FARMING GROUP INSTITUTIONS IN COCOA BUSINESS ANALYSIS OF THE ROLE AND THEIR EFFECT ON PRODUCTIVITY AND INCOME IN BANYUWANGI DISTRICT

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Abstract

Jambewangi Village has a high potential in producing cocoa because there are many people's cocoa plants that are cultivated either in the yard of the house or in the forest. The high cocoa production produced in Jambewangi Village is not balanced with its declining productivity due to the lack of optimal care for cocoa plants and not in accordance with GAP (Good Agricultural Practice). The implementation of GAP should be guided and directed by a farmer group institution in order to increase the productivity of cocoa, but the farmer group is suspected to be still not optimal in carrying out its role in accordance with the regulation of the minister of agriculture Number 67/Permentan/SM.050/12/2016.

Another problem is that there is an increase in cocoa productivity but it is not supported by the existence of marketing institutions and their functions in distributing goods, information, or cash which is described by the cocoa commodity supply chain in Jambewangi Village. The existence of a clear and good supply chain will support the creation of a good and integrated workflow from upstream to downstream.

The researcher wants to examine the institutional role of farmer groups (as a learning platform, a vehicle for cooperation and production units) and their effect on productivity and income as well as the relationship between farmer characteristics and perceptions of farmer groups using correlation analysis, and existing cocoa supply chain in Jambewangi. The data analysis method used is scoring analysis, rank spearman and t-test. The sampling method used is simple random sampling with 30 respondents used and the research location is in Jambewangi Village, Banyuwangi Regency. The existence of this research can be useful for farmer groups in providing direction to members to increase production from cocoa plants and can increase cocoa farmers' income by re-stimulating the role of farmer groups based on the 2016 Ministry of Agriculture.

Keyword: Institution, Cocoa Farmer, Perception, Correlation

1.INTRODUCTION

Cocoa is one of the plantation commodities originating from the United States whose seeds can be used as chocolate products (Afolayan, 2020). Cocoa commodity has an important role in Indonesia because cocoa is the third country's foreign exchange contributor after palm oil and rubber. Indonesia is the third largest cocoa producing country after Ivory Coast and Ghana (Mulyo & Hariyati, 2020). Cocoa can be processed into products in the form of cocoa powder, chocolate bars or other chocolate-based products. One of the districts in Indonesia that has the potential for cocoa production is Banyuwangi Regency (Rahardjo, 2011)

Banyuwangi Regency is a cocoa-producing center in East Java Province with total production in 2018 reaching 8054 tons or 46.77%. The village as a cocoa-producing center in Banyuwangi is located in

Jambewangi Village with cocoa production in 2019 reaching 167.5 tons. The high cocoa production in Jambewangi Village is not matched by its declining productivity from 2016-2018 (Budiman et al, 2020)

The decline in productivity in Jambewangi Village requires efforts to increase the cocoa productivity again. These handling efforts cannot be separated from the institutions or social group's role in the farming community life which is commonly referred to as farmer groups (Black et al, 2021). The farmer group's institutional role for farmers includes providing facilities needed by farmers such as production facilities, increasing the bargaining position of farmers in economic activities so as to reduce losses that can be experienced by farmers. The farmer group's roles in agriculture are very important in the lives of farmers, because all activities and problems in farming are carried out by the group simultaneously. The role in a farmer group institution can be measured through the perception of the farmers who are members of the farmer group (Pradana, 2013).

There are three institution roles or functions according to the regulation of the minister of agriculture No. 67/Permentan/SM.050/12/2016 (Permentan, 2016), namely as a learning forum, as a cooperation ride and as a production unit. As a learning platform, it means that farmers gather or in groups to learn which is useful in increasing knowledge, skills and attitudes and growing independence in farming (Asigbaase, 2020). The meaning farmer group's function as a ride for cooperation is that farmers group together to strengthen cooperation between members and other parties related to the aim of making farming more efficient in dealing with challenges, threats and obstacles in the organization. While the function of the farmer group as a production unit means that the farming carried out by each member of the farmer group as a whole must be seen as a business unit that can be developed to achieve economies of scale, both in terms of quality, quantity and continuity (Mawarni et al., 2017).

A farmer group is a group of farmers formed on the common interest basis that are in the conditions of the social, economic and resource environment including the closeness between farmers to promote member farming. Farmer group coaching is aimed at applying the agribusiness system and increasing the farmers' participation by collaborating between farmers and other related parties to develop farmers' farming (Saputra et al, 2020). The coaching activities carried out by farmer groups are expected to provide benefits for farmers, including helping to explore the potential of farmers so that farmers can independently overcome the problems that exist in their farming group and make it easier for farmers to find information on market developments, technology, capital and others so that can increase the productivity and income of members of farmer groups (Nugroho, 2019).

The cocoa farmer group establishment in Jambewangi Village area aims to improve and develop the ability of farmers to play a greater role in development. The farmer group's role will support the group and the members of its group in carrying out their respective farming activities which affect the member's income conditions. With the farmer groups existence, it can facilitate and help members of farmer groups to carry out their farming activities, that easiness is for example the assistance distribution from the government through farmer groups to its members, and sharing experiences about farming. This is what is then used by farmers to join as members of farmer groups in order to increase their income (Basri et al., 2021).

