Farmer's Motivation To Utilize Understorey-Cropping System In BKPH Purworejo Kph Kedu Selatan

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ABSTRACT

Agroforestry is a land management technique to be used together with the society in the cultivation of forestry and agricultural commodities. The land management in agroforestry is important to improve the quality and quantity of agricultural production. The motivation of farmers in implementing agroforestry is an intrinsic factor which encourage farmers internally and externally to the utilization of under-storey cropping system in BKPH Purworejo. This research aims to determine farmers' motivation in applying agroforestry-based system for agricultural commodities, the effect on utilizing under-storey cropping system at BKPH Purworejo, the factors that influence motivation in cultivating agroforestry-based agricultural commodities. The method used in this research was descriptive quantitative. The proportion test and multiple regression were used to analyze the data. The results of this research indicated that approximately less than or equal to 50% of farmers had the low motivation of farmers to cultivate agroforestry-based agricultural commodities. Factors having a positive effect on the motivation in cultivating agroforestry-based agricultural commodities are the role of agriculture-forestry extension agents and access to the marketing of agroforestry products. While the factor having a negative effect on the farmer's motivation is the obligation of farmers to cooperate with Perhutani. The motivation of farmers in using agroforestry-based system for their agricultural commodities had a positive effect on utilizing the understorey-cropping system at BKPH Purworejo, KPH Kedu Selatan.

Keywords: agroforestry, farmer, motivation, understorey-cropping system

INTRODUCTION

According to Elizabeth (2011), the growth rate of food production, especially rice which has been declining and unstable has resulted in an increase in national food dependence on imported products. The import dependency shows that Indonesia has not been able to achieve independence in food sufficiency. Dewati et al. (2018) also mentioned that the needs of consumption increased along with

the rise of population growth. Rice consumption per capita influential positive for the volume of rice imports in Indonesia, when rice consumption per capita in Indonesia increases, the volume of rice imports in Indonesia will increase (Christianto, 2013). Hermanto (2017) added that Indonesia was prosecuted to increase production capacity and industrial competitiveness, especially in national rice in the era of free trade, for example by maintaining supply and price stability rice in the domestic market. To deal with the problems in this agriculture sector, the President of the Republic of Indonesia, Joko Widodo revived (revitalized) forest management programs with the community known as the Social Forestry Program.

Social Forestry Program is a forest management activity that involves communities around or in the forest to participate in empowering existing forest resources (Sumanto, 2009). One of the benefits of this activity in the agricultural sector is the increase in the area of cultivated agricultural commodities (extensification). Extensification of agriculture is an effort to increase agricultural production by extending the land area. Efforts to extend agriculture developed through Social Forestry Program are generally known as the Agroforestry Cultivation System. The agroforestry referred to the concept of land use under-storey cropping system of forest plants for agricultural cultivation (understorey-cropping system) by forest people. In addition to obtaining biophysical benefits for nature and the environment, the concept of cultivation is also developed for economic interests through increasing the biodiversity of the agricultural forest sector.

According to Suryanto et al. (2015), agroforestry is a local wisdom of forest farmers as a form of farmers' strategy to meet their daily needs by selecting high quality tree species having high economic value. Perhutani is a large company under the Ministry of BUMN (State-Owned Enterprise) that implements agroforestry cultivation systems in Indonesia's forest management. The working area of Perhutani is dominant in Java-Madura forest area. The provision of land for the common use between the forestry sector and the agricultural sector by Perhutani can be a solution for Javanese agricultural land, which is increasingly narrowing due to function change and fragmentation. The Forest Stakeholder Unit (BKPH) of Purworejo is one of the largest forest stakeholders in the South Kedu Forest Stakeholder (KPH) region, having 9,091.67 ha of land. According to Widyati (2012), the community in one of the BKPH Purworejo forest areas did not receive much additional income from the

implementation of the agroforestry system. Aditya (2017) also stated that under-storey cropping system in a forest area in Purworejo district had not been programmed effectively. Motivation becomes power within farmers themselves which cannot be separated for the achievement of an action or behavior, in this case the use of under-storey cropping system. Harlie (2010) stated that motivation is important to improve the performance of an object, for example motivation given through guidance and training can move an object to be able to carry out work with results that are in line with expectations. Therefore, this research was conducted with the aim to identify factors that can influence the motivation of farmers in cultivating agricultural commodities using agroforestry approach to utilize land under-storey cropping systems (understore cropping system), at BKPH Purworejo, South Kedu KPH.

