



## A Study on Farmers' Approaches on Input Supply and Marketing of Agricultural Products

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### Abstract

**Purpose:** The main purpose of this research is to reveal the preferences of farmers for input supply and sales of agricultural products, interpreting the differences in this field and suggesting solutions.

**Design/Methodology/Approach:** The main material of the research is the survey study conducted with the producers in the research area. Apart from the survey data, the Farmer Registration System (ÇKS) data recorded by the Ministry of Agriculture and Forestry in the field of crop production was used. The records of the producers surveyed from the data of the National Milk Registration System were determined and included in the data set. Results were evaluated with descriptive statistics and Likert scale.

**Findings:** It has been determined that farmers prefer agricultural credit cooperatives and dealers for input supply, whereas they work with traders in the sale of agricultural products. In addition, it is observed that the agricultural sales or agricultural development cooperatives established to provide cheap input to the farmers are insufficient in this area.

**Originality/Value:** For farmers to have cheap inputs and low financing costs, the cooperatives operating in this field should be more institutionalized. In order to ensure the preference of cooperatives in terms of product sales, both information activities and strict controls of the state should be expanded.

**Key words:** Farmer, agricultural input, marketing, cooperative

### Çiftçilerin Girdi Temini ve Tarımsal Ürün Pazarlaması Konusundaki Yaklaşımları Üzerine

#### Bir Araştırma

#### Özet

**Amaç:** Bu araştırmanın temel amacı, çiftçilerin girdi temini ve tarımsal ürün satışı konusundaki tercihlerini ortaya koymak ve bu alanda yaşanan farklılıkları yorumlayarak çözüm önerileri getirmektir.

**Tasarım/Methodoloji /Yaklaşım:** Araştırmanın ana materyalini araştırma alanındaki çiftçilerle yapılan anket çalışması oluşturmaktadır. Anket verileri dışında bitkisel üretim alanında Tarım ve Orman Bakanlığı tarafından kayıtlı tutulan Çiftçi Kayıt Sistemi (ÇKS) verileri kullanılmıştır. Ulusal Süt Kayıt Sistemi verilerinden anket yapılan üreticilerin kayıtları tespit edilerek veri seti içerisine alınmıştır. Sonuçlar tanımlayıcı istatistikler ve likert ölçeği ile değerlendirilmiştir.

**Bulgular:** Çiftçilerin girdi temini konusunda tarım kredi kooperatifleri ve bayileri tercih ettiği buna karşın tarımsal ürün satışında tüccarlar ile çalıştığı tespit edilmiştir. Ayrıca çiftçilere ucuz girdi sağlamak için kurulan tarım satış ya da tarımsal kalkınma kooperatiflerinin bu alanda yetersiz kaldığı görülmektedir.

**Özgünlük/Değer:** Çiftçilerin ucuz girdi temini ve düşük finansman maliyetine sahip olması için bu alanda faaliyet gösteren kooperatiflerin daha kurumsal bir yapıya kavuşturulması gerekmektedir. Ürün satışı açısından kooperatiflerin tercih edilmesini sağlamak amacıyla hem bilgilendirme çalışmalarının ve hem de devletin yönlendirici rolünün yaygınlaştırılması gerekmektedir.

