

THE VALUE OF LAND RENT ON THE CONVERSION OF COFFEE LAND INTO CITRUS FARMING LAND

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Abstract

Land is an important natural resource because land management functions to produce a valuable product and the land itself has economic value. One way to determine the value of factors of production originating from nature such as land is to use the concept of land rent. Rejang Lebong Regency is an area of citrus plantation development. the interest of farmers to plant oranges is quite high but limited land causes farmers to convert coffee fields into citrus fields. the purpose of this study was to determine the value of land rent from coffee and citrus fields on conversion land. The study was conducted in August - December 2019 in Pal VII Village, Bermani Uluraya District, Rejang Lebong Regency. census data was collected on 40 farmers. The respondent's criteria are to have a citrus crop that is already producing on the conversion land. Data were analyzed based on von Thunens theory, namely land rent based on the market approach. The results showed that the value of land rent of citrus plants is greater than the value of land rent of coffee plants.

Keywords: Coffee; Citrus; Land Rent; Conversion;

INTRODUCTION

Land is an important natural resource because land management serves to produce a product that is valuable and the land itself has economic value. According to Barlowe (1978) the economic value of land can be divided into two, first is a land rent (contract rent) as payment from the lessee to the owner where the owner makes a lease contract in a certain time. Secondly business profit or economic rent or land rent which is a surplus of income above the cost of goods produced or the price of land inputs that allows land production factors to be utilized in the production process. Ricardo's classical theory explains land rent as a factor of production, an economic surplus is obtained because there is an investment in land but a surplus can also be obtained without doing anything because the land itself already has economic value. As a resource and producer factor, land must be managed by meeting the rules of an efficient, fair, and sustainable manner (Osmet. 2018)

Citrus cultivation is an effort towards commercial agriculture. Oranges are favored by all walks of life; the high demand makes prices that promise good profits in farming become the background of this commodity in great demand by farmers. Bengkulu started developing citrus plants since 2014 in Lebong and Rejang Lebong Districts. A commonly grown orange is an RGL orange. RGL orange is the result of the crossing of sweet oranges (*Citrus sinensis* Osbeck) and tangerines (*Citrus reticulata* Blanco).

Bengkulu is the third largest coffee producing province in Indonesia after Lampung and South Sumatra so it is known as golden triangle coffee. Bengkulu accounts for about 70% of the total Robusta coffee production in Indonesia. There are 62,066 farmers who make this commodity a business with an area of 90,704 hectares and agricultural production of 1,489.46 tons with production centers in Kepahiang and Rejang Lebong. (BDA, 2019)

Coffee is a plant that has been known for a long time and consumed by the public also has many benefits, although it should be noted that the amount of caffeine is not more than 300 mg or equivalent to approximately 3 cup of coffee per day (Sukrisno, et al. 2007). Coffee in

Indonesia generally grows well at altitudes above 700 m above sea level (asl) but in its development many superior clones can be planted 500 meters above sea level with rainfall should be 1500-2500 mm per year (Puslitkoca, 2010). Two types of coffee developed in Bengkulu are robusta coffee (*Coffea canephora*) and arabica coffee (*Coffee arabica* var *Typica*).

Coffee farming has been carried out by farmers for generations. However, coffee is considered not to be a welfare for farmers. Since 2014 the citrus crop has been grown by several farmers. The success of orange farmers made other farmers start growing oranges. Limited land ownership makes farmers change land from coffee plants to citrus crops. According to Barlowe (1978) the economic value of land can be divided into two, namely: 1) land rent or contract rent as payment from the lessee to the owner where the owner makes a lease contract within a certain time. 2) Business profit or economic rent or land rent which is a surplus of income above the cost of goods produced or the price of land inputs that allows land production factors to be utilized in the production process. The purpose of this study is to determine the rental value of coffee and citrus crop land on conversion land.

RESEARCH METHOD

Location and Time Research

This research was conducted in Pal VII, Bermani Ulu Raya District, Rejang Lebong Regency and was carried out in the period of August – December 2019. The location determination was carried out intentionally (purposively) with the consideration that Bermani Ulu Raya District is the widest, the area of development of RGL oranges (240 ha).

Data Source Type

Sample Determination Method is the object of this study is farmers who process coffee into oranges and citrus plants that are already producing. Sampling was carried out by census of all coffee-orange conversion farmers in Pal VII, Bermani Ulu Raya Regency as many as 40 people. The data used are primary data and secondary data. Primary data are data obtained from the first source either from individuals or individuals such as the results of interviews or questionnaires that are usually carried out by researchers. The primary data in this study are data obtained from census results. In addition to primary data, secondary data is also collected from official / agency reports, statistical reports and literature related to research topics.

