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Income Analysis of Cocoa Farming in Punduh Pidada District, Pesawaran Regency

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ABSTRACT

This study aims to analyze cocoa farming income and post-harvest processing in post-harvest processing in Punduh Pidada Sub-district, Pesawaran Regency. This research uses survey method by conducting interviews to 53 sample farmers in 2 villages, namely 29 farmers in Baturaja Village and 24 farmers in Banding Agung Village. 24 farmers in Banding Agung Village. Sample determination was carried out with a simple random sampling technique. technique (simple random sampling) and data collection using a questionnaire. Data collection was conducted in February to March 2023. This research data was analyzed by using income analysis according to Soekartawi. Results fresh cocoa farming income obtained by farmers in Punduh Pidada Subdistrict of Pesawaran Regency is IDR23.992.537,37/ha/year. Whereas cocoa farming income with drying (post-harvest management) is 1, 2, 3, and 4 days drying respectively amounted to IDR40,949,018.88/ha/year, IDR38,870,452/ha/year, IDR29,485,659.01/ha/year, and IDR16,345,331.58/ha/year. R/C has a result of more than 1, meaning that cocoa farming is profitable and feasible to cultivate.

Keywords: cocoa, drying, farming income, pesawaran

INTRODUCTION

Cocoa is one of the crops that has high economic value, so it is not uncommon for this commodity to become a plantation commodity that is widely cultivated by farmers. Cocoa is also one of Indonesia's export commodities. However, there was a decrease in cocoa exports in 2021 (from 1,244.20 million US$ to 1,206.80 million US$), due to a decrease in production. The cause of the decline in production includes low crop productivity, which is only 0.8 tons/ha (Khairunnisa & Aisyah, 2021).

Lampung Province is the fifth largest cocoa producer, contributing 8% (57,511 tons) of the 720.66 thousand tons of national cocoa production (BPS Provinsi Lampung, 2021). One of the cocoa production center districts in Lampung Province is Pesawaran Regency, with a total production of 28,456 tons in 2021 (BPS Provinsi Lampung, 2021). Cocoa commodity is a superior commodity that is widely cultivated in Pesawaran Regency and most of the farmers in Pesawaran Regency are cocoa farmers, one of them is a farmer in Punduh Pidada District.

The land area and production of cocoa plants in Punduh Pidada Subdistrict ranks fifth largest in Pesawaran Regency with cocoa production of 2,634.00 tons with a land area of 2,291 ha. There are several cocoa-producing villages in Punduh Pidada Sub-district, two of which are Baturaja Village and Banding Agung Village. Baturaja Village ranks third largest after Bawang Village and Sukajaya Pidada Village, with a

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production of 305.04 tons, while Banding Agung Village ranks tenth, with a production of 112.7 tons. Cocoa farming in Baturaja Village and Banding Agung Village is the main source of income for cocoa farmers. Many people engage in cocoa farming because it is considered profitable and feasible to cultivate.

The main obstacle faced in agricultural development in Baturaja Village and Banding Agung Village, which are mostly smallholder farmers, is the tendency of cocoa farmers in Baturaja Village and Banding Agung Village to sell cocoa beans when they are not fully dried. The majority of drying done by farmers is one to two days, some even only one day. If it is deemed suitable for sale, the farmer will sell it to a collective trader who comes to him. However, there are also some farmers who sell their cocoa beans after they are completely dry so that the price obtained is higher, but the number is not much, only a small portion.

Research by (Hamzens & Muis, 2022) on cocoa farm income analysis in Bobo Village, West Dolo Subdistrict, Sigi Regency, stated that the average amount of cocoa production produced by cocoa farmers in Bobo Village was 743.7 kg/ha/year with an average revenue of Rp21. 559,139.66/ha/year, while the average production cost incurred by cocoa farmers in Bobo Village is Rp4,608,438.51/ha/year, so that the average income earned by cocoa farmers in Bobo Village is Rp16,950,701.15/ha/year.

Research by (Wonda & Tomayahu, 2022), on cocoa farming income (teobroma cacao) in Hinekombe Village, Waibu District, Jayapura Regency stated that the income received by cocoa farmers for 1 year for a land area of 0.5 hectares is Rp1,150,556, and for a land area of 1 hectare is Rp2,662,500. Thus community-based cocoa farming in Hinekombe Village, Waibu District, Jayapura Regency even with a land area of 0.5 hectares is still profitable. Furthermore, research by (Putri, 2013) on the effect of production and marketing levels on cocoa farmers' income in Parigi-Moutong Regency stated that cocoa farmers' income in Parigi-Moutong Regency is influenced by production levels, average sales prices and cocoa marketing, so that there needs to be cooperation between farmers and the government to further increase cocoa production and income, as well as cocoa pricing at the village or sub-district collective trader level in Parigi-Moutong Regency.

Several previous research results in different research areas have shown that cocoa farming is profitable and feasible. Based on the description, it is suspected that cocoa farming in Punduh Pidada Sub-district is feasible, and it is necessary to conduct this research with the aim of analyzing fresh cocoa farming income and cocoa farming income with drying (post-harvest management) in Punduh Pidada Sub-district, Pesawaran Regency.