**Anahtar kelimeler:** Çiftçi, tarımsal girdi, pazarlama, kooperatif

## 1. INTRODUCTION

Sustainable agricultural production is relevant with marketing of agricultural goods and proper agricultural inputs supplying system. Understanding of types of buying agri-inputs and sales points give ideas that is important for agricultural production dynamics of farmers. Main purpose of this research is demonstrating of choices of farmers interms of buying agri-inputs and selling their agricultural products and bringing solutions with analysis of differences on this topic. In this framework, it has been tried to put forward the improvement suggestions that can be made in this field by demonstrating the commercial relations of the farmers' own businesses. In addition, advices are prepared considering whether there are differences between farmers choices or not. In many studies conducted in this area, it is seen that farmers prefer dealers or cooperatives for input, and similarly, they use cooperative or private sector companies as sales channels to sell their products. It is known that the preferences of farmers, especially those operating in different agricultural production areas, vary (Arıcı, 2018; Şahin ve ark. 2013; Sayılı ve Adıgüzel 2011; Kaya ve ark. 2019; Funk ve Downey 1983; USDA 1998; Artukoğlu, Olgun ve Adanacıoğlu, 2012; ACC 2018; Kınıklı ve ark., 2019; Değer ve ark., 2020 ). This research is different and important from other studies in terms of revealing the attitudes of farmers regarding input supply and marketing of their products, especially in terms of income groups.

## 2. MATERIAL and METHOD

### Material

The main material of the research is the survey study conducted with the farmers in the research area. Apart from the survey data, the Farmer Registration System (ÇKS) data recorded by the Ministry of Agriculture and Forestry in the field of crop production was used.

### Method

#### The method followed in selecting the research area

Saruhanlı and Göl marmara districts from Manisa province and Malkara and Hayrabolu districts from Tekirdağ province were selected as research areas. In the selection of these districts, the combination of dry-irrigated agricultural production types, operating in the fields of fruit growing, olive cultivation and viticulture, and production in the field of cattle and dairy farming played a role. Thus, while analyzing the findings, it was ensured that the solution proposals to be put forward by the research cover wider masses and to act on a hybrid agricultural gross income composed of different products rather than single types of agricultural production. Agricultural production information was obtained from all the villages of the 4 districts in the area in the study area, gross income amounts were calculated and marked as low, medium, and high-income villages by dividing them into certain income levels. (Table 1.)

In the ranking made by the World Bank income levels Turkey is in the upper middle-income countries were identified among this group of countries in income per capita in 3,976 to 12,275 dollars. Average income per capita in 2018 was calculated by TURKSTAT as \$ 9,638 (45,463 TL). These two data were used when classifying the income levels of producers, and the net minimum wage figure for 2018 was used as the basis (TURKSTAT, 2019). Thus, segments corresponding to 24 minimum wages for low income level, 48 minimum wages for middle income level and 72 minimum wages for high income levels were envisaged. Thus, 0-50,000 TL for low income, 50,000-100,000 TL for middle income and 100,000 TL and above for high income were taken into consideration.

**Table 1.** Distribution of Villages in the Research Area by Income Ranges

	0-2.500.000	2.500.000-5.000.000	5.000.000-10.000.000	10.000.000+	Total
Gölmarmara	6	4	3	2	15
Hayrabolu	4	24	13	5	46
Malkara	28	24	16	3	71
Saruhanlı	5	8	15	13	41
Genel Toplam	43	60	47	23	173

The distribution of the producers in the research area is determined by the principle of proportional representation. In this case, two villages were selected from among high, middle- and low-income villages, and a total of 24 villages were determined, 6 villages from each district (Table 2). The proportional representation principle has been adopted in the distribution of the survey numbers to the districts. While deciding on the number of surveys on district basis, the share of the relevant district in terms of the number of producers in the population was taken into consideration. It was aimed to distribute the questionnaires determined per district equally to the villages, but it was not possible to conduct equal surveys in each village.

**Table 2.** Distribution of the Surveys by Income Level and Villages

District	Income Level	Village	Number of Surveys	Total
Gölmarmara	Düşük	Ayanlar	5	38
	Düşük	Taşkuyucak	6	
	Orta	Kayaaltı	5	
	Orta	Ozanca	5	
	Yüksek	Beyler	5	
	Yüksek	Tiğimli	12	
Hayrabolu	Düşük	Çerkezmüsellim	14	81
	Düşük	Şalgamlı	16	
	Orta	Büyükkarakarlı	3	
	Orta	Çeneköy	16	
	Yüksek	Canhıdır	16	
	Yüksek	Tatarlı	16	
Malkara	Düşük	Balabancık	20	80
	Düşük	Gözsüz	25	
	Orta	Alaybey	14	
	Orta	Doğanköy	7	
	Yüksek	Vakıfğdemir	10	
	Yüksek	Yenice	4	
Saruhanlı	Düşük	Hatipler	22	133
	Düşük	Tirkeş	21	
	Orta	Dilek	22	
	Orta	Gökçe	20	
	Yüksek	Hacırahmanlı	22	
	Yüksek	Nuriye	26	
Toplam				332