The cocoa farmer groups existence in Jambewangi Village is expected to play a good role in increasing the productivity and income of cocoa farmers, but in reality, there are still many obstacles experienced by cocoa farmers in doing their farming, both on-farm and off-farm constraints (Nadege et al., 2020). The on-farm constraint is the decline in cocoa productivity in Jambewangi Village, this is because the farmers in carrying out their farming are not optimal and not in accordance with GAP (Good Agricultural Practice) in GAP there are guidelines for good cultivation techniques starting from the planting process to post-harvest. GAP or Good Agriculture Practice is a technical implementation of agricultural production certification processes system that uses advanced, environmentally friendly and sustainable technology, so that harvested products are safe for consumption, workers' welfare is considered and farming provides economic benefits for farmers. Meanwhile, the off-farm constraint is that the harvested cocoa beans are only sold in the form of real beans and there is no processing of cocoa beans into chocolate-based products (Hariyati, 2016).

According to data sourced from the Central Bureau of Statistics, Jambewangi Village is a cocoa-producing center in Banyuwangi Regency. But in 2016-2018 the productivity of cocoa farming in Jambewangi Village decreased. The decline in cocoa productivity in Jambewangi Village is caused by the majority of cocoa farmers grow their cocoa in the forest so that in terms of maintenance it is not optimal and not in accordance with GAP (Leksono et al., 2021). GAP is a good cultivation guide from planting to post-harvest. The implementation of GAP cocoa cultivation should be guided and directed by a farmer group institution that oversees cocoa farmers in order to increase cocoa productivity (Hariyati et al., 2020).

Institutional farmer groups in Jambewangi Village are farmer groups that handle horticulture such as dragon fruit, crystal guava, mangosteen, durian and others, so the farmer groups have not focused on cocoa. The existing special cocoa farmer groups are cocoa farmer groups that have just been formed so that the existing institutions are suspected to still not meet the ideal of a farmer group institution based on the 2016 (Permentan, 2016).

Farmer groups in Jambewangi Village have not fully implemented the functions of an institution, this is evidenced by the existence of activities carried out only in the form of cultivating cocoa planting and care together (Muhardi et al, 2021). Another evidence that the role of farmer groups is not yet optimal is that it has not played a role in distributing technology from the government to its members, this is evidenced by the assistance of cocoa processing technology from the government that has not been utilized properly and is only stored in storage warehouses, so that cost efficiency in cocoa processing has not been achieved (Gniayou et al, 2021). The institutional role of cocoa farmer groups in this problem is needed to be able to increase the productivity and income of cocoa farmers in Jambewangi Village, Banyuwangi Regency.

Based on the explanation of the problems above, the researchers are interested in researching **" Farmers' Group Institutions in Cocoa Farming: Analysis of its Role and Effect on Productivity and Income** (Study in Jambewangi Village, Sempu District, Banyuwangi Regency)". This research was conducted on farmer groups and their members in Jambewangi Village,

Sempu District, Banyuwangi Regency. Researchers are interested to analyze whether the farmer groups cocoa in the village Jambewangi has function well and how the role of farmer groups in the farming of cocoa in the village Jambewangi District of Sempu Banyuwangi, how does the relations between the character of farmers with their perceptions and farmers' groups in the village Jambewangi Subdistrict Sempu Banyuwangi Regency and how is the relationship between the role of farmer groups on productivity and farm income among farmers who perceive high and low perceptions of the role of farmer groups in Jambewangi Village, Sempu District, Banyuwangi Regency(Awudzi et al., 2021). .

Previous research that is similar to the first problem formulation related to the role of farmer groups is from Parawansa., et al (2018), Impal et al., (2017), Sumantri dan Aris (2018) dan Arini et al., (2018) the article discusses the role of farmer groups based on the role in the regulation of the minister of agriculture in 2016 namely the role of a learning class, a cooperation forum and production units, for data analysis methods both use Likert scale analysis. The results of the study show that each role varies depending on the results of the Likert scale assessment from farmers on the role of farmer groups at the research location.

Previous research that is similar to the second problem formulation is related to the relationship between characteristics and perceptions, namely from Arofatul & Hariyati, (2018), (Azwar et al., 2016), (Farida and Suswadi 2017) the three articles discuss the relationship between characteristics and perceptions, data analysis method used is Rank Spearman and the results showed that there is a significant relationship and does not significantly depend from value results sig. (2-tailed .

Previous research that is similar to the third problem formulation related to differences in farmer productivity and income is from (Sari et al., 2019), (Fatmawati et al., 2019), (Lumampa et al., 2019). These three articles used the t-test (Independent Sample T-Test) data analysis method. The results showed a significant difference was not significant and depends from value sig. (2-tailed).

The gap from similar research lies in the formulation of the problem, namely that there has never been a combination of the institutional role of farmer groups based on the 2016 minister of agriculture regulation

with its effect on the productivity and income of farmers so that it has a contribution that is able to provide recommendations for calculating differences in income and productivity between farmers who active in farmer groups with those who are not. The role of farmer groups must also be further enhanced so that all members can increase the productivity of cocoa and increase farmers' income.

The existence of literature studies that have been carried out by previous researchers can provide temporary hypotheses or conjectures related to the problems in this study. The hypotheses in this study are: There is a relationship between the characteristics of cocoa farmers and their perception of the role of the Manggar Kencono farmer group in Jambewangi Village. There are differences in income and productivity between cocoa farmers who have high perceptions and low perceptions of the role of the Manggar Kencono farmer group in Jambewangi Village.

