

## ANALYSIS OF THE TOBACCO FARMERS' DISTRIBUTION PATTERN: STUDY CASE IN BULU DISTRICT, TEMANGGUNG

### *Analisis Pola Distribusi Petani Tembakau: Studi Kasus Di Kecamatan Bulu Temanggung*

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#### ABSTRACT

Temanggung Regency is one of the regions that produces and distributes the largest tobacco products in Central Java Province. The strategic location on the slopes of a mountain makes tobacco plants suitable to be used as a source of agriculture in the region. The large number of agricultural lands spread across Temanggung Regency provides abundant agricultural products. But in reality, the development of this tobacco farmer business has experienced many problems, such as unstable selling prices, decreased farmer productivity, and changing harvest times. This research study aims to analyze tobacco farming, in terms of income factors and actors who play a role in the marketing process of tobacco products. This study uses primary data through direct observation and direct interviews with tobacco farmers using questionnaires and secondary data as research support. The results of this study indicate that the marketing of tobacco produced by farmers has several channels such as warehouses, brokers, factories, tengquats, and small traders. Suggestions for further research by adding marketing margin analysis and added value analysis to enrich the research discussion.

**Keyword:** cost, income, supply chain, temanggung, tobacco

#### ABSTRAK

Kabupaten Temanggung merupakan salah satu daerah yang memproduksi dan mendistribusikan produk tembakau terbesar di Provinsi Jawa Tengah. Letaknya yang strategis di lereng gunung membuat tanaman tembakau cocok dijadikan sebagai sumber pertanian di wilayah tersebut. Banyaknya lahan pertanian yang tersebar di Kabupaten

*Temanggung memberikan hasil pertanian yang melimpah. Namun pada kenyataannya pengembangan usaha tani tembakau ini mengalami banyak kendala, seperti harga jual yang tidak stabil, produktivitas petani yang menurun, dan waktu panen yang berubah-ubah. Kajian penelitian ini bertujuan untuk menganalisis usahatani tembakau, yang dilihat dari sisi faktor pendapatan dan aktor yang berperan dalam proses pemasaran hasil produksi tembakau. Penelitian ini menggunakan data primer melalui observasi langsung dan wawancara langsung dengan petani tembakau dengan menggunakan kuesioner dan data sekunder sebagai penunjang penelitian. Hasil penelitian ini menunjukkan bahwa pemasaran tembakau yang diproduksi petani memiliki beberapa saluran seperti gudang, tengkulak, pabrik, dan pedagang kecil. Saran untuk penelitian selanjutnya dengan menambah analisis margin pemasaran, dan analisis nilai tambah untuk memperkaya pembahasan penelitian.*

**Kata kunci:** biaya, pendapatan, rantai pasok, temanggung, tembakau

## INTRODUCTION

The agricultural industry is one of the outcomes offered by the Indonesian government. The agricultural industry has made a sizeable contribution to GDP, employment levels, food supply, foreign exchange, and increased per capita income (Widayati et al., 2019). From 2010 to 2022, Indonesia's GDP from agriculture is IDR 70,593.49 billion, with a record high of IDR 96,832.80 billion in the second quarter of 2020 and a record low of IDR 37,282.50 billion in the fourth quarter of 2021 (Badan Pusat Statistik, 2021). In addition, the agricultural sector also supports the government's efforts to encourage national growth and set food standards. In general, the agricultural sector is an activity in which humans use natural resources to produce raw materials, meet food demands, process energy sources, and manage the environment (Basundoro & Ramadhani, 2020). One of the abundant agricultural products in Indonesia is Tobacco (Dianawati & Kusyaeri Hamdani, 2022). Tobacco production in Indonesia tends to increase from 2015 to 2019 (see Table 1).