#### The method followed in the selection of the manufacturers

For the sample size to be surveyed, the number of ÇKS registered producers in 4 districts in the research area is 18,866 according to 2017 data. The sample size was calculated jointly for 4 districts and then distributed to the districts using the proportional representation method. The following formula was used in the sample size calculation. (Newbold,1995):

$$n = \frac{N \cdot p \cdot (1-p)}{(N-1) \cdot \sigma^2 + p(1-p)}$$

N: Main set

p: The proportion of the number of enterprises with the expected characteristics in the main population (will be considered as 50% to reach the highest sample volume.)

$\sigma^2$ : Population variance

Sample volume was calculated with 95% confidence interval and 5.5% margin of error. In this case, the sample size was found to be 313, but the number of questionnaires was reached to 332 producers as much as possible and 332 questionnaires were evaluated. FRS records of the surveyed producers, it was ensured that the data were obtained anonymously, and Agricultural Gross Income, Agricultural Net Income and Total Net Income were calculated based on these data.

#### The method followed in data analysis

Since the survey area consists of 4 different districts and there are producers from different income levels in each district, it is possible to evaluate and interpret the data from different angles. This situation also allows for a wide variety of comparisons, making it easier to prepare more accurate determinations and suggestions. In this respect, the research findings were classified according to the following criteria and converted into a Chart:

Village Income Threshold: It is divided into three as Low, Medium, and High. These groups were found by calculating the incomes of the villages included in the research area before the survey. However, these do not represent the income level of the producers surveyed, but the income level of the village where that producer lives. Since the sample selection is made according to these strata, the findings are shared primarily based on these income groups in the tables.

Land size: Classified as (0-50) - (50-100) - (100-250) - (250-500) - (500 and above) over the lands cultivated by the surveyed producers (including rents).

The breakdown of land size and income levels were compared together, and thus the impact of land assets on the data was analyzed.

**Income Segmentation:** It is determined by dividing into 50.000 and 100.000 TL tranches over the total income of the producers.

While determining these tranches, the actual income brackets used by banks were taken into consideration and the income segment was mostly used for better interpretation of the data on financing usage.

While calculating the gross income and net income of plants, the tables of the unit income, expenditure and yield of herbal products, called the agricultural chart of 3 banks (TEB, 2019; TC.Ziraat Bankası, 2019; Denizbank A.Ş., 2019) were used.

Explanations regarding data such as income and expenditure per decare included in these tables are as follows:

**Income per decare:** It is calculated as the gross production value. It is the value equivalent of the whole product (including consumption at source, seed allocated, etc.) purchased by farmers in a production period. Buna yan ürün gelirleri de dahildir.

**Expenditure Per Decare:** Includes all crop production costs. This includes variable operating costs and active capital interest, land lease and depreciation costs for annual and perennial plants. However, the land rent is only included in the calculation for rental parcels. For the rental land prices, the average rental value in that region has been taken into consideration. While calculating the vegetative net income, the difference between the income per decare and the expenditure per decare was taken. However, in the findings regarding income, which has an important place in the analyzes within the scope of the research, non-agricultural income was excluded to show non-agricultural income separately. Livestock income was calculated using the same approach as in the vegetable gross income calculation as described above. While calculating the livestock production value, the amount of milk produced by the producers in the last 3 years was taken as a basis for premium and the revenues from the sale of calves and fertilizers were added to the Gross production value.