2.CONSTRUCTION OF REFERENCES

This study uses primary and secondary data. Primary data was obtained by conducting structured interviews with a total of 30 respondents. Respondents are cocoa farmers in Jambewangi Village, while the secondary data used is cocoa production data from East Java Province to Jambewangi Village cocoa production data obtained from the Central Statistics Agency (BPS).
Data collection was carried out by interviewing farmers from house to house, because at the time of data collection the PSBB and PPKM had not been implemented so they could still collect data face-to-face.

The data analysis method used to determine the role of the Manggar Kencono cocoa farmer group in Jambewangi Village used descriptive analysis with scoring analysis 1-3 using the formula:

$$RS = \frac{m-n}{b}$$

RS=(m-n)/b
Explanation:
RS = Scale Range
m = Highest Score in the measurement (number of questions x highest score)

n = Lowest Score in the measurement (number of questions x highest score)
b = Number of classes formed

From this formula, a range of scales will be obtained that is used to determine the criteria for making decisions regarding perceptions of high, sufficient or low in the Manggar Kencono farmer group. The criteria for decision making roles indicator rides classroom learning and collaboration as follows:
Farmers' perception is high (score 23,4 – 30)
Farmers' perception is quite sufficient (score 16,7 – 23,3)
Farmers' perception is low (score 10 – 16,6)

While the decision-making criteria for indicators of the role of production units are:
Perception of farmers is high (score 18,7– 24)
Farmers' perception is quite sufficient (score 13,4 – 18,6)
Farmers' perception is low (score 8 – 13,3)

The analytical method used to determine the relationship between farmer characteristics and their perception of the role of farmer groups in Jambewangi Village uses Spearman's Rank Analysis with the formula:

$$\rho = 1 - \frac{6\sum di^2}{n(n^2-1)}$$

Explanation:
ρ = Rank Spearman correlation value
d2= Difference between each pair of farmer character rank and farmer perception
n = Rank spearman number of pairs
From that formula, then we will get results Sig. (2-tailed) which explains the presence or absence of a relationship between the characteristic farmers with the perception of the role of the farmer groups manggar Kencono. The following are the decision-making criteria in determining the relationship between farmer characteristics and their perception of the role of the Manggar Kencono farmer group:
If sig > 0,05 then H0 accepted, and H1 rejected, which means that there is no significant relationship between farmer's character X's and Y's perception
If sig < 0,05 then H1 accepted and H0 rejected, which means that there is a significant relationship between farmer X's character and Y's perception
The analytical method used to determine the difference in income and productivity between farmers who have low perceptions and high perceptions is using the independent sample T-Test statistical analysis method with the formula:

$$\frac{\overline{x}_1 - \overline{x}_2}{\sqrt{\frac{(n_1-1)s_1{}^2-(n_2-1)s_2{}^2}{n_1+n_2-2}\left(\frac{1}{n_1}\right)+\left(\frac{1}{n_2}\right)}}$$

‾x_1 = Average Productivity/income of farmers who have a high perception

‾x_2 = Average Productivity/income of farmers who have a low perception

S1 = Standard deviation of farmers who have a high perception

S2 = Standard deviation of farmers who have a low perception

n1 = Sample of farmers who have high perception

n2 = Sample of farmers who have low perception

From that formula, then we will get results Sig. (2-tailed) which explains the presence or absence of difference between income/productivity of farmers who have a high perception of the revenue/productivity of farmers who have a perception of low, with the decision-making criteria as follows:

If sig > 0,05 then H0 accepted, and H1 rejected, there is no significant difference between the income/ productivity of farmers who have a high perception and the income/ productivity of farmers who have a low perception

A. If sig < 0,05 then H1 accepted and H0 rejected, there is a significant difference between the income/ productivity of farmers who have a high perception and the income/ productivity of farmers who have a low perception

B. Guna mengetahui kondisi saat ini rantai pasok komoditas kakao di Desa Jambewangi dilakukan dengan metode deskriptif. Data yang dibahas diperoleh melalui wawancara mendalam kepada responden dan observasi lapangan.

3. RESULT AND DISCUSSIONS

The Institutional Role of the Manggar Kencono Farmer Group based on the Perceptions of Farmer Group Members in Jambewangi Village

The analysis used in the first problem formulation is using a scoring analysis of 1-3. The scoring analysis was used to assess the perception of the members of the farmer groups on the role of the Manggar Kencono farmer group in Jambewangi Village. Role is the role that is based on the Regulation of Ministry of Agriculture No. 67/Permentan/SM.050/12/2016. The role consists of the role of the learning class, the ride for cooperation and the production unit. The level of role as a learning class for the Manggar Kencono Farmer Group in Jambewangi Village according to the perceptions of its members can be seen in Table 1.