This research is a relatively new research in the field of agriculture, where agroforestry management in social forestry is a program that has recently been fond of being discussed as a revitalization program to address land and agricultural production problems in Indonesia. Thus, motivation in implementing this agroforestry program is important to know. Nurdina (2016) in her research stated that farmer's

motivation can be influenced by the age of the farmer, farmer income, farming experience, farmer education, farmer group activities, extension activities, and access to information. Whereas Saputri et al. (2016) states that the motivation of farmers can be influenced by the role of agricultural extension workers. Thus, it is assumed that the factors that can influence the motivation of farmers in using agroforestry for cultivating agricultural commodities are the attitude of farmers, farmers 'perceptions, formal education, length of farming, the number of family dependents, the role of agricultural-forestry extension, farmers' obligations in cooperating with Perhutani, and access marketing of agroforestry products.

The result of this research will contribute to increase awareness and motivation in the implementation of the Agroforestry Program. So that, this research can wide the insight, information, and knowledge related to the condition of agriculture-forestry in Indonesia, especially in Purworejo, Central Java.

METHODS

A quantitative-descriptive analysis was used as the primary method in this study. The study conducted in the BKPH Purworejo forest area consisting of Bruno Forest Management Resort (RPH), Kemiri RPH, Sawangan RPH,

Gebang RPH, Katerban, and Loano RPH. Purposive and simple random sampling was used as the sampling method. A map of the research area is presented in Figure 1.

BKPH Purworejo consists of 6 Forest Management Resorts (RPH) and 85 Forest Village Community Institutions (LMDH), each of which consists of 30 to 50 active members per LMDH. Sampling begins by determining the RPH sample by purposive sampling, namely the forest area at BKPH Purworejo which had implemented the Agroforestry Program, including Gebang RPH, Katerban RPH, and Sawangan RPH. After the RPH sample obtained, it was followed by the selection of the sample Village Forest Society Institution (LMDH) by purposive sampling, resulting two LMDHs for each RPH. After that, farmer samples were selected by non proportional random sampling, i.e., as many as 10 to 12 farmers per LMDH, so that the total number of samples is 62 forest farmers. The primary and secondary data were collected through observation, interview, recording, and literature study techniques. Then the data were analyzed exerting the proportion test and multiple regression test. To find out the level of motivation of farmers in agroforestry-based agriculture cultivation was done by proportion analysis.

Z stat = $\dfrac{\left(\frac{x}{n}\right) - Po}{\sqrt{\frac{Po(x - Po)}{n}}}$, was utilized as the proportion analysis formula in this study, while the significance used was 0.1. In this case, Zstat : Z test statistics, Po: proportion of population (50%), x: number of sample farmers with low motivation (refer to table 6.4), n: the total number of sample
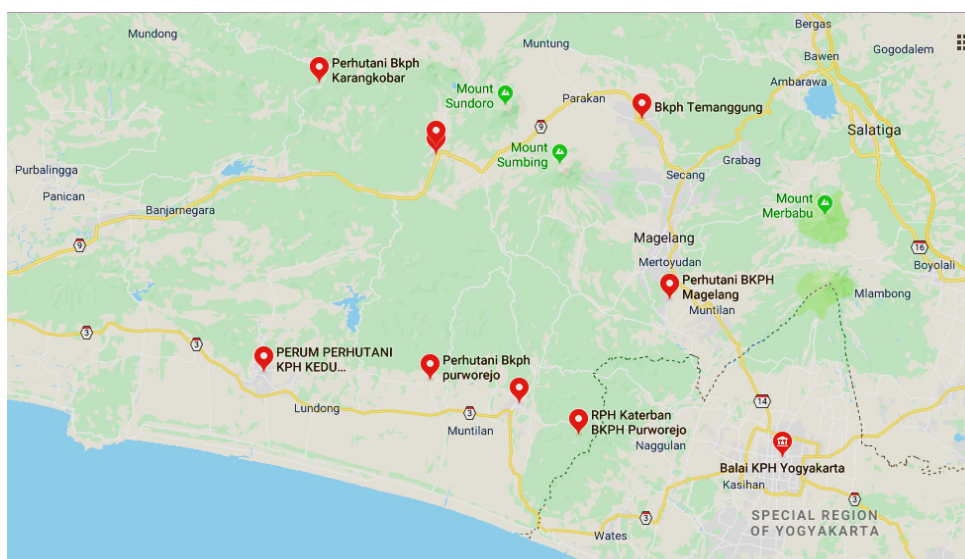