Table 1. Indonesian Tobacco Production

Year	Production (Ton)			
	Smallholder	Government	Private	Total
2015	192,899	577	314	193,790
2016	126,443	285	-	126,728
2017	180,854	288	-	181,142
2018	195,349	134	-	195,482
2019	269,770	33	-	269,803

Tobacco is one of the agricultural products used as raw material for cigarettes. One of the best tobacco producing areas is Temanggung Regency,

Central Java. Tobacco production in Temanggung Regency has a production yield of 12,963 to 14,815 tons of tobacco with a harvested area of 18,519 ha (Jawa Tengah Provinsi, 2021). The Temanggung area tends to have cold weather, so tobacco plants are suitable as a source of agriculture in the region (Agustina et al., 2021). In addition, Temanggung Regency is the first tobacco producer in Central Java (see Table 2).

Table 2. List Of The 5 Most Tobacco Producing Regencies In Central Java In 2018

No	Regency	Production (Ton)
1	Temanggung	11,363.52
2	Rembang	6,829.7
3	Grobogan	4,368.97
4	Boyolali	4,327.1
5	Magelang	3,916

Source: Badan Pusat Statistik, 2018

The abundant tobacco production results also indicate that there are many people in Temanggung Regency who have the main income from tobacco production. Tobacco commodity are one of the business sectors that have a significant role in the agricultural sector (Agustina et al., 2021). Besides being supported by the productivity of agricultural land, tobacco farming in Temanggung Regency is also the largest in all districts in Central Java. In 2019 with an area of 19,209 hectares (Badan Pusat Statistik, 2019). The extent of agricultural land spread across Temanggung Regency provides abundant agricultural products, and also the marketing process determines the income of farmers from the harvests carried out.

Marketing plays an important role in the sale of goods/services, and provides an overview of how an organization can live and develop. Marketing is all activities carried out to find out consumer needs in the context of procuring goods or services (Habib et al., 2022; Palupi et al., 2020). These activities can be carried out starting from the production process, bidding activities, and the exchange of products of equal value. In addition, activities to fulfill consumer needs can be in the form of developing product promotions, distribution, price information, and services which are carried out at a certain profit level. The marketing pattern is also known as the supply chain, where all marketing activities involve the actors and strategies used in the distribution process of a product (Saleheen & Habib, 2023; Wang et al., 2022). This happens because the agricultural commodity system connects consumers, farmers, and a small group of transnational businesses that are not yet clear, where one controls agricultural production and has a burden on natural resources (Sporchia et al., 2021). Marketing plays an important role in influencing the supply chain because it can affect the relationship between producers, consumers, and institutions in

development and post-development (Primalasari et al., 2017; Susilowati & Kirana, 2018). Due to difficulties in managing the supply chain of fresh agricultural products, supply chain members are often in a state of decentralized decision making. In a decentralized chain, retailers create orders to maximize their own profits and thereby fail to optimize the entire supply chain (Yan et al., 2020). Therefore, farmers and marketing actors need to pay more attention to marketing patterns that are carried out in order to get maximum profits and be able to use all available resources. Therefore, dairy farmers need to pay more attention to marketing patterns that are carried out in order to get maximum profits.

Previous researchers explained that marketing patterns need to be considered in the context of distributing tobacco agricultural products, because it greatly influences farmers' income and determines farmers' welfare (Habib et al., 2022). Apart from that, it was also explained that the more actors involved in the agricultural product distribution process, the lower the profit margin received by farmers (Waridin & Al- Hafidz, 2021). Other risks from distribution conditions are also explained due to (Dai & Liu, 2020): (1) changes in the external environment of the supply chain (i.e. natural, economic, political and legal environment); on the other hand, this can also be caused by the vulnerability of cooperative management among actors in the distribution chain (such as management level, way of cooperation, information processing, and so on). The existence of the process of distributing tobacco to tobacco buying companies provides substantial benefits for farmers. However, in reality the transaction process for tobacco farmers is not an easy process, this transaction also has many problems, one of which is the problem of tobacco quality which causes losses for farmers. In addition, farmers have a low bargaining position in determining market prices (Waridin & Al- Hafidz, 2021). The main reason underlying this research is because there are still problems that occur in the distribution process of tobacco farming: low levels of bargaining among tobacco farmers, fluctuating selling prices, and low profit margins received by tobacco farmers. To analyze the problems that occur in tobacco distribution patterns in Temanggung, the main aim of this research is to analyze tobacco farming patterns and marketing patterns of tobacco farmers. This is to find out the role of farmers, actors and government in the process of distributing tobacco products, and provide appropriate advice for managing tobacco agricultural production in Temanggung Regency.

