan çalışmalar literatürde sınırlıdır. Mersin ilinde bu konuda yapılan bir çalışma bulunmaması araştırmanın özgünlüğünü ortaya koymaktadır.

Anahtar kelimeler: Tarımsal işletme, tarımsal destek, çiftçi davranışları, işletme ölçeği, Mersin.

INTRODUCTION

Determining the factors influencing farmers' decisions regarding what to produce, how to produce, and how much to produce is crucial for the development of effective policies. Due to the complexity of the decision-making process and the multitude of factors involved, there is no universal technique that guarantees optimal decision-making (Lee et al., 1999). While certain decisions in the decision-making process are made consciously, others are influenced by subconscious factors (Sadler-Smith & Sparrow, 2008). In particular, for enterprises whose livelihood depends solely on agriculture, various elements such as agricultural subsidies, natural conditions, market dynamics, marketing challenges, and price fluctuations in agricultural products significantly influence their decision-making processes. Boratav (1980, p. 92) also emphasizes that relative prices play a decisive role in farmers' choices regarding input use and crop composition. Jaffe (1989) highlights the importance of price stability in production decisions, while Briggs (1991) identifies soil suitability as a critical factor. Similarly, Talawar and Rhoades (1998) underscore the significance of land conditions as a primary determinant. Günden & Miran (2008) and Yıldırım (2024) identified that farmers are primarily concerned with the question of which crops and quantities yield the highest income. Abacı (2018) also indicates that farmers tend to prefer crops with the highest productivity and profitability, while physical factors such as soil type, structure, and land morphology also play a significant role. İkikat Tümer et al. (2012) emphasize that farmers' income influences their decisions regarding what and how much to produce in the subsequent year. Furthermore, various studies have concluded that, in addition to economic factors, socio-psychological characteristics also significantly affect farmers' decision-making processes (Featherstone & Goodwin, 1993; Stirm & Pierre, 2003; Iqbal et al., 2006; Bragg & Dalton, 2004).

As a result of leaving the agricultural sector to the natural functioning of the capitalist economy, it has become increasingly difficult for farmers who rely solely on agriculture for their livelihood to sustain their activities. Following the implementation of neoliberal policies in the 1980s, agriculture has distanced itself from national policies and come under the control of transnational corporations and organizations. Neoliberal policies in Türkiye have rendered farmers dependent on industrial agricultural inputs, and subsequent modifications to agricultural support policies have predominantly favored large-scale enterprises. The initial measure implemented as part of the neoliberal agenda on January 24, 1980, was the restriction of the scope of support procurement. Whereas support procurement initially covered 24 products in the early 1980s, this number was reduced to 10 products by 1990. During this period, not only product price supports but also subsidies on input costs such as fertilizers and diesel were reduced (Önal, 2012:138). In particular, following the commitments made to the IMF in the wake of the 1994 economic crisis, agricultural supports and input subsidies were limited, leading to the determination of agricultural input prices by market mechanisms. Subsequently, with the commitments made in 1999, nominal freezing of input subsidies occurred in 2001 and 2002, followed by their complete elimination.

The structural adjustment process, which had been in place since 1980, was accelerated and expanded in scope following the February 2001 crisis, culminating in the integration into the international capitalist system with financial liberalization in 1989. With the 2001 crisis, the implementation of the production-independent Direct Income Support (DIS) program primarily benefited urban residents possessing large-scale landholdings. The DIS program was abolished in 2008. In other words, neoliberal economic policies have led to changes in Türkiye's agricultural support policies. Since the 2000s, agricultural supports in Türkiye have generally been provided in the form of support purchases/price supports, input subsidies, and product and credit supports. During the period between 2000 and 2009, DIS was provided. Currently, the agricultural sector in Türkiye is supported through various support mechanisms. Generally, these supports include Area-Based Payments, Biological and Biotechnical Control Support, Certified Seedling Production Support, Domestic Certified Seed Usage Support, Agricultural Extension and Advisory Support, among other agricultural-targeted supports, as well as Price Differential Payments and Livestock Supports.

The decision regarding crop production supports and certain other agricultural subsidies to be implemented between 2025 and 2027 was published in the Official Gazette dated August 29, 2024, and numbered 8859. Accordingly, for the first time, crop production supports were announced on a three-year basis and prior to the production period. The concept of "Basic Support" is defined in the communiqué titled "Communiqué on Crop Production Supports and Certain Other Agricultural Subsidies for the Years 2025–2027", which was published in the Official Gazette dated September 26, 2024, and numbered 32674. Under the new system, additional supports have been provided to producers engaged in planned production. Moreover, subsidies for the use of certified seeds, organic farming, and good agricultural practices have been enhanced. In addition, the price premium support (difference payment) has been revised, and a new scheme has been introduced to promote biological and biotechnical pest control by providing financial support ranging from 135 to 450 TRY per decare to producers utilizing pheromone traps.