No	Score	Number of Respondents (people)	Percentage (%)
1	Low (score 10 – 16,6)	13	43.3
2	Medium (score 16,7 – 23,3)	-	-
3	High (score 23,4 – 30)	17	56.67
	Total	**30**	**100**

Table 1. The level of the role of the Manggar Kencono Farmer Group as a Learning Class according to the Perceptions of Members in Jambewangi Village

Based on Table , it can be seen that there are 13 respondents or 43.3% perceive the role of the Manggar Kencono cocoa farmer group as low, and 17 respondents or 56.67% perceive that the role of farmer groups as a high learning class, so that it is obtained The dominant percentage is a high role, which is 56.67 %, so it can be said that the Manggar Kencono cocoa farmer group in Jambewangi Village has carried out its role as a learning class quite well because it has prepared learning facilities, presents field instructors in providing information and directions related to cultivation. cocoa and create a learning environment that is formal, conducive, serious and provides a good disciplinary influence for its members.

The second role of farmer groups is the role as a ride for cooperation. The level of the role of the Manggar Kencono Farmer Group as a vehicle for cooperation in Jambewangi Village according to the perceptions of its members can be seen in Table 2

No	Score	Number of Respondents (people)	Percentage (%)
1	Low (score 10 – 16,6)	13	43.33

No	Score	Number of Respondents	Percentage
2	Medium (score 16,7 – 23,3)	10	33.3
3	High (score 23,4 – 30)	7	23.3
	Total	**30**	**100**

Tabel 2. The level of the role of farmer groups manggar Kencono as a Ride of Cooperation by members in the village Perception Jambewangi

Based on Table 2, it is known that there were 13 respondents, or by 43.33% stated or perceive that the role of cocoa farmer groups manggar Kencono as a ride for cooperation was low, 10 respondents or by 33.3% stated or perceive that their role was and there were seven respondents or by 23.3% stated or perceive that their role is high. From these results it can be said that the role of the Manggar Kencono cocoa farmer group as a vehicle for cooperation is dominant in the low role category because the highest percentage is located at a low score of 43.33%. This is because the Manggar Kencono farmer group, which was only formed at the end of 2019, has not yet collaborated with many related parties, only collaborating with information providers such as UNEJ (Pateda et al., 2021).

The third role of farmer groups is the role of a production unit. The level of the role of the Manggar Kencono farmer group as a production unit in Jambewangi Village according to the perceptions of its members can be seen in Table 3

No	Score	Number of Respondents (people)	Percentage (%)
1	Low (score 8 – 13,3)	15	50
2	Medium (score 13,4 – 18,6)	10	33.3
3	High (score 18,7– 24)	5	16.67
	Total	**30**	**100**

Tabel 3. The level of the role of the Manggar Kencono Farmer Group as a Production Unit according to the Perceptions of Members in Jambewangi Village

Based on Table 3. it can be seen that there were 15 respondents or 50% stated or perceived that the role of the Manggar Kencono cocoa farmer group as a production unit was low, 10 respondents or 33.3% stated or perceived that the role was moderate and there were 5 respondents or 16.67% stated or perceived that the role was high.

From these results it can be said that the role of the Manggar Kencono cocoa farmer group as the dominant production unit is in the low role category because the highest percentage is located at a low score of 50%. This is because the cocoa farmer groups have not been able to play a role as a production provider unit properly because the farmer groups are still newly formed and have not done much cooperation with the providers of agricultural production facilities, only the assistance in the form of fertilizers and seeds comes from the government.

The Relationship between Farmer Characteristics and Perceptions of the Role of the Manggar Kencono Farmer Group in Jambewangi Village

According to the theory, perception is influenced by other variables that can determine perception, namely age, education level, socio-economic background, culture, physical environment, occupation, personality and individual life experiences. These variables are found in the individual characteristics of farmers, so the researchers in the second problem formulation want to know whether or not there is a significant relationship between the characteristics of farmers and their perceptions of the role of the Manggar Kencono farmer group.

The characteristics of cocoa farmers in Jambewangi Village, Sempu District, include 5 characteristics, namely age, education, length of farming, land area and number of dependents. The characteristics of cocoa farmers are used to determine the relationship between perceptions of cocoa farmers and some characteristics of cocoa farmers.

In proving whether or not there is a relationship between the two variables, Rank Spearman analysis is used. Rank Spearman Correlation explains the level of strength (closeness) of the relationship between two variables, the direction (type) of the relationship between two variables and looks at the level of significance. The following is the result of the correlation of farmer characteristics and their perceptions of the role of farmer groups can be seen in Table 4.

No.	The Characteristics of Farmer	Range of Characteristics	The Value of Charateristics	Correlation Value		Description (S, NS)
				rs	Sig.(2-tailed)	
1.	Age (years)	27-80	56	-0,155	0,414	NS
2.	Education (years)	0-12	6	-0,035	0,855	NS
3.	Farming Experience (years)	3-21	13	-0,038	0,842	NS
4.	Land area (ha)	0,125-5	0,675	0,398	0,029	S
5.	Number of family dependents (persons)	0-4	1	-0,001	0,997	NS

Table 4. The Relationship between Farmer Characteristics and Perceptions of the Role of Cocoa Farmer Groups

Based on Table 4, it can be seen that the table is the result of the analysis of Rank Spearman correlation using the SPSS 20 application. Rank Spearman analysis is used to see the relationship between farmer characteristics and farmers' perceptions of the role of Manggar Kencono cocoa farmer groups in Jambewangi Village, Sempu District, Banyuwangi Regency. The results of the calculations are used to see how strong the relationship between the two variables is, to see the direction of the calculation, namely positive (+) or negative (-), to see the level of entanglement in the relationship, and to see the significance value of the calculation results. The following is an explanation of the results of the Spearman Rank analysis of the relationship between farmer characteristics and their perceptions of the Manggar Kencono farmer group, namely:

The results of the Spearman Rank correlation analysis show that of the five characteristics of cocoa farmers, there is 1 character that has a positive direction, namely land area. It can be interpreted that the increase in land area characteristics will be followed by an increase in the perception of cocoa farmers on the role of cocoa farmer groups. Meanwhile, the character of age, education, length of farming and the number of

family dependents have a negative relationship direction. It can be interpreted that the increase in age, education, length of farming and the number of family dependents is followed by a decrease in cocoa farmers' perceptions of the role of the Manggar Kencono farmer group.