Figure 1 Map of The Research Area (BKPH Purworejo, South Kedu KPH)

farmers. The hypothesis used is H0: P $\leq$ 50% and Ha: P> 50%, H0: Allegedly less than or equal to 50% of farmers have low motivation in the cultivation of agroforestry-based agricultural commodities for under-standing land use in BKPH Purworejo, KPH South Kedu, while Ha: It is suspected that more than 50% of farmers have low motivation in the cultivation of agroforestry-based agricultural commodities for the utilization of under-standing land in BKPH Purworejo, KPH South Kedu. Meanwhile, to find out the factors affecting the motivation of farmers, and also to find out the influence of farmers' motivation to utilize under-storey cropping system in BKPH Purworejo was measured by regression analysis. The regression test used to determine the factors that influence motivation was a multiple linear regression test, by the following equation : $Y=X_1+X_2+...X_n$, Y = farmer's motivation, while X_1, $X_2,...X_n$ are factors that influence the motivation of farmers. X_1 is the attitude of farmers towards agroforestry-based agricultural cultivation, X_2 is farmer's perception of agroforestry-based agricultural cultivation, X_3 is formal education, X_4 is duration of farming, X_5 is number of family dependents, X_6 is role of agriculture-forestry extension, X_7 is obligation of farmers to Perhutani, and X_8 is marketing access of agroforestry products. To discover the influence of farmers' motivation in utilizing under-storey cropping system was conducted by simple regression analysis, by the following equation : $Y = X$, Y is the utilize under-storey cropping system, while is farmer's motivation. The significance X used was 0.1.

RESULTS AND DISCUSSION

Cultivation of Agricultural Commodities Based on Agroforestry at BKPH Purworejo

Senoaji (2012) stated that agroforestry is a land management system which is a combination of agricultural production (including fruits and livestock) with forestry plants. Agroforestry is a substantial alternative, given the increasingly narrow of agricultural land of Indonesia. The shift in the function of agricultural land, especially those that are technically and semi-technically irrigated into non-agricultural land, is an effort to waste government investment because it has not financially even from the investment made. The benefits obtained from these activities are increased food production, farmer income, employment opportunities, and the nutritional quality of the community (Mayrowani and Ashari, 2011). In addition (Yustha, 2017) added that agroforestry which is widely applied to the plots of land in Java is to

permanently combine annual and annual food crops with forestry plants.

In this study, the analysis related to the land use under-storey cropping system divided into five categories; very not-optimal (0-20)%, not optimal (21-40)%, sufficient (41-60)%, optimal (61-80)%, and very optimal (81-100)%. The understorey land use for agroforestry farming at BKPH Purworejo is not optimal, indicated by the average percentage of land use under-storey cropping system as a whole was 35.73%. This result follows the research conducted by Widyati (2012) and Aditya's research (2017), stating that understorey agroforestry land use in Purworejo is not optimal. Widyati (2012) in her research stated that one of the villages in the BKPH Purworejo area, namely Donorejo Village, Kaligesing District, Purworejo District, Central Java, planted food and animal feed (agrosilvopastura), such as pipel corn, *wose* peanuts, cassava, ginger, and *kaliandra*. However, the use of understorey forest for agroforestry-based cultivation does not contribute to community income. In another study, Aditya (2017) mentioned that the use of vacant land under-storey cropping system, especially in Patutrejo Village, Grabag Subdistrict, Purworejo District, Central Java had not been well programmed, where leader support

had diminished, there was no ongoing training, and there was no sharing fund for Nyamplung Plants.