## RESEARCH METHOD

Bulu District, Temanggung Regency, is the site of the study. The research sites were chosen based on the fact that in 2020, Bulu District had the largest tobacco production in Temanggung Regency (Badan Pusat Statistik, 2020). Conditions Because the marketing pattern and determination of tobacco prices

in the research region are determined by intermediaries and cigarette producers, knowledge of the tobacco supply chain in the area is required. The snowball sampling method, a variant of the purposive sampling method, is the foundation of the research sampling method. The use of purposive sampling can be used for several reasons: (1) limited data collection in the population, (2) there is no sample frame available, (3) you have to meet face to face with the respondent, (4) you don't just have to fill out a questionnaire (plus an interview) , and (5) difficulty identifying respondents according to the object under study (Saunders et al., 2016). Procedures used for data collection: (1) make contact with one or two respondents in the population. (2) asking previous respondents to identify subsequent cases, (3) requests information on these new cases to identify subsequent new cases (and so on), (4) complete if the respondent's answers are homogeneous or the sample size has reached a manageable limit. There were 60 respondents who were found with the criteria of tobacco farmers. The data collection method involves filling out questionnaires and semi-structured interviews, which can provide information on distribution problems faced by farmers. There were 60 respondents who were found with the criteria of tobacco farmers.

This research uses a mix method approach, a mixture of quantitative and qualitative analysis (Creswell, 2018). Quantitative analysis uses descriptive analytic methods to explain the characteristics of respondents and explain tobacco farming patterns and qualitative analysis to explain distribution patterns. This study began with data collection using the method was carried out using observation and interview techniques. Based on the problems that will be examined to determine the form of farming along with product flows, financial flows, and information flows in the tobacco commodity marketing supply chain. The supply chain approach and business analysis were carried out to determine the condition of tobacco farming in Bulu District, Temanggung Regency. Data collection was conducted in December 2022. From the data obtained then tabulated and processed to answer research questions. The analysis begins with quantitative analysis then continues with qualitative analysis.

## **RESULT AND DISCUSSION**

### **General Discription of Respondent**

Respondents in this study are described through five characteristics, which include: gender, age, education level, family responsibilities, and length of business carried out by farmers which can be seen in Table 3.

Table 3. Characteristics of Respondents

Characteristics	Amount (People)	Percentage (%)
Gender	Male	78.33
	Women	21.67
Age	<40	6.70
	41-50	41.70
	51-60	46.70
	>60	5.00
Education Level	primary school	45.00
	junior high school	13.33
	senior high school	41.67
Family responsibility	≤1	20.00
	2-5	76.70
	≥6	3.30
Length of Business	<11	26.70
	11-20	48.30
	>20	25.00

Source: Processed Primary Data, 2023

Farmers are people who own land and do their own farming by using all available biological resources, such as farming to ensure the survival of the farmers themselves (Lihawa et al., 2021). The gender of the respondents in this study was mostly male, where the entire tobacco production process was carried out. The role of women is only carried out in the post-harvest process: sorting, processing and selling. The majority of tobacco farmers are between 40 and 63 years old when they are most productive, and some are over 65 when they are least productive. The level of education is an important factor in tobacco marketing in reducing the risk of loss. The level of education possessed by farmers/agricultural employees is able to improve the productivity and quality of their business, but it can also be used to measure the achievement of the intended work process in order to get the best outcomes (Prabowo et al., 2021). A total of 27 tobacco farmers graduated from elementary school, 25 graduated from senior high school, and 8 graduated from junior high school. The available data shows that the education of farmers is at a rather low level. The majority of tobacco farmers in Temanggung cultivate tobacco on their own land. During the tobacco detention process, 37 farmers used their own land, 9 farmers used their own and leased land, 13 farmers used leased land, and 1 farmer used land controlled by village officials.