Furthermore, items such as soil analysis, licensed warehouse rent, transportation and quality analysis supports, and organomineral fertilizer subsidies have been either newly introduced or strengthened within the system (Republic of Türkiye Ministry of Agriculture and Forestry, 2024).

In 2024, agricultural support measures were presented in a more comprehensive manner, both in terms of the allocated budget (91.6 billion TRY) and their content. The most significant increase was observed in deficiency payments (premiums). In area-based support schemes, the per-kilogram support amount was raised for numerous products. For instance, the support for wheat increased from 100 kuruş/kg to 175 kuruş/kg, and for barley, rye, etc., from 50 kuruş/kg to 75 kuruş/kg. In addition to fuel and fertilizer subsidies, the support amounts were also increased for items such as organic farming, good agricultural practices, biological and organic fertilizers, agricultural extension services, and the Farm Accountancy Data Network (FADN). Support has also been provided for shepherd employment and certified seed usage. In this context, area-based fuel and fertilizer subsidies were also granted in Mersin in 2024 for crops such as wheat, maize, cotton, sunflower, and paddy, with increased support amounts (Republic of Türkiye, Ministry of Agriculture and Forestry, 2024). However, this study limits its scope to agricultural support instruments that are applicable within the research area.

Mersin Province, with an area of 15,853 km², constitutes approximately 2% of Türkiye total land area. Of the total land, 21% is classified as agricultural land. Meadows and pastures account for 4% of the total agricultural land, while forests cover 52%. The arable land in Mersin comprises 21% (3,315.27 hectares) of the total area, with fruit cultivation representing the largest share at 44%, followed by field crops and vegetable production (MV, 2023). According to TurkStat, (2019), Mersin ranks fourth in terms of plant production value with 12.9 billion TRY, following Antalya, Konya, and Şanlıurfa. Given Mersin's high potential in the agricultural sector, determining the extent to which farmers benefit from agricultural support programs is crucial for enhancing the effectiveness of support policies, which serve as instruments for ensuring the sustainability of production. Within this context, the study aims to examine the relationship between farmers' demographic characteristics, the size of agricultural enterprises, and the extent of farmers' utilization of support instruments in rural Mersin.

MATERIALS AND METHODS

The study population consists of farmers registered in the Farmer Registration System (FRS) who engaged in agricultural production activities within the provincial boundaries of Mersin in 2020. Mersin comprises thirteen (13) districts: Akdeniz, Anamur, Aydıncık, Bozyazı, Çamlıyayla, Erdemli, Gülnar, Mezitli, Mut, Silifke, Tarsus, Toroslar, and Yenişehir. Mezitli and Yenişehir are central districts with limited arable land suitable for agriculture. Although some neighborhoods and villages within the Toroslar district engage in agricultural activities, the majority of the population resides in the district center. Therefore, Mezitli, Yenişehir, and Toroslar districts were excluded from the scope of the study. A total of 1,504 farmers registered in the Farmer Registration System (FRS) were identified across the remaining ten districts.

The sample size of the study was determined using the simple random sampling method. In research, the maximum sample size is typically 10% of the population, provided that the population does not exceed one thousand individuals (Sharma, 2021). In other words, the calculated 10% value should not exceed one thousand. This sample size enhances the representativeness of the sample and ensures more reliable results. Considering the possibility of incomplete responses in the surveys, the sample size was determined by selecting 20% of the farmers registered in the Farmer Registration System (FRS). Accordingly, neighborhoods representative of the agricultural structure of each district were identified, and the sample size representing the target population was calculated as three hundred and one (301). However, four (4) individuals did not participate in the study. Primary data were collected through face-to-face interviews and surveys conducted with two hundred ninety-seven (297) farmers registered in the Farmer Registration System (FRS) within the study area. The ethical approval for these survey forms was obtained from Mersin University Social Sciences and Humanities Ethics Committee dated 28.12.2021. Additionally, national and international publications, as well as reports and statistics from relevant national and international institutions and organizations, were utilized.

Quantitative data were entered using the SPSS software package for analysis. Descriptive analysis and the Chi-square test were employed to analyze the data in the study.