The results of the Spearman Rank correlation analysis show that of the five characteristics of cocoa farmers, none of the characteristics has a strong relationship with farmers' perceptions of the role of the Manggar Kencono farmer group. This is evidenced by the results of the rs value of the five characteristics less than 0.75. Characteristics of age, education, length of farming, and number of dependents of the family choose a very weak sleigh relationship and for the characteristics of land area have a fairly close relationship(Azwar et al.,2016).

The results of the Spearman Rank correlation analysis show that of the five characteristics of cocoa farmers, there are 4 characteristics that are not significant, namely the characteristics of age, education, length of farming and number of family dependents. This is because the value of sig. (2- tailed) is greater than 0.05 or an error rate of 5%. Meanwhile, the characteristics of land area showed significant results because the value of sig. (2- tailed) showed a value of 0.029, the value was less than 0.05 or an error rate of 5%, meaning that the characteristics of the land area were significantly followed by an increase in cocoa farmers' perceptions of the role of the group Manggar Kenono farmer. And it can be interpreted that there is a significant relationship between the characteristics of the farmer's land area and his perception of the role of the Manggar Kencono farmer group.

Differences in the Income and Productivity of Cocoa Farmers in Various Farmers Perceptions of the Role of the Manggar Kencono Farmer Group in Jambewangi Village

1.Income Difference

Income is the main orientation in farming activities, it encourages farmers to always try to obtain maximum income to meet their needs and to achieve the welfare of farmers and their families. The income referred to in this study is the income obtained from cocoa farming in one year per hectare (Fitriyah and Hariyati, 2020). The amount of income can be seen from the difference between the total revenue received by the farmer and the total cost incurred by the farmer. The amount of income earned by cocoa farmers depends on the results of cocoa production, production costs incurred and the prevailing selling price.

Total revenue is obtained from the multiplication of the amount of production with the selling price of cocoa. Revenues obtained results of the difference between total revenue with total costs incurred. If the farmer's acceptance obtained is greater than the total cost of the farm can be said to be favorable and otherwise, if reception were obtained pe t ani smaller than the total cost of farming losses. The total costs incurred by cocoa farmers in Jambewangi Village, Sempu District, are in the form of fixed costs and variable costs. Fixed costs are in the form of depreciation costs from equipment and land rent for one year while variable costs are in the form of fertilizer costs, medicines, and labor costs. To find out whether or not there is a significant difference between the income of cocoa farmers who have a high perception and a low perception, it can be seen in Table 5.

No	Farmer's Perception	Cocoa Farming Income (Rp/ha/year)		
		Average Income	*Sig.(2-tailed)*	Information (S,NS)
1	High Perception	19.276.995,098	0.190	NS
2	Low Perception	13.373.192,308		

Table 5. Differences in Farmers' Income in various perceptions of farmers on the role of Farmers Group manggar Kencono Village Jambewangi

Based on Table 5, it can be seen that the average income of cocoa farmers who have a high perception is Rp19,276,995,098 Rp/ha/year, while the average income of cocoa farmers who have a low perception is Rp. 13,373,192,308 Rp/ha/year. The difference between the average income of cocoa farmers who have high and low perceptions is Rp. 5,903,802,790 Rp/ha/year. The average income of cocoa farmers is obtained from 17 respondents who have a high perception and 13 respondents who have a low perception. The big difference in income is because farmers who have a high perception of the majority of farmers who have large areas of land and are active in meetings organized by farmer groups, so that information about

good cultivation is more widely accepted by farmers who are active in farmer group activities and thus affect production. from cocoa and automatically higher

income received. In addition, the costs incurred are also different, the lower the costs incurred in a business will affect to the higher the income of cocoa farmers.

The results of the Independent Sample T-Test test obtained a significance value of Sig.(2-tailed) 0,190. Value 0,190 > 0,05 then H0 accepted dan H1 refused. This means that there is no significant difference between the income of farmers who have a high perception and the income of farmers who have a low perception of the role of the Manggar Kencono cocoa farmer group in Jambewangi Village.

Based on the results of the independent sample t-test, it is known that the average income of cocoa farmers who have a high perception is greater than the income of cocoa farmers who have a low perception. The insignificant difference is because the production obtained is different. Farmers who have high perceptions and farmers who have low perceptions basically both expect maximum profit depending on

each farmer in using the costs to carry out their cocoa farming process. High income can be obtained if farmers can use costs efficiently, if farmers want to maximize their income, cocoa farmers must be

able to combine production factors and be able to reduce production costs incurred to a minimum in order to increase their income. And in this case, all members of the cocoa farmer group are expected to be active in the activities held by the farmer group, either meetings or other activities so that farmers get directions from field extension officers (PPL).