The majority of farmers who own their own land will plant their own tobacco seeds instead of buying them. About 46 farmers obtained tobacco seeds

from their own trees, 13 farmers bought seeds from other people or the market, and 1 farmer both bought and collected seeds from his own plants. Most of the challenges faced during tobacco cultivation are determined by the weather and season, according to the findings of interviews with individual farmers. The characteristics of this tobacco are influenced by environmental aspects and the cultivation process carried out by farmers. Environmental conditions that affect tobacco production and quality include soil conditions (soil physical and chemical properties), microclimate (temperature and humidity) around the plantations, texture, soil moisture, and rainfall (Dianawati & Kusyaeri Hamdani, 2022). As a result, if the weather is bad, farmers' expectations of the quality of the tobacco they produce will not be fulfilled. Tobacco farmers can be disadvantaged because the price they receive when they sell their product to factories, warehouses, intermediaries, and other businesses will be lower than the market price.

### Tobacco Farm

The form of tobacco farming in Temanggung Regency uses variable costs in the form of seeds, fertilizers, medicines, and in the form of auxiliary labor which is carried out in the harvest and post-harvest processes. Meanwhile, for fixed costs, the farmers use land, hoes, tractors and other agricultural support tools. To determine net income, it is calculated based on the difference between sales proceeds minus the costs incurred to purchase tobacco farming production inputs (Prabowo et al., 2021). Production can be interpreted as the procedures/methods used by humans to process production inputs using available production factors. The key factor in efforts to increase production is the use of seeds and fertilizer. Increased production is achieved if high quality seeds are available in sufficient quantities. Fertilizer is a source of nutrition for plants, so fertilization is a means to increase tobacco production. Table 4 shows the average expenditure and income of tobacco farming.

Table 4. Identification Of Tobacco Farming In One Period

No	Tobacco Farming		
	Average Income		Average Cost
1	Yields (Kg)	392,67	Variabel Cost (IDR) 1,793,333
2	Price (Kg/IDR)	47,500	Fix Cost (IDR) 3,296,183
3	Income (IDR)	18,651,667	Cost (One Periode) (IDR) 5,089,517

Source: Processed Primary Data, 2023

The total costs incurred by farmers on average in 1 planting season to harvest are IDR 5,089,517. which consists of variable costs and fixed costs. The labor cos variable used by farmers is family labor and labor outside the family.

Outside labor is employed in the process of planting and harvesting, only a few are used during weeding. The use of labor during this planting period is the same as what has been done in previous research which is calculated based on “man-day-working” (Alim et al., 2019). One “man-day” is equivalent to a man's 8-hour working day. To support agricultural facilities, fertilizers and medicines are used to fertilize tobacco plants. Farmers employ two forms of fertilizer when planting tobacco: organic fertilizer (manure and firewood ash) and inorganic fertilizer (urea fertilizer, GandasilD fertilizer, and KCL fertilizer). Farmers obtain organic fertilizer from neighbors or friends, whereas inorganic fertilizer is purchased at the market (Muchfirodin et al., 2015). Variable costs are used to support tobacco farming as well as crop fertilization.