RESULTS AND DISCUSSION

Characteristics of agricultural enterprises in the study area

In Türkiye 80.7% of agricultural enterprises are classified as small-scale, being less than 100 decares in size. These small-scale farms cultivate 29.1% of the total agricultural land (TurkStat, 2018). Within the study area, small-scale enterprises constitute 94.6% of all farms, with 87.2% of these having an operational size below 100 decares (Table 1)

Table 1. Classification of agricultural enterprises by size (%)

	Area (decare)	Classification	Frequency	Percentage (%)
1	1- 499	Small Businesses	281	94.6
1.1	1-19	Dwarf Enterprises	160	53.9
1.2	20-49	Small Family Businesses	63	21.2
1.3	50-99	Medium-Scale Family Businesses	36	12.1
1.4	100-499	Large Family Businesses	22	7.4
2	500 - 4999	Medium-Size Enterprises	16	5.4
3	5000 and above	Large Enterprises	0	-

The average farm size in the study area is 36.5 decares, approximately half of the national average of 60.1 decares. Additionally, 19% of the farms possess a single land parcel, while the remaining 81% operate on multiple parcels. Farms with six or more land parcels constitute 18% of the total agricultural enterprises. The predominance of small family farms and the fragmented nature of these holdings in the study area contribute to low productivity levels. These farms continue agricultural production primarily through labor supplied by the farmer and their family, as small-scale farmers and their families accept low labor returns. Topçu (2008) noted that in Türkiye, small-scale farms sustain agricultural activities mainly to meet subsistence needs, with farmers and their families relying on this production for their livelihood. Similarly, in the study region, agricultural production persists as a labor-intensive activity carried out predominantly by the farmer and their family (96%).

In general, the characteristics and disadvantages of agricultural enterprises in Türkiye and specifically in the study area of Mersin necessitate the provision of targeted support to farmers.

Utilization of agricultural support by farmers participating in the study

In Türkiye, the formulation of agricultural support policies is influenced by agreements and obligations with international organizations such as the EU Common Agricultural Policy, IMF, World Bank, and WTO, as well as changes in the agricultural structure, climate change, and environmental issues (Ataseven et al., 2020). The agricultural sector is supported worldwide to ensure food supply security. Agricultural subsidies serve as an important tool to increase farmers' income (Wu et al., 2019). In this context, the Agricultural Law enacted in Türkiye in 2006 states that the budget allocation for agricultural supports shall not be less than 1% of the GDP, thereby declaring support for the agricultural sector. However, between 2010 and 2022, the share allocated to agricultural support payments ranged between 0.4% and 0.5% of GDP. In Türkiye, farmers can benefit from agricultural supports provided they are registered in the Farmer Registration System (FRS) (Republic of Türkiye, 2021).

Currently, area-based supports, biological and biotechnical application supports, other agricultural-purpose supports and incentives, and price differential payments are implemented in crop production; however, this study focuses on the support instruments utilized within the research area.

As shown in Table 2, 84.5% of the farmers in the study area benefit from agricultural supports. It was determined that farmers generally utilize ‘interest-subsidized credit’ support (78.7%) and ‘diesel and fertilizer’ support (61.7%). Considering that the sample group of the study consists of farmers registered in the Farmer Registration System (FRS), the 15.5% of farmers reporting that they did not receive any support payments suggests a lack of awareness regarding payments such as diesel and fertilizer subsidies directly credited to farmers’ accounts.

Table 2. Status of farmers' benefit from agricultural support

Supports	Frequency	Percentage %
Yes	251	84.5
Compensatory Payments	12	4.7
Premium Support	27	10.7
Seed Support	22	8.7
Seedling / Sapling Support	22	8.7
Diesel and Fertilizer Support	156	61.7
Soil Analysis Support	12	4.7
Interest Discounted Loan	199	78.7
Agricultural Consultancy	22	8.7
Agriculture Insurance Support	133	52.6
No	46	%15.5

The Ministry of Agriculture and Forestry has mandated soil analysis for agricultural lands exceeding 50 decares. However, in the study area dominated by small-scale farms, farmers do not typically conduct soil analyses. Considering the low utilization rate of 'soil analysis support' in the study area (4.7%), it can be inferred that farmers either lack awareness of the importance of soil testing or perceive it as unnecessary.

The utilization rate of agricultural insurance support in the study area was found to be relatively high at 52.6%. This can be explained by the requirement imposed by banks that farmers must have agricultural insurance to access low-interest credit support. Filli et al. (2015) reported a positive relationship between farmers' agricultural insurance uptake and their access to credit. Access to agricultural credit is a crucial tool for enhancing the productivity and efficiency of small-scale farmers, thereby contributing to poverty reduction and improving farmers' welfare levels (Ololade & Olagunju, 2013; Tüzün Rad & Aydoğdu, 2019).

Farmers' views on support policies

Within the sample group, 85.2% of farmers considered the input and product support to be inadequate, while 50.5% found the credit support insufficient (Table 3). Similarly, Özçelik & Özer (2006) stated that the amounts of fertilizer and fuel subsidies were inadequate to cover the production costs of farmers.