Productivity Difference

Productivity can be defined as the ratio of the amount of cocoa farm production (kg) to the total area of cocoa land (ha). Productivity is also the potential of land in farming to be able to produce at a certain level of production with a certain area, such as cocoa production that can be achieved per hectare in one year.

Whether or not there is a difference between productivity in cocoa farming between farmers who have a high perception and farmers who have a low perception, the Independent Sample T-Test is tested statistically. The results of the Independent Sample T-Test analysis on the productivity of cocoa farming on farmers who have a high perception and cocoa farmers who have a low perception of the role of the Manggar Kencono farmer group in Jambewangi Village can be seen in Table 6.

No	Farmer's Perception	Cacao Farming Productivity (kg/ha/year)		
		Productivity Average	Sig.(2-tailed)	Information (S,NS)
1	High Perception	902,12	0.207	NS
2	Low Perception	660,92		

Table 6. Differences Productivity in different cocoa farming Perception of farmers on the role of Farmers Group Manggar Kencono Village Jambewang

Based on Table 6. discovered that the average productivity of cocoa farming to farmers who have a high perception that is equal to 902.12, while the average productivity of cocoa farming to farmers who have the perception low at 660.93. The difference between the average productivity of cocoa farmers who have high and low perceptions is 241.19 The average productivity of cocoa farmers is obtained from 17 respondents who have high perceptions and 13 respondents who have low perceptions. The big difference in productivity is due to the difference in the area of land owned by each farmer and the production obtained by the farmer per year.

The results of the Independent Sample T-Test through the SPSS application obtained a significance value of 0,207 or 0,207 > 0,05 then H0 accepted and H1 accepted. This means that there is no significant difference between the productivity of cocoa farming

in farmers who have a high perception and productivity of farmers who have a low perception of the role of the Manggar Kencono farmer group in Jambewangi Village.

Based on the results of the analysis that has been described, it can be concluded that there is no significant difference between the productivity of cocoa farming on cocoa farmers who have high perceptions and cocoa farming productivity on farmers who have low perceptions.

Existing Condition Rantai Pasok Komoditas Kakao di Desa Jambewangi

Struktur rantai pasok kakao di Desa Jambewangi terdiri dari beberapa anggota rantai pasok yang memiliki peranan yang berbeda. Rantai pasok komoditas kakao di Desa Jambewangi terdiri dari petani, pedagang besar, dan konsumen. Struktur beserta aliran rantai pasok dapat dilihat pada Gambar 1. Berdasarkan struktur tersebut dapat diketahui aliran produk, informasi, dan keuangan yang terjadi mulai dari hulu a hilir hingga hulu.
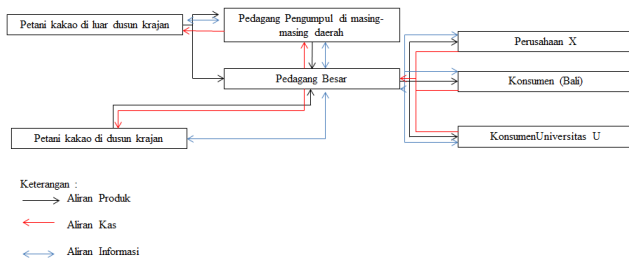
Gambar 1. Rantai Pasok Komoditas Kakao di Desa Jambewangi

Berdasarkan Gambar 1. Aliran produk kakao dimulai dari hulu yakni dari 2 daerah yakni Dusun Krajan dan luar Dusun Krajan yang masih di dalam Desa Jambewangi ataupun tidak. Hasil panen kakao petani Dusun Krajan dijual langsung kepada pedagang besar setiap hari rabu bertepat di Pasar Dusun setempat berupa biji kering sedangkan hasil panen kakao dari petani di luar Dusun Krajan dapat dijual melalui pedagang pengumpul di daerah masing-masing yang nantinya akan dijual kepada pedagang besar yang sama. Petani di luar Dusun Krajan juga menjual hasil panennya langsung kepada pedagang besar apabila hasil panen sedang berlimpah baik buah basah ataupun kering.

Kakao yang dibeli oleh pedagang besar dari petani dan pedagang berupa biji kering akan disortasi berdasarkan kualitas dan diberikan harga Rp 20.000 – Rp 24.000/kg yang dibayarkan langsung saat produk kakao berada di tangan pedagang besar. Kakao yang dibeli oleh pedagang besar berupa buah basah akan diolah sehingga menghasilkan biji kakao fermentasi kering. Pedagang besar juga membeli langsung buah kakao glondongan kepada petani apabila terdapat permintaan dari konsumen.

Produk kakao baik biji kering asalan, biji kering fermentasi, ataupun buah kakao glondongan dijual kepada beberapa konsumen sesuai dengan permintaan yang diinformasikan kepada pedagang besar. Produk biji kering asalan akan dijual kepada konsumen Bali yang siap menerikma berapapun dan dengan kualitas apapun biji kakao kering yang tersedia. Pembelian dilakukan 1-2 kali/minggu apabila sedang panen raya dan 2 kali/bulan apabila tidak sedang panen raya.

Konsumen selanjutnya yakni berasal dari Perusahaan X dengan permintaan biji kakao fermentasi berkualitas baik atau buah kakao glodongan yang dilakukan sesuai permintaan memalui informasi telepon. Konsumen terakhir yakni berasal dari civitas akademika dari Universitas A yang memerlukan buah kakao glondongan yang digunakan sebagai bahan baku olahan dalam kegiatan ajar mengajar.