The following formula was used in calculating the total net income:

Total Net Income: [Gross product (vegetable + animal + non-agricultural income)] - [(Operating expenses + Equity interest + land rent)]

The Likert scale asks participants to indicate to what extent they agree or disagree with a range of mental beliefs or behavioral belief statements about a particular object. Normally, scale format, consensus, and disagreement are balanced between scale descriptors. Named after its original developer, Rensis Likert, this scale consists of five scale descriptors: "strongly agree", "agree", "neither agree nor disagree", "disagree", "strongly disagree. Within the scope of this research, a 10-point Likert scale was used and the farmers were asked to score between 1-10. Afterwards, these scores were grouped in pairs and evaluated (Hair, Bush and Ontinau, 2002).

### 3.FINDINGS and DISCUSSION

#### Demographic Information

It is striking that the surveyed farmers are predominantly primary school graduates (81%) (they are generally evaluated over 8 years because they have 8 years of education). This is followed by high school graduation with 14.8% and undergraduate graduation with 3.6%. The illiterate producer rate is 0.6%. When the distribution of farmers by age groups is examined, the highest producer is in the 51-60 age group (37%). 38.6% of the farmers are in the 30-50 age group, 24.4% are 61 and over. All farmers are included in a social security system. It is seen that among the producers, the producers are registered to Bag-Kur the most with 79%, and they are registered to SGK (formerly SSK) with 18%. The least registered social security institution is the Pension Fund, with its former name.

#### Enterprises Information

When the land size, product type, income and expenditure figures of the villages where the surveyed producers are located are examined, the average land size of the producers in the low income group is 108.4 decares, the producers in the middle income group are 123.7 decares and the producers in the high income group are 195, It is seen to be 5 decares (Table 3).

While the vegetable gross income per decare of the producers in the low-income group is 703 TL/Da, this figure is 937 TL/Da for the middle-income group and 913 TL/Da for the high income group.

**Table 3.** Land size, crop income and expense figures of farmers according to income groups

Income Level of Village	Numbers of Farmers	Avg. Farm Size (decare)	Avg. Plants Gross Income (TL)	Avg. Plants Costs Expenditure (TL)	Avg. Plants Net Income
Low	129	108.4	76 198	33 826	42 372
Mid	92	123.7	115 907	51 533	64 373
High	111	195.5	178 607	79 830	98 777
Total	332	141.8	121 441	54 114	67 327

When the organizational status of the farmers was examined, it was determined that 322 farmers, excluding 10 farmers, were members of at least one organization. While the highest membership is in the chamber of farmers, it is seen that the least membership is in the irrigation union. The total number of members is calculated as 698. Considering that the number of farmers who are members of at least one organization is 322, farmers are members of at least 2 to 3 organizations. (Table 4)

**Table 4.** Cooperative, union and chamber membership status of farmers according to income groups (A farmer can have more than one membership)

Income Level of Village	Development Coop.	Breeding Association	Chamber of farmers	Credit Coop.	Irrigation Union	Irrigation Coop.	Farmers Association
Low	31	29	103	73	10	15	25
Mid	39	6	49	38	2	4	11
High	30	14	82	59	20	18	28
Total	100	49	234	170	32	37	64

#### Input Supply and Product Sales Points in the Research Area

When the agricultural organization in the research area and the situation of the dealers selling agricultural inputs are examined, different cooperatives organized in each district stand out. However, the effectiveness of these cooperatives is not clear.

In addition, it is observed that many drug, fertilizer, seed and equipment dealers operate in the districts. For fuel, another important input for agricultural production, many fuel stations operate in the districts. Saruhanlı district is the district with the most fuel dealers with 31 stations. On the other hand, there are only 5 fuel stations in Gölmarmara. (Table 5)

**Table 5.** Number of cooperatives in the research area and companies providing input

	Cooperatives			Dealer/Supplier				
	Development Coop.	Irrigation Coop.	Credit Coop.	Seed	Fertilize	Pesticide	Machinery	Gas
Gölmarmara	2	2	1	8	1*	13	2	5
Hayrabolu	25	11	9	1*	24	17	7	12
Malkara	56	8	7	1*	28	15	10	23
Saruhanlı	4		9	25	1*	42	21	31

\*: Official data are not available. However, it is known that there is at least one dealer as observation data.