The average yield of farmers is 392.57 kg in one planting period. These results were followed by the average selling price received by tobacco farmers of IDR 47,500/kg. The average harvesting period for tobacco is 50 days of planting. The gross income received by farmers is around Rp. 18,651,667. The income received by farmers is still less than the costs incurred. This can be due to other factors that influence farmer acceptance outside the planting process that is carried out. Low tobacco productivity in Temanggung is partly due to land degradation as a result of intensive tobacco cultivation and weather as a determinant of tobacco growth (Reis et al., 2023). The net income of tobacco farming is calculated from the difference between total production receipts and production costs incurred in the tobacco production process. Production costs are calculated based on the period from planting to harvest of tobacco products (planting period). Production costs come from production inputs: purchase of seeds, fertilizer, pesticides, rental costs, labor costs, transportation costs, harvest and post-harvest costs, and taxes that must be paid. Additional costs include the use of family labor, equipment rental, and equipment depreciation calculations. Table 5. further shows the income received by tobacco farmers in Bulu District.

Tabel 5. Net Income

Criteria	Amount
Income (IDR)	1,129,500,000
Cost (IDR)	305,371,000
Net Income (IDR)	824,129,000
Ratio (R/C)	3.70

Source: Processed Primary Data, 2023

The net income of tobacco farming has a ratio of costs incurred to net income received which has a value of 3.70. These results are still good because the average farmer has a small loss compared to the income received. The income received by farmers is based on the selling price at the time of sale, which is adjusted for the quality of the tobacco. This is similar to previous studies in that



the quality of tobacco is determined by inspecting the dried leaves generated and the different sorts of tobacco seeds (Aini et al., 2019). After determining the variety and flavor of the tobacco, the buyer will discuss the quality and price with the farmer. There are several problems that occur in tobacco farming: 1) The small amount of capital owned by farmers to boost their production elements is the reason why tobacco agricultural production still uses traditional techniques; 2) Tobacco farmer groups are not active in conducting partnerships, to support tobacco farming through coaching to get financial assistance; 3) The government does not actively promote tobacco products, so production costs (eg. fertilizers) are also relatively high and fluctuating selling prices make farmers do not have strong capital. This finding is also supported by previous researchers, where farmers have a low supply of market prices, capital, and market access (Jufri et al., 2021). Thus, a joint effort is needed to advance tobacco farming in Temanggung Regency, to advance farmers who have low bargaining power in the market.

### **Distribution Pattern**

The supply chain begins with the planting process and continues until the final consumer receives the tobacco product. weeding, harvesting, and distribution of agricultural products, starting in nurseries. Farmers go through a number of post-harvest procedures, including drying and chopping. Farmers are one of the participants in the production of tobacco. Farmers' income may increase as a result (Muchfiroodin et al., 2015). Because dry and "chopped" tobacco is more expensive than wet sales, farmers can make a living. When farmers distribute tobacco after harvest, there are three marketing channels that take place. Tobacco marketing involves four different actors: wholesaler, small dealers, brokers, and warehouses/factories. Farmers are involved in all aspects of the cultivation of tobacco, including sowing, fertilizing, weeding, harvesting, and post-harvesting. Brokers and wholesaler are players who operate as a conduit between small dealers and the distribution of cigarettes to companies and warehouses. Brokers do not prepare the dry and chopped tobacco products they buy from growers; they simply handle storage and distribution. Because they only accept low-quality cigarette items, small traders only distribute directly to consumers.

The capital utilized in the distribution of tobacco goods cannot be separated from the marketing actors. Financial and non-financial capital are the two types of capital used in distribution execution. In order to reduce risk in supply chains, financial capital is employed to improve cooperative cash-to-cash cycles and working capital. Mutual trust serves as the foundation for the non-financial capital that farmers and marketing organizations employ to implement marketing strategies. Wet and dry tobacco product prices and quality serve as benchmarks for marketing agencies working together. Along with considering

agency collaboration, there are other marketing operational techniques, including: (1) exchange and purchase; and (2) transportation, storage, and quality selection. The marketing channels that occur can be seen in Figure 1.