Table 3. Opinions on the amount of support

	Input and product support (%)	Credit support (%)
Adequate	6.1	25.9
Inadequate	85.2	50.5
Don't know and/or don't buy	8.7	23.6

Opinions on the announcement time of support payments

It was determined that the timing of support payments is also crucial for ensuring the continuity of farmers' production activities in the study area. Among the farmers, 39.1% (79 farmers) indicated that payments should be made before planting; 7.9% during the planting period; and 3.5% after harvest (Table 4.).

Table 4. Timing of the disclosure of agricultural support payments

	Frequency	Percentage %
Spring	25	12.4
Summer	20	9.9
Autumn	23	11.4
Winter	32	15.8
Before planting	79	39.1
Between planting and harvest	16	7.9
After harvest	7	3.5
Total	202	100.0
Missing System	95	
Total	297	

As presented in Table 5, the relatively even distribution of support payments across different seasons can be attributed to crop diversity and the practice of multiple harvests within a single year. Daldal (2016) also reported that farmers incur the highest expenses during the sowing and land preparation phases and prefer to receive support payments "before planting the crop." Based on these findings, it can be asserted that the timely announcement of support payments is crucial for ensuring the continuity of agricultural production activities.

Additionally, 25.5% of the farmers expressed that payments should again be made prior to planting.

Table 5. Timing of support payments

	Frequency	Percentage %
Spring	28	13.7
Summer	25	12.3
Autumn	21	10.3
Winter	26	12.7
Before planting	52	25.5
Between planting and harvest	29	14.2
After harvest	23	11.3
Total	204	100.0

Opinions on the amount of support and how payments should be made

The amount of agricultural support is significant as it directly influences farmers' cash flow and helps reduce their reliance on debt (Latruffe et al., 2010). In this study, 55.1% of participating farmers indicated that support payments should cover up to 50% of production costs. Additionally, 30.9% of respondents expressed a preference for reductions in input prices. These findings highlight that high input costs remain a primary concern for farmers in the region. Indeed, Kalabak & Aslan (2021) emphasized that when determining the components of agricultural support, measures should be taken to reduce farmers' production costs. In the research area, while farmers operating very small-scale farms were generally unable to propose alternative support mechanisms, those managing medium-sized enterprises expressed opinions suggesting the potential for different support strategies. Some of the identified approaches include:

- Providing support payments based on production quantity,
- Taking production costs into account when determining support amounts,
- Granting support to farmers who present invoices for the products they have produced,
- Disbursing payments according to the type of crop produced,
- Allocating support based on farm size, with small family farms receiving relatively more support than larger enterprises.

A statistically significant relationship was found between the preference for receiving support payments on a per-decare basis and the perception of credit support ($N = 216$; $\chi^2 = 7.405$; $df = 2$; $p < 0.05$).

Table 6. Agricultural support payments based on land area (decare) and credit support

			Credit Support			
			Sufficient	Insufficient	I don't know, I don't receive it	Total
Support payments should be made based on the decare	No	Count	20	52	27	99
		% within Subsidies Should Be Allocated on a Per-Decare Basis	20.2%	52.5%	27.3%	100.0%
		% within Credit Support	38.5%	42.6%	64.3%	45.8%
	Yes	Count	32	70	15	117
		% within Subsidies Should Be Allocated on a Per-Decare Basis	27.4%	59.8%	12.8%	100.0%
		% within Credit Support	61.5%	57.4%	35.7%	54.2%
Total		Count	52	122	42	216
		% within Subsidies Should Be Allocated on a Per-Decare Basis	24,1%	56.5%	19.4%	100.0%
		% within Credit Support	100,0%	100.0%	100.0%	100.0%

Among the farmers who stated that support payments should be based on land area (decare), 59.8% considered credit support to be insufficient. In the study region, larger-scale farms benefit more from credit support compared to very small and small family farms (Table 6). This can be explained by the fact that larger-scale farms have a greater need for credit support to expand their operations, invest in agricultural infrastructure, and undertake other agricultural investments.

Problems experienced by the participating farmers in the process of benefiting from support payments

In the study area, 48.1% of the farmers reported experiencing problems during the process of benefiting from support payments. It was observed that farmers often faced more than one issue. These problems can be categorized as follows: i) bureaucratic difficulties during the application process (19.9%), ii)high membership fees and other associated costs (15.2%), and iii) the belief that support payments would not be made (4.4%) (Table 7).

Table 7. Problems experienced by farmers in the process of benefiting from support payments

Problems	Percentage (%)
I have problems (Total)	48.1
Bureaucratic difficulties encountered	19.9
Length of the application period	10.8
High fees and other costs	15.2
Mortgage required in loan application	5.4
Land is shared	6.1
Officer apathy and ignorance	3.7
Low amount of support	13.1
Late payment of subsidy payments	3.0
I have no problems	51.9

Erdal & Gürkan (2013) and Aydın & Özkan (2017) identified the time-consuming nature of formalities and document preparation during the process of benefiting from support payments, as well as the insufficiency of the support amounts, as major issues. Similarly, according to Altıntaş et al. (2020), access to education on agricultural matters significantly influences farmers' ability to benefit from support programs.