Source: Tekirdağ Provincial Directorate of Agriculture, Manisa Provincial Directorate of Agriculture, Agricultural Reports, EPDK Fuel Dealers List (2020)

In addition to agricultural organizations and dealers, many food businesses operate in the research area. Especially in terms of the number of establishments engaged in food production, Saruhanlı is the most intense district. Malkara is the most intense district in terms of collective consumption enterprises, which are defined as restaurants and similar enterprises (Table 6).

**Table 6.** Food Manufacturers and Retailers in Research Area(2019)

	Gölmarmara	Hayrabolu	Malkara	Saruhanlı	Toplam
Warehouse, Food Sales and Other Retail Operations	87	214	420	239	960
Food Production Businesses	13	37	52	87	189
Whole Consumption Businesses	77	245	500	209	1031
Total	177	496	972	535	2180

Source: <https://ggbs.tarim.gov.tr/cis/servlet/StartCISPage?PAGEURL=/FSIS/ggbs.onayliIsletmeSorgu.html> Farmers' Input Supply Structure

#### Farmers' Input Supply Structure

When the input supply points of the surveyed farmers are examined, it is seen that input supply is made from different sources, but in fact, the input supply is generally concentrated in agricultural credit cooperatives and dealers. In fuel supply, 58.1% of the farmers prefer the agricultural credit cooperative, and 41.3% of them buy gas from the dealer. In fertilizer supply, agricultural credit cooperatives are preferred at a rate of 69%, while the rate of preference for dealers is 28.6%. Similarly, 62.3% of agricultural credit cooperatives are preferred for seed supply. In fact, it can be said that the basis of the preference of the agricultural credit cooperative here is that the farmers can use loans in kind from the agricultural credit cooperatives (Table 7). This situation is one of the prominent factors in input supply for Cooperatives.

**Table 7.** Supplier Points for Farmers

	Gas		Fertilize		Seed		Feed	
	N	%	N	%	N	%	N	%
Cooperative	193	58.1	229	69.0	207	62.3	92	27.7
Dealer	137	41.3	95	28.6	89	26.8	42	12.7
Company	0	0.0	2	0.6	4	1.2	4	1.2
Chamber of Farmers	0	0.0	0	0.0	4	1.2	0	0.0
Other	0	0.0	2	0.6	1	0.3	0	0.0
Not Buying	2	0.6	4	1.2	27	8.1	194	58.4
Total	332	100.0	332	100.0	332	100.0	332	100.0

When the payment methods preferred by farmers for input supply are analyzed, it is seen that they make 73.8% cash payment in fuel purchases, whereas they purchase fuel with a harvest maturity of 19.9%. In fertilizer procurement, the rate of purchasing by paying in cash is 52.1%, while the rate of those who pay for harvest is 38%. In seed purchases, the cash payment rate is 44.7% and the harvest deferred payment rate is 33.9%. In feed purchases, it is seen that predominantly harvest deferred payment is preferred. Since the price changes in the fuel market occur in very short periods, cash payment is generally demanded in this market. However, it is thought that the farmers who shop from the agricultural credit cooperatives perceive their fuel purchases from the cooperatives as “cash” payments. However, farmers are credited in non-cash in agricultural credit cooperatives. In this respect, this perception of farmers is considered in the evaluation of the survey findings on fuel purchases. Because very few farmers stated that they use credit cards or harvest term cards (4.5%). Based on these data, it can be said that farmers mostly make harvest-term purchases but tend to shop in advance when they have the means. (Table 8).