Agroforestry Practises and Characteristics of Forest Farmers

According to Junaidi (2013), agroforestry is an alternative land use that combines perennials (trees or shrubs) with or without annual crops and livestock in one plot of land. The diversity of plants causes agroforestry to have a role and function that is closer to forest cover than agriculture, plantations, and vacant land. Suryani and Dariah (2012) mentioned the types of plants that are generally grown in agroforestry systems are tree species and annual crops. Tree species that have high economic value, such as coconut, rubber, cloves, coffee, cocoa, teak, and mahogany; tree species that have low economic value but are very important for the environment, such as dadap, lamtoro and kaliandra. While annual crops are rice, corn, peanuts, cassava, animal feed, and others.

In general, farming applied to Perhutani's land was bound in a Cooperation Agreement (PKS). Forestry plants which were widely cultivated in BKPH Purworejo were Pine and Damar. The plants were the main crop in the BKPH Purworejo forest area whose productivity was a priority for Perhutani. While agricultural crops that were cultivated using agroforestry in

this forest area were calliandra, cleride, rubber, coffee, pineapple, snake fruit, corn, guava, and cardamom. Each forest area in BKPH Purworejo planted agricultural commodities which tended to be different, yields and management from pre-planting to post-harvest for each region were different from one another. The Forest Management Resort Area (RPH) was quite prominent in the implementation of agroforestry-based cultivation activities in BKPH Purworejo in the Sawangan RPH, particularly in Pamriyan Village. The most widely developed agricultural commodities in the region were rubber and coffee.

Characteristics of farmers investigated were traits, features, or all information about an things, such as gender, religion, age, class, rank, salary, and others. Characteristics of forest farmers were the variables or factors that were related or around forest farmers. Data on forest farmer characteristics are presented in Table 1.

Table 1 shows that the average age of farmers is in the productive category, which is in the range (14-64) years. However, the age of farmers who carry out agroforestry cultivation was generally in the range of (40-50) years, so the role of the younger generation is essential to be improved. Generally, farmers in the BKPH Purworejo area are elementary school graduates and have experience or carry out farming around (11-20) years. The average farmer in the area has 3-5 family members so that the burden on farmers in meeting family needs is still relatively moderate.

The attitude of farmers towards the cultivation of agroforestry-based

Table 1. Characteristics of forest farmers at BKPH Purworejo.

Forest Farmers' Characteristics	Forest Farmers' Condition
Farmers' Age	Productive
Formal Education	Elementary School
Duration of Farming	1-20 Years
Number of Family Dependents	3-5 people
Farmers' Attitudes towards Cultivating Agricultural Commodities Based on Agroforestry	Support agroforestry
Farmers' Perception of Cultivation of Agricultural Commodities Based on Agroforestry	Cultivation hard to undertake
Farmers' Motivation in Cultivating Agricultural Commodities Based on Agroforestry	High
Role of Agricultural-Forestry Extension	Very Low
Obligation of Farmers to Perhutani	Moderate
Access to the Marketing of Agroforestry Products	Difficult
Land utilization Under-storey Cropping System	Not Optimal

Source: Primary Data Analysis (2019).

agricultural commodities supported by Perhutani was supportive, although farmers' interpretations or perceptions of agroforestry cultivation were difficult, especially in access to capital. The motivation of farmers in applying agroforestry-based for their agricultural commodities was also high, although the role of agricultural-forestry extension agents was classified as very low. Farmers consider that the obligation that farmers must obey according to Perhutani, such as forest management and forest management policies were classified as moderate, not burdensome, but also not considered easy. Forest location was quite steep and had inadequate facilities, and infrastructure makes farmers perceived that the marketing of agroforestry products in the BKPH area of Purworejo was difficult.