Aliran kas yang dilakukan dalam rantai pasok komoditas kakao di Desa Jambewangi umumnya dilakukan secara tunai dan realtime namun untuk pembelian secara reatai yakni konsumen dari Perusaan X dilakukan secara berangsur sesuai dengan Purchase Order (PO) saat itu.

5. CONCLUSIONS

1. The role of the Manggar Kencono cocoa farmer group in Jambewangi Village shows that the role of the learning class is high and the role as a vehicle for cooperation and the Production Unit is low.

2. The relationship between farmer characteristics and farmers' perceptions of the role of the Manggar Kencono farmer group obtained values of rs and sig. (2-tailed). The rs value indicates that the level of strength of the relationship between the two variables does not exist because the rs value is less than 0.79. and a significant relationship lies in the relationship between land area and farmers' perceptions.

3. The difference in income and productivity between the perceptions of cocoa farmers who have high perceptions and farmers who have low perceptions shows that there is no significant difference.

The implication that can be concluded is that the role of the Manggar Kencono farmer group in Jambewangi Village has not been optimal in carrying out its role as a vehicle for cooperation and production units if it is based on the role stated in the 2016 Minister of Agriculture Regulation Number 67/Permentan/SM.050/ 12/2016. The role of the less optimal farmer group affects the production produced by its members, because the application of cocoa cultivation and care is not optimal so that there is no significant difference between farmers who perceive high and low perceive the role of the Manggar Kencono farmer group. It could be that if the role of the Manggar Kencono farmer group has reached an optimal role either in GAP or based on the role as a learning class, the vehicle for cooperation and automatic production units in terms of cocoa cultivation and care can be optimal

and the production and income obtained by farmers who perceive high are also higher. optimal again so that the difference can be significant between farmers who perceive high and those who perceive low, because the majority of farmer group members who perceive low are farmers who are passive in the Manggar Kencono farmer group and carry out cacao cultivation in a modest manner.

6.ACKNOWLEDGEMENT

REFERENCES

[1] Afolayan, O.S. Soil-Plant Nutrient Cycling in Old Cocoa Farms in a Part of South Western Nigerian Forest Belt. Tanzania Journal of Science. 46(2): 564-572

[2] Arini, Putu Arimbawa, S. A. 2018. Peran Kelompok Tani dalam Usahatani Padi Sawah (Oryza Sativa L) di Desa Belatu Kecamatan Pondidaha Kabupaten Konawe. Jurnal Ilmiah Membangun Desa dan Pertanian, 3(1), 16–22.

[3]Arofatul, A., & Hariyati, Y. 2018. Hubungan Antara Karakteristik Petani dengan Persepsi Petani Kakao dalam Penerapan Sistem Rorak di Kecamatan Bakung Kabupaten Blitar. November, 418–427.

[4]Asigbaase, Michael., B.H Lomax., E. Dawoe., and S. Sjogersten. 2020. Influence of organic cocoa agroforestry on soil physico-chemical properties and crop yields of smallholders' cocoa farms, Ghana. Renewable Agriculture and Food Systems. 36:255-264

[5]Awudzi, G.K., R.A Acheampong., S. W Avicor., Y. Bukari., M.A.Yeboah., E.K.O Boateng., S. K. Ahadzi 2021. Farmers' knowledge and perception of cocoa insect pests and damage and the implications for pest management on cocoa in Ghana. Journal of Plant Protection Research.61(2): 145-155.

[6]Azwar., P. Muljono and T. Herawati. 2016. Perception and Participation Farmers in Rehabilitation Cacao Plants in Sigi District Province of Central Sulawesi. Penyuluhan.12(2): 157–167.

[7]Basri., Harli., R. Tamin., Indrabayu., and I.S Areni. 2021. Development of Climate and Land Requirements for Compatibility of land Cocoa Plant Specification Base on Sattelite image. The 1st International Conference on Enviromnetal Ecology of Food Security. 681(2021)

[8]Black, Emily., E. Pinnington., C. Wainwright. V. Lahive., T. Quaife., R.P Allan., P. Cook., A. Daimond., P. Hadley., P.C Mc Guire. A. Verhoef and P.L Vidale. 2021. Cocoa plant productivity in West Africa under climate change: a modelling and experimental study. Enviromental Research. 16(2021)

[9]Budiman Kabul., C.I Prihantini., Hasbiadi and Masitah. 2020. Financial Analysis of Annual Plant-Cocoa Intercropping Farming at Kolaka Regency. The 5th International Seminar on Agribusiness 2019

[10]Farida A.N and Suswadi. 2017. Relationship Between Farmers Economic Social Characteristics With Physical Adoption Technology PHT Pasca SLPHT Kakao In Jatirejo Village Girimarto District, Wonogiri Regency. Agrineca: 17(I).

[11]Fatmawati, Yulan Ismail, P. R. 2019. Analisis Komparatif Pendapatan Petani Kakao yang Menjual Biji Kering dengan Biji Basah di Desa Panca Karsa I KecamatanTaluditi Kabupaten Pohuwato. Perbal : Jurnal Pertanian Berkelanjutan, 7(3), 207–218.