In Bulu District, Temanggung Regency, there are three types of distribution flows for tobacco production: (1) farmers - middlemen - small traders - warehouses/cigarette factories - final consumers; (2) farmers - brokers - warehouses/cigarette factories - final consumers; and (3) farmers - small traders - consumers (see, figure 1). In distribution channel 1, the process begins with tobacco growers and proceeds through three marketing institutions: middlemen, small traders, and cigarette factories/warehouses. In channel 2, tobacco agricultural goods are distributed directly from farmers to warehouses/cigarette manufacturers rather than through small traders, and the products are sold to final customers rather than through middlemen marketing players.

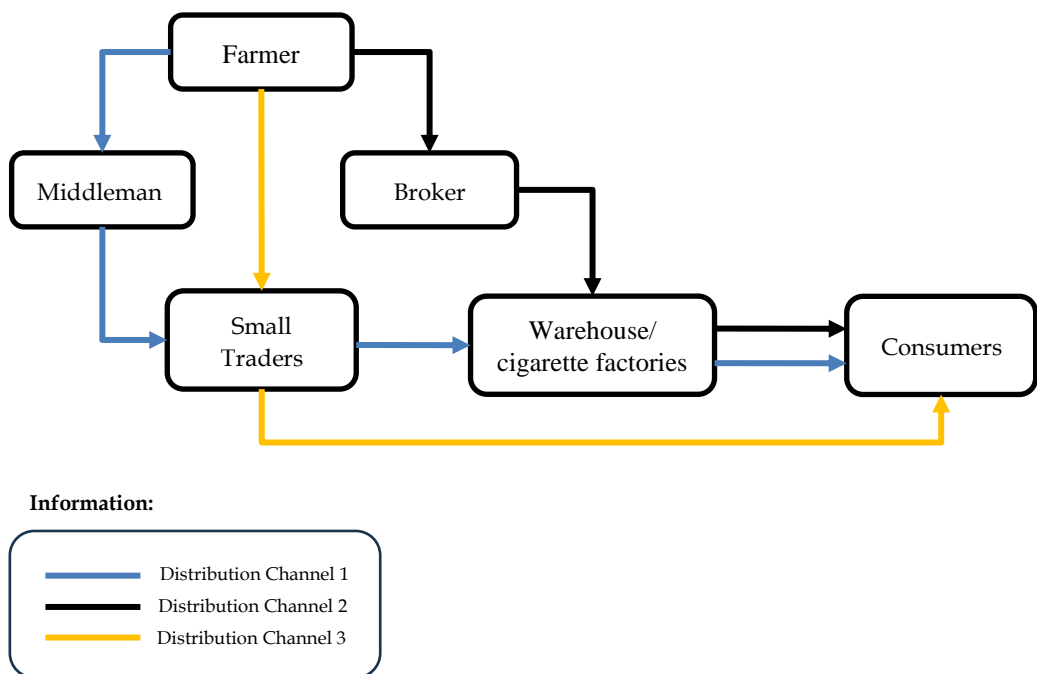


Figure 1.  
Marketing Channels

On channel 3 farmers only sell to small traders to be marketed directly to consumers. Brokers and wholesaler only carry out the processing to sort out the quality of the tobacco that will be deposited in the Warehouse/Factory, if it is not in accordance with the quality then it will be sold directly to small traders or tobacco consumers. The warehouse/cigarette factory carries out storage to sort good quality materials to be processed into cigarettes. The company that has

warehouses in Temanggung Regency on a large scale is PT. Gudang Garam, Tbk and PT. Djarum which has a price effect on the quality of tobacco products produced by farmers.

The farmer in selling their crops are very difficult to enter the warehouse/factory representative in Temanggung Regency. There are only 5 respondents who can sell directly to the warehouse/factory, because they are also wholesaler to buy tobacco from farmers. There are 2 warehouses representing large cigarette factories in Temanggung, namely PT. Gudang Garam and PT. Djarum. Farmers cannot directly sell their crops to warehouses/factories because the average farmer does not have an Membership Card, which is a condition for selling cigarettes to warehouses/factories. Membership card is only given to people who have large capital to sell their tobacco products. There are 30 respondents who sell their crops to brokers, with small margins. There were also 10 respondents who sold their crops to wholesaler, because the results did not match the quality and price set by the factory. Meanwhile, for crop yields that do not match the quality of the warehouse, there are 15 farmer respondents who sell directly to the final consumer, through the results of the "chopped" that has been done. The behavior shown by supplying companies has been explained by previous researchers, where the price strategy only follows the company (not farmers) when appropriate demand occurs (He et al., 2023; Saleheen & Habib, 2023). Therefore, even though farmers set their own prices, it is difficult to sell because the demand for tobacco in Temanggung Regency is only based on requests from cigarette companies.