The Motivation of Farmers in Cultivating Agricultural Commodities Based on Agroforestry

The motivation in applying under-storey agricultural cultivation comes from the strength or encouragement of farmers to carry out agricultural commodity cultivation by combining forest-based and agroforestry-based concepts for land use of under-storey cropping system. This research was conducted at BKPH Purworejo, South Kedu KPH. In this study, the motivation of farmers classified into three aspects, namely existence, relatedness, and growth. Data from the analysis of farmers' motivation in cultivating agroforestry-based agricultural commodities are presented in Table 2.

In this study, the measurement of farmers' motivation in implementing agroforestry-based for their agricultural commodity cultivation in BKPH Purworejo is divided into three aspects according to the ERG Theory. From the results of this study, the motivation of farmers to meet physiological needs with agroforestry cultivation was high (71,58%). It is because farmers perceived that agroforestry is important to do since the physiological needs are the main needs that must be fulfilled in order to continue living, for example to improve food sufficiency or income to meet daily food needs. However, agroforestry was not the only income source of farmers, because agroforestry was a side job that was generally cultivated by the people in BKPH Purworejo. The motivation of farmers to connect or interact with other parties by carrying out cultivation in agroforestry was high even though interaction in conducting cultivation was not a priority or goal of farmers, but it was still important for farmers. While the motivation of farmers to increase productivity and preservation of forests was also relatively high.

Table 2. Farmer Motivation in Cultivating Agricultural Commodities Based on Agroforestry

Indicator	Score Interval	Average of Score Achievement	Motivation Level
Existence			
To fulfil the food needs	0-3	1.72	57.33
To fulfill the clothing needs	0-3	2.00	66.66
To fulfill the housing needs	0-5	3.87	77.40
To fulfill the education needs	0-3	1.69	56.33
To access the health facilities	0-4	1.91	47.75
Total (A)	0-18	11.19	
Average (A)			61.09
Relatedness			
To have a good friend in a group	0-5	3.67	73.40
To have a good relationship with Perhutani	0-5	3.77	75.40
To have a good relations with goverment institutions or agencies	0-5	4.08	81.60
Total (B)	0-15	11.52	
Average (B)			76.80
Growth			
To increase forest productivity	0-6	4.16	69.33
To improve forest sustainability	0-5	4.22	84.40
Total (C)	11	8.38	
Average (C)			76.86
Total (A+B+C)	0-44	31.09	
Average (A+B+C)			71.58

Source: Primary Data Analysis (2019).

Based on proportion test, less than 50% of farmers had low motivation in understorey cropping system to utilize under-storey cropping system at BKPH Purworejo, South Kedu KPH. This result shows that the proposed hypothesis is rejected because most farmers have high motivation in cultivating agroforestry-based agricultural commodities. Test proportion obtained is as follows:

Based on the table, the following calculation is obtained :

Table 3. Distribution of motivation of farmers in the cultivation of agroforestry-based agricultural commodities

Category	Total	Percentage (%)
Low (0-22)	1	1.61
High (23-44)	61	98.38
Total (A)	62	100.00

Source: Primary Data Analysis (2019).

Z stat : -7.936

Z table : 1.645

Z stat < Z table, so H0 is accepted and Ha is rejected

Factors Affecting Farmers' Motivation in Cultivating Agricultural Commodities Based on Agroforestry

Motivation is someone's drive to carry out a particular activity or subject. According to Mulyono (2013), motivation is a drive or conscious effort to influence a person's behavior to be moved to do something so as to achieve results or goals. Motivation in cultivating agroforestry-based agricultural commodities is the encouragement, support, or enthusiasm of farmers in carrying out cultivation of agroforestry-based agricultural commodities at BKPH Purworejo.