In the implementation of agricultural support policies, consideration should be given to the farm size and the demographic characteristics of farmers in order to effectively achieve the intended objectives.

The relationship between benefiting from support without experiencing problems and agricultural farm size

A statistically significant relationship was found between experiencing no difficulties in benefiting from agricultural support payments and the size of agricultural enterprises within the sample group ($N = 297$; $\chi^2 = 31.583$; $df = 4$; $p < 0.05$).

Table 8. Farmers who do not experience difficulties in accessing agricultural supports and agricultural enterprise size

			Agricultural Enterprise Size					Total
			Dwarf Enterprises	Small Family Businesses	Medium-Scale Family Businesses	Large Family Business	Medium-Size Enterprises	
Those Who Do Not Experience Difficulties	No	Count	99	25	7	5	7	143
		% within I do not experience difficulties.	69.2%	17.5%	4.9%	3.5%	4.9%	100.0%
		% within Agricultural Enterprise Size	61.9%	39.7%	19.4%	22.7%	43.8%	48.1%
	Yes	Count	61	38	29	17	9	154
		% within I do not experience difficulties.	39.6%	24.7%	18.8%	11.0%	5.8%	100.0%
		% within Agricultural Enterprise Size	38.1%	60.3%	80.6%	77.3%	56.3%	51.9%
Total		Count	160	63	36	22	16	297
		% within I do not experience difficulties.	53.9%	21.2%	12.1%	7.4%	5.4%	100.0%
		% within Agricultural Enterprise Size	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Dwarf (small-scale) farms experience more difficulties compared to other farm types, while medium-sized family farms constitute the group facing the least challenges. Larger-scale farms have greater access to input supports such as seeds, pesticides, and fertilizers, as well as credit facilities (Aydın, 2001; Teoman, 2001). Similarly, in the

study sample, larger farms benefit more from agricultural support programs. Notably, farmers owning dwarf farms reported that some staff at the District Agriculture Directorate were unresponsive, attributing this to the small size of their land.

Relationship between agricultural farm size and utilization of agricultural supports in the study area

The size of agricultural enterprises affects the utilization of support payments. Analysis conducted in the study examining the relationship between farm size and difficulties experienced in benefiting from agricultural support payments revealed a statistically significant difference (N = 297; χ^2 = 31.583; df = 4; p < .05) (Table 8). The group experiencing the greatest difficulties in accessing support payments is the micro-enterprises, while medium-sized family farms constitute the group facing the least challenges. As the scale of the enterprise increases, farmers tend to benefit more from support payments. It has been determined that the generally low education level of farmers in micro-enterprises hinders their ability to utilize agricultural support. In this context, the number of agricultural enterprises benefiting from support payments according to their scale in the study area is presented in Table 9.

Table 9. Number of enterprises benefiting from subsidies by enterprise size

Types of Support	Business Size					
	Small Businesses				Medium-Size Enterprises	Large Enterprises
	Dwarf Enterprises	Small Family Businesses	Medium-Scale Family Businesses	Large Family Business		
Compensatory Payments	5	2	3	1	1	-
Premium Support	0	2	6	9	10	-
Seed Support	0	2	4	7	9	-
Seedling/sapling Support	15	2	2	2	1	-
Diesel and Fertilizer Support	58	35	28	21	14	-
Soil Analysis Support	5	1	4	2	0	-
Agricultural Consultancy Support	6	7	5	2	2	-
Agriculture Insurance Support	59	32	21	10	11	-
Interest Discounted Loan Support	101	42	27	15	14	-

In this study;

A significant difference was found between "enterprise size and product support" (N = 253; χ^2= 58.279; sd 4; p< .05). This is as follows;

Table 10. Agricultural enterprise size and utilization of product support

			Utilization of Product Support		
			No	Yes	Total
Agricultural Enterprise Size	Dwarf Enterprises	Count	121	5	126
		% within Total Enterprise Size	96.0%	4.0%	100.0%
		% within Utilization of Product Support	56.0%	13.5%	49.8%
	Small Family Businesses	Count	53	3	56
		% within Total Enterprise Size	94.6%	5.4%	100.0%
		% within Utilization of Product Support	24.5%	8.1%	22.1%
	Medium-Scale Family Businesses	Count	25	9	34
		% within Total Enterprise Size	73.5%	26.5%	100.0%
		% within Utilization of Product Support	11.6%	24.3%	13.4%
	Large Family Business	Count	13	9	22
		% within Total Enterprise Size	59.1%	40.9%	100.0%
		% within Utilization of Product Support	6.0%	24.3%	8.7%
	Medium-Size Enterprises	Count	4	11	15
		% within Total Enterprise Size	26.7%	73.3%	100.0%
		% within Utilization of Product Support	1.9%	29.7%	5.9%
Total		Count	216	37	253
		% within Total Enterprise Size	85.4%	14.6%	100.0%
		% within Utilization of Product Support	100.0%	100.0%	100.0%

According to the results obtained;

- A significant difference was observed between dwarf enterprises and both medium family enterprises and medium-sized enterprises,
- A significant difference was found between dwarf enterprises and large family enterprises,
- Significant differences were also observed between small family enterprises and medium family enterprises, as well as between medium-sized enterprises and large family enterprises.