Data Analysis Methods

Cost and Income Performance of Coffee and Citrus Farms

The costs and income of farming business calculated in this study are cost incurred in the 3rd and 4th years, according to the age of the citrus crop owned by the farmer. The data collected in this study are production input costs for one soybean growing season (IDR/Ha), coffee or orange output (Kg/Ha), and farm business revenue (IDR/Ha). Revenue is the amount of gross revenue (Total Revenue or TR) obtained from the multiplication between the total amount of products produced (Quantity or Q) and the price of the product union (Price or Pq) (Gupito et.al., 2014). The equation is as follows: $TR = Q \times Pq$

Land Rental Value

Von Thunens' theory is a classical rental theory in which rent is determined by the demand for agricultural products in the urban market and the distance of each piece of land from the market, so that economic rents will decrease linearly with increasing distance from the market and will be determined by the yield per hectare multiplied by the market price minus the cost of production and transportation for each crop. The interaction between these factors

in different locations and for different crops led to a continuous decrease of market rents and spatial allocation of land for some plants. The land use system around the market is characterized by an abnormal lack of profit due to competition and by land use patterns in which the activity generates lease catches the highest and, in each location, this can be described by the following equation (Kellerman, 1978).

$$Row = Egg(Pi - ai) - Eifikj$$

Description:

- R = Economic rent
- E = Product yield (Kg/Ha)
- P = Market price per product unit (IDR/Kg)
- a = Production cost per unit of product (IDR)
- f = Transportation cost of per unit distance per unit products
- kj = Distance from point I to market (Km)

RESULTS AND DISCUSSION

Coffee And Citrus Farming Costs

The results of a survey of 40 respondents whose citrus plants are already producing (plant age 3-5 years) show that the average production of citrus farmers is 43.93 kg / stem / year. This number is almost the same as the results of Dinata and Rambe (2018) in Rimbo Pengadang Village, Lebong Regency, Bengkulu, where the average citrus crop production produced by RGL is 38 kg / trunk / tree. Its productivity is still relatively low compared to its production which can reach 92-214 kg / stem / year according to Permentan 2280/2012 concerning Giving Horticultural Varietals for RGL citrus varieties.

Productivity variations imply that the application of technology at the farmer level is still very diverse. In the study area 7 out of 40 respondent farmers whose citrus crops reached production of 100 kg / stem/ year or when presented only reached 17.5% of the total number of respondents. Another 82.5% of citrus growers are only able to enjoy orange production of <50 kg/stem/year. This information illustrates that in general the application of RGL citrus cultivation technology in Pal VII is allegedly not in accordance with the recommendations. Technology has always been a key factor in increasing crop productivity.

The greatest costs incurred during the production process are labor costs on Table 1, In line with the results of Aluhariandu's research (2016) that labor is the main influence on the revenue of citrus farmers and the largest expenditure is also on labor costs .

Table 1. Cost and Revenue Performance of Coffee and Citrus Crops

No	Description	Coffe	Orange
1	Cost (IDR/Ha)		
	Fertilizer	0	6.038.491
	Pesticides	1.200.000	5.705.299
	Labor	9.324.000	11.898.815
	Tool depreciation	98.000	128.654
	Fuel	0	345.645
2	Total Cost (IDR/ Ha)	10.622.759	24.868.129
3	Production (Kg / Ha)	1.523	8.592
4	Price (IDR / Kg)	14.000	10.000
5	Acceptance (IDR / Ha)	21.322.000	80.592.000
6	Revenue (IDR / Ha)	7.805.846	61.056.026

Source: Primary Data processed 2020

The income of farmers is influenced by the costs incurred and the price of production. Lumintang (2013) in addition, farm income will affect the welfare of farmers in an area. Beckman and Schimmelpfennig (2015) explained that the price of agricultural commodities

will influence decisions in farming and will affect the welfare of farmers in an area. Farmers must be able to utilize the resources they have efficiently to get a better income.

Land Rent Value

The value of land rent in this study was calculated using the Von Thunen theory approach where the value of land rent is also determined by distance from the market. Land rent values for coffee and citrus land can be seen in Table 5.4. Where there is a considerable difference in the value of land if planted with coffee commodities worth IDR 1,162,769 per hectare compared to citrus crops of IDR 24,188,642 per hectare. The costs that farmers incur to get results in one year of the production season also look different. Farmers must spend 57.28% more than farming coffee on the same land.

Table 2. Land rent value on orange coffee conversion land in Pal 7

No	Description	Value	
		Coffe	Orange
1	Production Yield (Kg / Ha)	1.523	8.592
2	Price (IDR)	14.000	10.000
3	Production Cost (IDR/ Ha)	10.622.759	24.868.129
4	Transportation fee (IDR / Kg)	202	199
5	Revenue (IDR/Ha)	7.805.846	61.056.026
6	Distance To market (Km)	22	22
7	Land Rent Value (IDR / Ha)	1.162.769	24.188.642

Source: Primary Data processed 2020

Coffee production in Pal 7 is in accordance with the potential for coffee production of at least 1,500 kg/ha (Erdiansyah and Yusianto, 2012) and above the national average productivity of 778.75 kg / ha (BPS, 2019). But at a price of the farmer's income of 14,000 per kilogram from coffee is still unsatisfactory. Whether or not the results of farming are good is largely determined by the application of cultivation technology in coffee cultivation research areas that do not apply the right cultivation technology. Fertilization on coffee plants is still not widely done by farmers. Fertilization carried out by a small number of farmers is carried out with improper dosage, fertilization time, and fertilization methods. The fertilization dose used by farmers is adjusted to the farmer's financial condition, while the fertilization time is only carried out once a year with a frequency that is rarely done. The fertilization method carried out by farmers is to spread fertilizer around the plant without making holes around the plant so that the fertilizer can evaporate or carried away by water.