The motivation of farmers in cultivating agroforestry-based agricultural commodities was influenced by various factors, both intrinsic and extrinsic. In this study, the factors suspected of influencing farmers' motivation in applying agroforestry-based for their agricultural commodities included intrinsic factors, namely the attitude of farmers in implementing agroforestry-based for agricultural commodities, farmer perceptions of agroforestry-based

Table 4. Factors Affecting Farmers' Motivation in Cultivating Agricultural Commodities at BKPH Purworejo

Variables	Expected sign	Coefficient	t stat.	Sig.	Info.
The attitude of farmers towards agroforestry-based agricultural cultivation (X1)	+	0.060	0.686	0.495	NS
Farmer's perception of agroforestry-based agricultural cultivation (X2)	+	0.006	0.024	0.981	NS
Formal Education (X3)	+	0.188	0.626	0.534	NS
Duration of Farming (X4)	+	-0.014	-0.278	0.782	NS
Number of Family Dependents (X5)	+	0.228	0.494	0.623	NS
Role of Agriculture-Forestry Extension (X6)	+	0.303	2.891	0.006	*
Obligation of Farmers to Perhutani (X7)	-	-0.550	-2.603	0.012	*
Marketing Access of Agroforestry Products (X8)	+	0.215	1.819	0.075	**
Constant					28.140
R Square					0.386
Adjusted R Square					0.293
F-calc.					4.165
t-table					1.29558

Information:* Significant at level 5%; **Significant at level 10%
NS : *Not Significant*

Source: Primary Data Analysis (2019).

agricultural crops cultivation, formal education of farmers, long-term farming, and number of dependents of farmer families; and extrinsic factors, namely the role of agricultural-forestry extension agents, the obligation of farmers to cooperate with Perhutani, and access to marketing of agroforestry products. Table 3 shows the regression result of factors influenced farmers' motivation.

Table 4 shows that the factors having possitive influence to farmers' motivation in cultivating agricultural commodities at BKPH Purworejo were the role of agriculture-forestry extension agents and the marketing access of agroforestry products. The factors having negative influence to farmers' motivation was the obligation of farmers to cooperate with Perhutani. Whereas the factors that did not influence the motivation of farmers in agroforestry-based agricultural commodities cultivation were the attitude of farmers towards the cultivation of agroforestry-based agricultural commodities, farmers' perceptions of agroforestry-based agricultural commodities, formal education, time period of farming, and the number of family dependents.

a. Role of Agriculture-Forestry Extension

Agriculture-forestry extension agents were civil servants, private

sector and self-help instructors who controled agriculture and forestry and cultivate using agroforestry-based for agricultural commodities. The role of the instructor could be in the form of motivators, facilitators, and consultants. Based on Table 4, it can be seen that the role of the forestry agriculture instructor had a significance of 0.006. The role of agricultural-extension instructors had a significant effect on the motivation of farmers. Thus, the high or low role of agriculture-forestry extension agents influences the high or low motivation of farmers in agroforestry-based agricultural cultivation at BKPH Purworejo, South Kedu KPH. The results of these studies are in accordance with the research of Saputri et al. (2016) stating that extension activities can be useful for improving farmers' abilities in farming, marketing, managing cooperation, and learning. With improved capabilities, extension agents should be able to increase the motivation of farmers in carrying out their activities.

b. Obligations of Farmers in Collaborating with Perhutani

Table 4 shows that the significance of the obligation of farmers to cooperate with Perhutani in agroforestry-based agricultural cultivation was 0.012. The significance value was smaller than the significance level of 0.1, meaning that the obligation of farmers to cooperate

with Perhutani influences farmers' motivation in cultivating agroforestry-based agricultural commodities. This shows that the high or low obligations that farmers have to present to Perhutani while carrying out cooperation agreements in forest management affect the stage of motivation of farmers for agroforestry implementation using under-storey cropping system at BKPH Purworejo.