In other words, it was determined that medium-sized enterprises benefit the most from product support, while dwarf enterprises benefit the least. Similarly, Gürkan (2012) stated in his study that the utilization of agricultural support varies according to the size of the agricultural enterprise.

In the study, a statistically significant relationship was found between "enterprise size and input support" (N = 253; $\chi^2 = 25.800$; df = 4; $p < 0.05$).

Table 11. Agricultural enterprise size and utilization of ınput support

			Utilization of Input Support		
			No	Yes	Total
Agricultural Enterprise Size	Dwarf Enterprises	Count	56	70	126
		% within Total Enterprise Size	44.4%	55.6%	100.0%
		% within Utilization of Input Support	66.7%	41.4%	49.8%
	Small Family Businesses	Count	21	35	56
		% within Total Enterprise Size	37.5%	62.5%	100.0%
		% within Utilization of Input Support	25.0%	20.7%	22.1%
	Medium-Scale Family Businesses	Count	5	29	34
		% within Total Enterprise Size	14.7%	85.3%	100.0%
		% within Utilization of Input Support	6.0%	17.2%	13.4%
	Large Family Business	Count	1	21	22
		% within Total Enterprise Size	4.5%	95.5%	100.0%
		% within Utilization of Input Support	1.2%	12.4%	8.7%
	Medium-Size Enterprises	Count	1	14	15
		% within Total Enterprise Size	6.7%	93.3%	100.0%
		% within Utilization of Input Support	1.2%	8.3%	5.9%
Total		Count	84	169	253
		% within Total Enterprise Size	33.2%	66.8%	100.0%
		% within Utilization of Input Support	100.0%	100.0%	100.0%

Accordingly;

- A significant difference was observed between dwarf and small family farms compared to medium-sized family farms, with the latter benefiting more from input support (Table 11).
- A significant difference was found between large family farms and medium-sized farms, with large family farms benefiting more from input support compared to medium-sized farms (Table 11).

In other words, the group that benefits the most from input support is large family farms. The level of utilization of input support increases as the enterprise size grows. Abay et al. (2017) also stated that enterprise size positively influences the access to input support (such as fertilizer, diesel, etc.).

The decree regarding agricultural supports to be provided in 2022, published in the Official Gazette dated October 20, 2022, stipulates that diesel and fertilizer support payments will not be made in cash to farmers. Instead, the amount of support granted to the farmer will be loaded onto the farmer's Ziraat Bank card, which can only be used for purchasing diesel and fertilizer. This regulation has prevented farmers with other needs from accessing the funds on their cards, placing especially small-scale farms at a disadvantage. The finding that large family farms are the primary beneficiaries of input support in the study can be attributed to the effects of this decision.

Demographic characteristics of farmers participating in the study and their utilization of agricultural supports

In the study, the demographic characteristics of the farmers and their use of subsidies were analyzed and only the results that were found significant as a result of the Chi-Square analysis are given below. According to this

- Farmer's "age group" and utilization of "crop support",
- Farmers' "level of education" and utilization of "input support",
- A statistically significant relationship was found between the farmer's "duration of activity" and his/her utilization of "product support".

Table 12. Demographic characteristics of farmers

Variables	Groups	Frequency	Percentage (%)
Age	≤ 30 years	10	3.4
	31 - 40 years	44	14.8
	41 - 50 years	98	33.0
	51 - 60 years	92	31.0
	61 years ≥	53	17.8
Education	No education	5	1.7
	Primary School	152	51.2
	Middle School	54	18.2
	High School	59	19.9
	Higher Education	27	9.1
Duration of activity	10 years and below	25	8.4
	11-20 years	61	20.5
	21-30 years	75	25.3
	31-40 years	70	23.6
	41 years and above	66	22.2

The elderly population is generally defined worldwide as individuals aged 65 and over. In Türkiye, the elderly population rate was approximately 9.5% in 2020, rising to 10.2% by 2023 (TurkStat, 2023). In Mersin, the elderly population rate ranges between 8.0% and 10.9%, reflecting the national average (TurkStat, 2020). In this study, it was determined that only 3.4% of the farmers were aged 30 or younger, while 17.8% were aged 61 and above (Table 12). The proportion of elderly individuals within the sample group exceeds both the national and Mersin regional elderly population rates. Taşkaya, Top, and Özüdoğru (2016) also found in their study that the average age of farmers was 50.26 years.