**Table 8.** Farmers' Payments Methods

	Gas		Fertilizer		Seed		Feed	
	N	%	N	%	N	%	N	%
In advance	245	73.8	173	52.1	149	44.7	24	7.2
Harvest Deferred	66	19.9	126	38.0	113	33.9	93	28.0
Product Money	3	0.9	10	3.0	14	4.2	10	3.0
Credit Card	4	1.2	2	0.6	3	0.9	4	1.2
Harvest Deferred Credit card	11	3.3	13	3.9	11	3.3	5	1.5
Not Buying	3	0.9	8	2.4	43	12.9	196	59.0
Total	332	100.0	332	100.0	333	100.0	332	100.0

Indeed, when the payment methods for fuel purchases are examined according to income groups, it is seen that 40% of the farmers in the low-income group make advance payments. On the other hand, 30.2% of producers in the middle-income group and 29.8% of producers in the high-income group prefer cash. On the other hand, the following fact should be considered: Farmers in the low-income group shop for much lower amounts in absolute value. For this reason, there may be opportunities to pay these amounts in advance.

#### **Agricultural Product Marketing and Product Price Collection Status of Farmers**

When the points where farmers sell their products and collection forms are examined, it is seen that merchants are predominantly preferred. Farmers can sell products to more than one point. In this respect, the preference rate of merchants for all payment methods is 88.6%. The prominence of merchants in marketing can be explained by the large scale of farms to some extent. Development cooperatives and producer unions are preferred after the traders. However, traders are preferred in terms of the capacity to pay the farmers in advance. It is seen that the farmers who sell products to the farmers' unions and breeder unions (it is known that the product sold here is raw milk due to the sector structure) has long terms of up to 45 days. The preference rate of cooperatives and unions preferred by farmers after merchants is up to 25%. In fact, farmers prefer agricultural credit cooperatives for input supply, while they prefer merchants rather than cooperatives for product sales (Table 9).

**Table 9.** Farmers' product sales points and collection methods

	Trader	Development Cooperative	Farmers' Union	Breeder Association	Company
In advance	251	39	45		46
0-45 Days Deferred	44	83	42	48	44
90 and more days Deferred	1	1			1
Not Selling	36	209	245	284	241
Total	332	332	332	332	332

  

Shares					
	Trader	Development Cooperative	Farmers' Union	Breeder Association	Company
In advance	75.6%	11.7%	13.6%	0.0%	13.9%
0-45 Days Deferred	13.3%	25.0%	12.7%	14.5%	13.3%
90 and more days Deferred	0.3%	0.3%	0.0%	0.0%	0.3%
Not Selling	10.8%	63.0%	73.8%	85.5%	72.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

In the interviews with the farmers, their views on organization were tried to be obtained. Most of the farmers think that organizing is insufficient (8,27 / 10). However, as mentioned in the previous sections, farmers are members of at least one organization and it is known that many producer organizations operate in the field of research. Here, it can be said that the current organizations are inadequate in functioning and functioning. Indeed, in the other two questions, both the opinion that the level of knowledge of the cooperative managements is inadequate (6,8 / 10) is dominant and the majority of the farmers' organizations should be supervised by the state (8,85 / 10). In the light of this information, it can be concluded that farmers do not fully trust the organizations they are members of or that these organizations do not adequately meet their promised functions (Table 10).

**Table 10.** Farmers' attitudes towards organizing

	1	2	3	4	5	6	7	8	9	10	Mean
Organization is inadequate	13	5	3	2	6	8	8	36	94	81	8.27
%	3.9	1.5	0.9	0.6	1.8	2.4	2.4	10.8	28.3	24.4	
The level of knowledge of the cooperative or union managements is insufficient	6	9	10	3	11	23	91	39	46	12	6.8
%	1.8	2.7	3	0.9	3.3	6.9	27.4	11.7	13.9	3.6	
It should be controlled by farmers' organizations and the state	2	0	1	1	0	2	9	25	96	112	8.85
%	0.6	0	0.3	0.3	0	0.6	2.7	7.5	28.9	33.7	