The regression coefficients obtained was negative. Thus, the higher the obligations or responsibilities of farmers in cooperating with Perhutani, the lower the motivation of farmers in cultivating agricultural commodities using agroforestry-based at BKPH Purworejo. Obligations that must be carried out by farmers as a form of agreement with Perhutani include the application of agroforestry production sharing systems, caring for Perhutani's forestry plants, regulations/restrictions on the types of agricultural crops that can be planted under forestry plants, pruning high agricultural plants and shade so as not to disturb crops forestry, limitation of the area of land that can be planted under forestry plants, and adjusting the density of planting distance of forestry plants.

c.   Access to Agroforestry Product Marketing

Access to the marketing of agroforestry products is the affordability of product marketing resulting from agroforestry farming culture at BKPH Purworejo. Affordability of marketing includes affordability of market locations, the suitability of market prices, affordability of buyers or consumers, and affordability of traders/distributors/wholesalers of agroforestry products. Based on Table 4, it can be seen that marketing access to agroforestry products had a significance of 0.075. The significance value is smaller than the significance level, which is 0.1, and it means that the proposed hypothesis is accepted. Access to the marketing of agroforestry products has a significant effect on the motivation of farmers in cultivating agroforestry-based agricultural commodities. Thus, the difficult or easy marketing of agroforestry products affects the high or low motivation of farmers in agroforestry-based agricultural cultivation at BKPH Purworejo, South Kedu KPH. The easier or more affordable access to marketing agroforestry products, the higher the motivation of farmers in cultivating agroforestry-based agricultural commodities at BKPH Purworejo.

The conditions of access to marketing agroforestry products in BKPH Purworejo are quite difficult. According to farmers, the difficulty of marketing access is due to the quite remote market

location for some agroforestry products. Not all agroforestry products were sold, and the availability of buyers and markets for some agroforestry products was very low.

The Influence of Farmers' Motivation in Cultivating Agricultural Commodities Based on Agroforestry towards Land Utilization Under-storey Cropping System at BKPH Purworejo

The land utilization under-storey cropping system was an alternative in accessing forest land use by communities around the forest as the goal of Collaborative Community Forest Management (PHBM). Land utilization suing under-storey cropping system was included in the concept of agroforestry, which is sought to develop the ecological functions of forests, increase forest productivity and reduce damage to land and forests (Mustofa, 2011).

Based on Table 5, the motivation of farmers had a positive effect on land use within under-storey cropping system at BKPH Purworejo. The high motivation of farmers in cultivating agroforestry-based agricultural commodities can be an opportunity for various parties to increase land use under-storey cropping system in the BKPH Purworejo region. Improvement or efforts to optimize agroforestry land use should be easier with the high motivation of farmers. Increasing the knowledge and skills of farmers in the cultivation of agroforestry-based agricultural commodities can be done so that farmers can carry out agroforestry cultivation correctly and adequately. Thus, the role of agriculture-forestry extension agents, policy review related to the obligations of farmers in collaborating with Perhutani, and the provision of access to marketing for agroforestry products are essential

Table 5. The Effect of Motivation of Farmers in Cultivating Agricultural Commodities Based on Agroforestry on Land Utilization Under-storey Cropping System at BKPH Purworejo

Variables	Regression Constant (B)	t calc.	Sig.	Info.
Motivation (X)	0.174	2.047	0.045	*
Constant				3.719
R Square				0.065
Adjusted R Square				0.050
F-calc.				4.188
t-table				1,29558

Information:*Significance level (α) is 10%
 NS : *Not Significant*
Source: Primary Data Analysis (2019).

to consider to optimize the utilization of under-storey cropping system for agroforestry cultivation.

CONCLUSION AND SUGGESTION

Based on the research it can be concluded that most forest farmers have high motivation in cultivating agricultural commodities based on understorey cropping system. The activity of agricultural-forestry extension is still low in assisting farmers, but forest farmers state that motivation will increase if counseling assistance increased. In the other hand, access to marketing agricultural products based on agroforestry systems is still difficult. The availability of access to the marketing of agricultural products increases the motivation of farmers to cultivate agricultural commodities based on understorey cropping system. However, the obligation of farmers to cooperate with Perhutani is indicated by the existence of profit-sharing from the understorey cropping system. The required profit sharing does not burden the farmers, but if the profit shared to Perhutani is lower, the motivation of farmers will be higher. Also, land utilization under forest stands or under-storey cropping system is still not optimal, but the motivation of farmers in under-storey cropping system has a positive effect on the land utilization under forest stands at BKPH Purworejo, South Kedu KPH.

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