In the study region, 52.9% of the farmers were classified as having either no formal education or only primary education, whereas 38% were identified as graduates of secondary or high school education levels (Table 12). When examining the general population structure in Türkiye, the average educational level corresponds to middle school, whereas the education level of farmers is lower. In his study, Gökdoğan (2012) found that 50.8% of farmers had primary school education and emphasized that, with the advancement of technology and changing agricultural techniques, it is necessary to increase the education level to enable farmers to utilize these developments consciously and effectively.

Farmers' utilization of supports according to age group

In the study, when examining the relationship between 'age groups' and the utilization of 'product support,' a statistically significant relationship was found ($N = 253$; $\chi^2 = 11.054$; $df = 4$; $p < 0.05$).

According to this result, the age groups 31-40 and 41-50 utilize product support less than the 61+ age group (Table 13). In other words, the likelihood of benefiting from product support increases with age. It is thought that, within the study area, as farmers age, they prefer to maintain their current positions and avoid taking risks; therefore, compared to younger farmers, they tend to focus on the production of supported crops. Conversely, Topçu (2008) reported that as farmers age, their willingness to benefit from agricultural support payments decreases.

Table 13. Farmers' age groups and their utilization of product support

			Utilization of Product Support		
			No	Yes	Total
Age Group	30 years old and under	Count	7	1	8
		% within Age Group	87.5%	12.5%	100.0%
		% within Utilization of Product Support	3.2%	2.7%	3.2%
	Age group 31 to 40 years	Count	27	1	28
		% within Age Group	96.4%	3.6%	100.0%
		% within Utilization of Product Support	12.5%	2.7%	11.1%
	Age group 41 to 50 years	Count	79	9	88
		% within Age Group	89.8%	10.2%	100.0%
		% within Utilization of Product Support	36.6%	24.3%	34.8%
	Age group 51 to 60 years	Count	70	13	83
		% within Age Group	84.3%	15.7%	100.0%
		% within Utilization of Product Support	32.4%	35.1%	32.8%
	Age group 61 years and above	Count	33	13	46
		% within Age Group	71.7%	28.3%	100.0%
		% within Utilization of Product Support	15.3%	35.1%	18.2%
Total		Count	216	37	253
		% within Age Group	85,4%	14.6%	100.0%
		% within Utilization of Product Support	100,0%	100.0%	100.0%

In the study, when examining the relationship between "age groups" and "credit and other supports," it was determined that the tested groups had similar characteristics, and no statistically significant relationship was found. Similarly, Aksoy et al. (2010) reported no significant relationship between farmers' age and credit usage. In contrast, Hayran and Gül (2018), in their study conducted in Mersin, found a significant and negative relationship between farmers' age and credit utilization. They indicated that as farmers' age increases, the likelihood of using credit decreases, and younger farmers have a higher probability of credit usage.

In the study, no significant relationship was found between "age groups" and the utilization of "input support." However, Abay et al. (2017) determined the average age of farmers benefiting from input support to be 52 and reported that the level of input support utilization increases with the farmer's age.

In the study, 68.7% of the farmers reported using the support payments for agricultural production activities, whereas the utilization rate of these supports for agricultural investments was very low (1.3%) (Table 14). It can be inferred that the 15% of farmers who stated they used the support payments to meet household needs and other purposes are attempting to sustain production under difficult conditions.

Table 14. Uses of support payments

Area of Use	Number of Enterprises	Percentage (%)
Agricultural production activities	204	68.7
Agricultural investments	4	1.3
Non-agricultural investments	7	2.4
Household expenditures	36	12.1

In the study, a statistically significant relationship was found between the age groups and the use of support payments for agricultural production activities ($N = 297$; $\chi^2 = 15.883$; $df = 4$; $p < 0.05$).

Table 15. Utilization of support payments in agricultural production activities and age group

			Age Group					
			30 years old and under	Age group 31 to 40 years	Age group 41 to 50 years	Age group 51 to 60 years	Age group 61 years and above	Total
Utilization in Agricultural Production Activities	No	Count	4	23	29	18	19	93
		% within Utilization in Agricultural Production Activities	4.3%	24.7%	31.2%	19.4%	20.4%	100.0%
		% within Age Group	40.0%	52.3%	29.6%	19.6%	35.8%	31.3%
	Yes	Count	6	21	69	74	34	204
		% within Utilization in Agricultural Production Activities	2.9%	10.3%	33.8%	36.3%	16.7%	100.0%
		% within Age Group	60.0%	47.7%	70.4%	80.4%	64.2%	68.7%
Total		Count	10	44	98	92	53	297
		% within Utilization in Agricultural Production Activities	3.4%	14.8%	33.0%	31.0%	17.8%	100.0%
		% within Age Group	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Farmers aged 30 and under use support payments for agricultural production activities less frequently compared to those aged 51-60. It can be inferred that farmers over 51 are more cautious in this regard.