The farmers' thoughts on marketing their agricultural products are especially important for evaluating the issues related to participation in competition or the ability to sell the product at value-for-money. Farmers generally think that they can market the products they produce themselves (8,32 / 10). However, there are more people who think that agricultural products should be marketed by the state (8,45 / 10). The basis of this contradiction lies in the fact that farmers do not notice the difference between being able to sell their products and be able to market them. Being able to sell the product at the value price and in the right market is completely different from selling it to the trader who comes to the field. Most of the farmers think that farmers' organizations are unsuccessful in marketing agricultural products (5.87 / 10). In addition, they want agricultural consultants to provide services in marketing issues (8.1 / 10) (Table 11).

**Table 11.** Farmers' attitudes towards marketing their agricultural products

	1	2	3	4	5	6	7	8	9	10	Mean
I can market my products myself	6	0	5	3	5	6	9	56	132	32	8.32
%	1.8	0	1.5	0.9	1.5	1.8	2.7	16.9	39.8	9.6	
Marketing of agricultural products must be by the state	3	6	1	3	3	11	13	46	103	64	8.45
%	0.9	1.8	0.3	0.9	0.9	3.3	3.9	13.9	31	19.3	
Cooperatives and Unions know product marketing well	17	15	10	7	21	46	99	25	8	1	5.87
%	5.1	4.5	3	2.1	6.3	13.9	29.8	7.5	2.4	0.3	
Agricultural Consultants should also provide services in marketing	2	5	4	1	8	9	27	68	89	36	8.10
%	0.6	1.5	1.2	0.3	2.4	2.7	8.1	20.5	26.8	10.8	

#### 4. CONCLUSION and SUGGESTIONS

The fact that the farmers prefer agricultural credit cooperatives and dealers for input supply shows us that the agricultural sales and agricultural development cooperatives, which were established to provide cheap input to the farmers, are inadequate in this field. It is understood that a small number of farmers may benefit from discounted shopping with cash payment opportunity in input supply, however, they may have to bear financing costs for the harvest deferred payments.

It suggests that farmers do not get enough prices for their agricultural products because of preferring traders for the sale of products and avoiding the cooperatives. Based on the findings of the research and the findings made, suggestions for farmers' input supply and marketing of their products can be listed as follows:

- 1) In order for farmers' organizations to have a greater market share in the agricultural input market, the cooperatives operating in this field should be made aware of both management and economic management.
- 2) It would be beneficial to teach farmers more precisely about the input purchasing and utilization periods to reduce the financing costs arising from the harvest term purchases of the farmers. For example, pesticides to be used 2 months after the start of production should be avoided at the beginning of production. Local input supply calendars can be created to avoid similar examples.
- 3) In order for farmers' organizations to buy the most basic inputs such as fertilizers, seeds, and pesticides collectively, it is obligatory to have staff who can open procurement tenders. The cash discounts to be provided here should be adjusted to meet the financing costs that the farmers will pay on the forward sales side, and the farmers should be reflected at the least level of financing cost.
- 4) The farmers should be informed about the commercial shopping rules on issues such as possible fraud or failure to collect the products they sell on a maturity basis. Training / seminars should be organized for the use of valuable documents such as checks, bills, invoices, and contracts.
- 5) Farmers need a marketing cooperative to sell their products, but they do not rely on cooperatives. Farmers think that the knowledge level of the management staff of the cooperatives is insufficient. In order to break this perception, face-to-face or electronic sharing platforms should be implemented where successful cooperative managers can transfer their experiences to other cooperatives and farmers.
- 6) Farmers feel that cooperatives should be strictly controlled. It should be ensured that these audits are carried out frequently and the commercial data of the cooperatives are shared with the partners in a transparent manner.

### Contribution Rate of Researchers Declaration Summary

The authors declare that they have contributed equally to the article and have not plagiarized.

### Conflict of Interest Declaration

The authors of the article declare that there is no conflict of interest between them.

### Statement

This article is part of the first author's doctoral thesis.

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