The quality of folk coffee beans is also relatively low, which affects the market price of coffee itself. The quality of people's coffee beans is still relatively low because in general farmers have not done red picking and inadequate processing facilities. The results of the research of Rosmanah et al (2019) postharvest handling of coffee plants in Bengkulu are still far from 71.05% of farmers who should have picked all new 28.95% of farmers who have harvested picking red. New fruit sorting is carried out by farmers as much as 34.21% of while the remaining 65.79% of farmers have not done fruit sorting, because the harvest of all picks. The most widely carried out coffee processing by farmers is dry processing (84.21%) by drying in the ground using a tarpaulin. Before drying, farmers usually save more than 12 hours of coffee (84.21%). Storage carried out by farmers is usually carried out until the harvest is complete.

Dissimilar the case with citrus crops, farmers' enthusiasm for increasing income makes farmers seem to be serious about implementing various technologies that begin with growing certified superior orange seedlings. The results of citrus production at the study site are still not optimal. The average farmer produces 8,592 Kg/Ha from a potential of 15,000 kg/ha. The characteristics of citrus plants are not as similar as coffee plants, so farmers who dare to turn

coffee plants into citrus plants must make many changes in attitude or culture of maintenance plants. Coffee plants are often referred to as forest plants because without intensive care they will produce and are relatively more resistant to pest disease attacks.

CONCLUSION

The cost of citrus farming is greater than the cost of coffee farming. Meanwhile, the income from the citrus farming business is greater than the coffee farming business. Land Rental Value of citrus plants is more than coffee plants where there is a considerable difference between the value of land if planted with coffee commodities worth IDR. 1,162,769 per hectare compared to with citrus crops IDR. 24,188,642 per hectare (1: 20.8)

REFERENCES

- Aluhariandu Efrain V, Tariningsi Dian and Lestari Kartika FP. 2016. Analysis of Siamese Citrus Farming And \pm Factors That Affect Farmer Revenue (Case Study in Bayung Gede Village, Kintamani District, Bangli Regency). *AGRIPAPA Journal: A Journal of Ecosystem-Based Agriculture*. Volume 6 No 7. Page: 77-86
- Barlowe R. 1978. *Land And Resource Economy*. 3rd Edition. Prentice Hall Inc. New Jersey
- Beckman J and D Schimmelpfenig. 2015. Determinants of farm income. *Journal Emerald Insight*. Volume 73. Number. 3. Page: 385-402
- BPS.2017. *Bengkulu In Numbers*. Central Statistics Agency of Bengkulu Province.
- Dinata K and Rambe S S. 2018. Identification and Status of Major Pest Attacks on Rgl Citrus Plantations in Lebong Regency. *Proceedings of the BPTP Bengkulu National Seminar*. Pages 97-114
- Erdiansyah, N.P. and Yusianto. 2012. Relationship of light intensity in the garden with the profile and taste and caffeine levels of some Robusta clones. *Journal of Coffee and Cocoa Research*. Vol. 28.1: 14-22.
- Hasan T A. 2015. Economic Analysis of Factors Affecting the Farmer Income Under Traditional Farming System in South Darfur State – Sudan. *Journal of Agricultural Science and Engineering*. Volume 1. Number 3. Page: 114-119
- Gupito RW, Irham, Lestari, Rahayu Waluyati. 2014. Analysis of Factors That Affect Sorghum Farming Income in Gunung Kidul Regency. *Journal of Agroecomics*. Volume 24. No. 1. Pages 66-75
- Osmet. 2018. Strengthening and Protecting Farmers' Access to Agricultural Land: Formal Institutionalization of Agricultural Land in Indonesia. *Proceedings of the National Seminar Vol 2, No. 1*. Pages 137-144
- Rosmanah, S Yuliasari, E Fauzi, H Artanti, H Suyanto, T Hidayat. 2019. Study of Coffee Cultivation and Post-Harvest Technology to Increase Coffee Productivity and Quality in Bengkulu Province. Final Report. BPTP Balitbangtan Bengkulu
- Sukrisno, Widyotomo and Sri Mulato. 2007. Caffeine: An Important Compound in Coffee Beans. *Warta Indonesian Coffee and Cocoa Research Center*. Volume 23. No.1. Pages 44-50.
- Puslitkoca. 2010. *Coffee Cultivation and Post-Harvest*. Center for Research and Development of Balitbangtan Plantations, Ministry of Agriculture.
- Kellerman A. 1978. Determinants Of Rent from Agriculture Land Around metropolitan Areas. *Journal Geographical Analysis*. Volume 10. Nomor 1. Halaman 1-12
- Lumintang FM. 2013. Analysis of Rice Farmers' Employment in Teep Village, East Langowan District. *EMBA Journal*. Volume .1 Number.3. Pages :991-998.