Farmer's education level and utilization of agricultural support programs

Based on the analysis conducted in the study, a statistically significant relationship was found between farmers' education level and their utilization of input support. The extent to which farmers benefit from input subsidies varies depending on their level of education ($N = 253$; $\chi^2 = 10.162$; $df = 3$; $p < .05$).

Table 16. Farmers' educational level and utilization of input support

			Utilization of Input Support		
			No	Yes	Total
Education Level	Primary School	Count	53	84	137
		% within Education Level	38.7%	61.3%	100.0%
		% within Utilization of Input Support	63.1%	49.7%	54.2%
	Middle School	Count	8	38	46
		% within Education Level	17.4%	82.6%	100.0%
		% within Utilization of Input Support	9.5%	22.5%	18,2%
	High School	Count	19	29	48
		% within Education Level	39.6%	60.4%	100,0%
		% within Utilization of Input Support	22.6%	17.2%	19,0%
	Higher Education	Count	4	18	22
		% within Education Level	18.2%	81.8%	100,0%
		% within Utilization of Input Support	4.8%	10.7%	8,7%
Total		Count	84	169	253
		% within Education Level	33,2%	66.8%	100.0%
		% within Utilization of Input Support	100,0%	100.0%	100.0%

Regarding the utilization of input support:

- A comparison between primary school and middle school graduates revealed a significant difference in favor of middle school graduates.

- A comparison between middle school and high school graduates also indicated a significant difference in favor of middle school graduates (Table 16).

In other words, the findings indicate that in the study region, educational attainment significantly influences the utilization of input support, with farmers possessing secondary-level education benefiting more from such support.

Similarly, Abay et al. (2017) noted that a farmer's level of education increases the likelihood of accessing input subsidies. As education levels rise, farmers gain improved access to information sources, become more aware of available support schemes, and consequently benefit from a wider range of subsidies. Furthermore, the bureaucratic complexity involved in applying for agricultural support payments underscores the importance of literacy. Accordingly, literate farmers and those who have completed primary or secondary education are more likely to benefit from agricultural support programs (Topçu, 2008).

CONCLUSION AND RECOMMENDATIONS

In this study, it was determined that 94.6% of agricultural enterprises in Mersin consist of small-scale farms, and notably, 75% of these farms operate on land areas smaller than 50 decares. In this context, it can be asserted that small-scale enterprises are unable to benefit from the cost advantages provided by economies of scale. Therefore, in the study area, various agricultural support mechanisms are implemented, including Compensatory Payments, Premium Support, Seed Support, Seedling/Sapling Support, Fuel and Fertilizer Support, Soil Analysis Support, Interest-Subsidized Loans, Agricultural Consultancy Services, and Agricultural Insurance Support. To achieve the intended outcomes of agricultural support payments, it is essential to take farm size into consideration in the design and implementation of support policies.

As a result of the study, it was determined that farmers primarily benefit from "interest-subsidized credit" and "fuel and fertilizer" support. The extent to which farmers utilize agricultural support varies according to the size of the agricultural enterprise. Accordingly, medium-sized enterprises were found to be the main beneficiaries of product support, whereas dwarf (very small-scale) enterprises were identified as the group benefiting the least. Moreover:

- Providing the same level of support to small-scale enterprises as to medium and large-scale enterprises leads to income inequality.
- The group that benefits the most from input support (fertilizer and fuel) is large family farms. In other words, small enterprises are the group that benefits the least from input subsidies.
- The group experiencing the most difficulty in accessing support payments is "dwarf enterprises," which fall under the category of small-scale farms.
- As part of agricultural production planning, a decree concerning crop production support for the three-year period of 2025–2027 was published in the Official Gazette on August 29, 2024. However, upon examining this decree and comparing it with the findings of the present study, it is anticipated that the expectations of farmers will not be adequately met.

Recommendations:

Decision-makers should implement affirmative action measures to protect small-scale agricultural enterprises, which are essential for the sustainability of agricultural production and the security of food supply.

Farmer participation should be ensured in the development and implementation processes of agricultural and support policies, and their opinions should be actively sought. Furthermore, policy-making should be informed by the findings and results of previous research in this field. Since such studies are generally conducted to assist policymakers, drawing upon them is crucial to ensure the effectiveness and success of agricultural policies.

Ethics Statement

It was found ethically appropriate at the meeting of Mersin University Social Sciences and Humanities Ethics Committee dated 28.12.2021 and numbered 271.

Additional Information

This study is based on the first author's PhD thesis.

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