The decision to sell a product through a particular marketing channel depends on the utility obtained by farmers, which is determined by each price across channels, deviations from reference prices, cultivation costs, membership fees for a particular marketing channel, transportation costs and additional utilities/disutilities associated with installation to a specific channel (Bhanot et al., 2021). Collaboration between marketing institutions is an important element in facilitating the distribution of tobacco products. Farmers already have a distribution network that has long been carried out through brokers or delivered to tobacco factory warehouses (PT. Djarum/ PT. Gudang Garam, Tbk). Collaboration is carried out on the basis of trust because they have been running the business for a long time. Apart from trust capital, product quality (either in terms of size or in terms of taste) and price level are also benchmarks for agreements that occur between marketing institutions. Please note in advance that farmers cannot sell directly to cigarette factories due to product quality and membership limitations when selling to factories.

Tobacco product marketing also has risks in its implementation. There are weather risks, environmental and biological risks, market risks, operational and management risks. Each of these risks has a different impact at each level in the

tobacco supply chain. However, although each level in the tobacco value chain has different risks, they are interrelated. For example, weather risk will affect quality degradation, and will further cause the next layer to mix tobacco purchased from the local area with other regions (Balezentis et al., 2023; Muchfirodin et al., 2015; Yan et al., 2020). Quality variances also affect margins for intermediaries and suppliers. In overcoming marketing problems, government intervention is needed with regulatory market interventions directed at legality or sustainability, free market self-regulation can operate in a supportive and restrictive way (Akkerman et al., 2023; Sotirov et al., 2022). The existence of institutions that act as intermediaries (for example: cooperatives) is a key mechanism in this context, which usually functions as a mediator between small and medium farmers and large traders, thereby affecting the power relations between farmers and traders (Reis et al., 2023). Efforts to strengthen institutions can also increase tobacco farmers' competitive opportunities in the larger economic structure by implementing strategies: establishing partnerships, strengthening individuals, and increasing service capacity (Yuniati et al., 2017). Institutions that are built must side with farmers to increase farmer supply which has the effect of increasing farmer income.

## CONCLUSION AND SUGGESTION

### Conclusion

The average yield of tobacco farmers is 392.57 kg and they have a gross income of IDR 18,651,667 in one planting period. The net income of tobacco farming has a ratio of costs incurred to net income received which has a value of 3.70. This result is a measure of the income received by farmers in 1 planting period. There are 3 marketing channels created in the post-harvest process in Bulu District. The actors who play a role in the post-harvest process are brokers, wholesaler, small traders, and Warehouse/Factory representatives in the distribution.

### Suggestion

Steps that need to be taken to improve the problem of distribution of tobacco products that occur in Temanggung Regency can be through: (1) counseling and coaching: to explain the appropriate mechanisms for producing and selling tobacco to farmers to get maximum results, (2) strengthening institutions (example : farmer groups, cooperatives): this is expected to strengthen farmers in market price competition, and (3) partnership strategy: to reduce losses that often occur to tobacco farmers. It is hoped that these three strategies will be sustainable and will have the effect of increasing farmers' income and reducing marketing margins for processed tobacco products.

For further research, in obtaining supply chain identification, it is expected to look at the margins received by each actor to see the shape of the market that occurs in the marketing of tobacco crops. In addition, by adding added value analysis it is also possible to see the processing that occurs in each actor. So that it can enrich the discussion carried out in his research.

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