[12]Fitriyah I dan Yuli Hariyati. 2020. The Excellence of Cocoa-Goat Integrated Farming in the Implementation of Zero Waste Concept. SEAS (Sustainable Environment Agricultural Science). 4(2).

[13]Gniayou, Kouadio Venance-Pâques., K.A.S. Franciaa., D.N Lucienb.,A K. K Modestec., and A.Y. C Yves. 2021. Socio-economic assessment of different cocoa agroforestry systems in the forest-Savannah transition zone in central Côte d'Ivoire. Forests, Trees And Livelihoods.

[14]Hariyati, Y. 2016. The Management Product in the Farmers Level and the Role of Supporting Institutions for Cocoa Fermentation Process. Agriculture and Agricultural Science Procedia. 9: 128–133.

[15]Hariyati, Y., Ristamaya, R. I., Yunita Rena, R., Fauziah, D., & Ibanah, I. 2020. Relational Behavior in Smallholder Cocoa Marketing Channels. E3S Web of Conferences. 142: 3–6.

[16]Impal, Benu Olfie, V. M. 2017. Peranan Kelompok Tani "Tenggang Rasa" terhadap Pengembangan Tanaman Kakao di Desa Inomunga, Kecamatan Kaidipang, Kabupaten Bolaang Mongondow Utara. Agri-Sosio Ekonomi, 13, 97–112.

[17]Leksono, A.S ., I. Mustofa., Z.P Gama., A.Afandhi and A. Zairina. 2021. Organic farming system of cocoa plantations in South Malang, Indonesia. The 11th International Conference on Global Resource Conservation. 743 (2021).

[18]Lumampa, Saediman, M. A. L. 2019. Analisis Komparatif Produksi dan Pendapatan Petani Kakao yang melakukan sambung samping dan tidak melakukan sambung samping desa Andomesinggo di Kecamatan Besulutu Kabupaten Konawe. Jurnal Ilimah Agribisnis, 4(3), 71–76.

[19]Mawarni, E., Baruwadi, M., & Bempah, I. 2017. Peran kelompok tani dalam peningkatan pendapatan petani padi sawah di desa iloheluma kecamatan tilongkabila kabupaten bone bolango. Agrinesia, 2(1), 65–73.

[20]Muhardi., A Rahim., F F Karim and A. Sulili. 2021. The use of litterfall from various land agroecosystems to increase the fertility of the land of community cocoa plantations. The 1st International Conference on Environmental Ecology of Food Security. 681 (2021)

[21]Mulyo, P. R and Y. Hariyati. 2020. Dinamika Perkembangan Perkebunan Kakao Rakyat di Indonesia. Agriekonomika. 9(1): 48–60.

[22]Nadege, M.T., S. Claude., K. B. L.P Roger., C.D Cedric., N. G. Ntsomboh., N.A.F Yonkeu., T.M Carole., T.V. Mireil dan Z. Louis. Ecological and Economic Potentials of Cocoa Agroforestry Systems in the Center Region of Cameroon. American Journal of Agriculture and Forestr. 8(5): 214-222

[23]Nugroho Sigit Sapto, M. T. 2019. Hukum untuk Petani. Penerbit Lakeisha.

[24]Parawansa, D., & Arimbawa, P. 2018. Peranan Kelompok Tani dalam Usahatani Kakao di Desa Lambandia Kecamatan Lambandia Kabupaten Kolaka Timur. Jurnal Ilmiah Membangun Desa Dan Pertanian, 3(6), 157–162.

[25]Pateda, S. Y., Hartono, B., Kuswati, & Azizah, S. 2021. the Farmer Groups Institutional Capacity Level in Improving Beef Cattle Business in Gorontalo District, Indonesia. Russian Journal of Agricultural and Socio-Economic Sciences, 109(1), 121–126.

[26]Permentan. 2016. Peraturan Menteri Pertanian Republik Indonesia Nomor 67/Permentan/Sm.050/12/2016 Tentang Pembinaan Kelembagaan Petani. 147(March), 11–40.

[27]Pradana, I. B. P. A. 2013. Peran Kelembagaan dalam Pengembangan Usaha Tani Sayuran Organik di Kelompok Tani Tranggulasri, Desa Batur, Kecamatan Getasan Kabupaten Semarang. Universitas Kristen Satya Wacana.

[28]Rahardjo, P. 2011. Menghasilkan benih dan bibit kakao Unggul. Penebar Swadaya.

[29]Saputra, Danny Dwi., R.R Sari., K. Hairiah. J.M Roshetko., D. Suprayogo., M.V. Noordwijk. 2020. Can cocoa agroforestry restore degraded soil structure following conversion from forest to agricultural use. Agroforest Syst. 94: 2261-2276.

[30]Sari, M., Saediman, H., & Limi, M. A. 2019. Analisis Perbedaan Produksi dan Pendapatan Usahatani Kakao Petani Anggota Dan Non Anggota Lem (Lembaga Ekonomi Masyarakat) Sejahtera di Kecamatan Besulutu. Jurnal Ilmiah Membangun Desa Dan Pertanian, 4(5), 128–133.

[31]Sumantri, A. 2018. Peranan Kelompok Tani dalam Usahatani Kakao di Desa Pengkendekan Kecamatan Sabbang Kabupaten Luwu Utara. Prosiding Seminar Nasional Hasil Penelitian, 04(1), 9–15.