RESEARCH METHOD

This research was conducted in Baturaja and Banding Agung Villages which were purposively selected with the consideration that Baturaja and Banding Agung Villages of Punduh Pidada Sub-district are two cocoa producing villages in Pesawaran Regency, with the majority of people working as cocoa farmers and land ownership status is owned.

Samples taken in this study were cocoa farmers. The sampling method is simple random sampling, which is a random sampling system, where all individuals in the population (population members) are given the same opportunity to be selected as sample members (Sugiarto, 2003). Determination of the number of samples in this study refers to the Isaac and Michael formula in (Sugiarto, 2001). The

population of cocoa farmers in Baturaja Village is 95 households and in Banding Agung Village, Punduh Pidada Subdistrict, Pesawaran Regency is 80 households. Based on the results of the calculation of sample determination using the formula according to Isaac and Michael, the number of cocoa farmer samples is 53 farmers with details, the number of samples in Baturaja Village is 29 farmers and in Banding Agung Village is 24 farmers. Samples in each village are divided into 4 categories, namely cocoa farmers who do drying for 1, 2, 3, and 4 days. Since it is not yet known specifically how many sample farmer populations conduct drying for 1, 2, 3, and 4 days, the determination of samples based on the length of drying (1-4 days) was done by accidental sampling, according to the findings in the field.

From the results of the study, a total of 21 farmers were found to be drying for one day, namely 11 farmers in Banding Agung Village and 10 farmers in Baturaja Village. There were 19 sample farmers who did drying for two days, namely 9 sample farmers from Banding Agung Village and 10 sample farmers from Baturaja Village. There were 9 sample farmers who dried for three days, namely 3 sample farmers from Banding Agung Village and 6 sample farmers from Baturaja Village. There were 4 sample farmers who dried for four days, namely 1 sample farmer from Banding Agung Village and 3 sample farmers from Baturaja Village.

The data analysis method used in this research is quantitative descriptive method. Quantitative descriptive method was used to measure cocoa income in Baturaja Village and Banding Agung Village, Punduh Pidada Subdistrict, Pesawaran Regency. According to (Soekartawi, 2006) farm income is the difference between revenue (TR) and all costs (TC), where farm revenue is the multiplication of production and selling price, while costs are expenses made in farming. Cocoa farm income is the revenue earned by farmers after deducting farming costs.

Whether farming is economically viable and profitable or not can be analyzed using the Revenue Cost Ratio (R/C). Revenue Cost Ratio (R/C) is the ratio between total revenue and total cost. The decision-making criteria are: (1) if R/C > 1, then cocoa farming is feasible and profitable, because revenues are greater than costs incurred; and (2) if R/C < 1, then cocoa farming experiences a loss, because revenues are less than costs incurred; and (3) if R/C = 1, then cocoa farming breaks even, because revenues are equal to costs.

RESULTS AND DISCUSSION

Characteristics of Sample Farmers

Sample farmers in this study are cocoa farmers with a total number of 53 cocoa farmers. The general description of farmers is a detailed description of the characteristics of farmers who are the sample of the study, including age, education level, farming experience, number of family dependents, and ethnicity of cocoa farmers, which can be seen in Table 1.

Table 1 shows that the age of the sample farmers, the youngest was 45 years old, and the oldest was 55 years old. According to (Mantra, 2004), economically productive age is divided into 3 classifications, namely the 0-14 year group is an unproductive age, the 15-65 year group is a productive age group, and the age group above 65 years is no longer productive. Based on this, the age of the sample petai is included in the productive age group. The productive age is the ideal age for someone to work optimally, so as to get maximum work results.

Sample farmers generally have low education, because the dominant (more) is at the elementary level (77.36%).

According to (Wahyudi, 2012), education affects farmers in terms of absorption of information for increasing agricultural production.

Education can affect the ability of farmers mindset in developing their farms, especially in absorbing and adopting new farming technology in order to achieve optimal production levels. The higher the level of formal education attained by farmers, the higher the level of knowledge and adoption of cocoa farming technology.

Most farming experience of sample farmers is in the range of 22-25 years (64.15%). The longer a person does farming, the wider the experience gained by farmers. According to (Fadhla, 2017), experience will provide changes in the work skills of a farmer towards a more skillful direction, because the longer the experience, the higher the farmer's skills in farming.

Table 1.
Distribution of age, education level, farming experience, number of family dependents, and ethnicity of cocoa farmers in Punduh Pidada Subdistrict, 2022

No	Description	Number of samples (people)	Percentage (%)
1	Age (years)		
	45-55	53	100,00
2	Education level		
	Elementary School	41	77,36
	Junior High School	5	9,44
	High School	7	13,20
	Total	53	100,00
3	Farming experience (years)		
	19-25	53	100,00
4	Family dependents		
	1-2	28	52,83
	3-4	25	47,17
	Total	53	100,00
5	Ethnicity		
	Lampung	36	67,93
	Jawa	15	28,30
	Sunda	2	3,77
	Total	53	100,00

Source: Primary data, 2023 (data processed)

The highest number of family dependents of sample farmers was at 1-2 people (52.83%). According to (Hernanto, 1996), the greater the burden of dependents in a family, the farmer will be more active in trying and working in farming activities to obtain greater income, so that the welfare of farmers and all family members can be fulfilled.

The majority of ethnicity in the sample farmers is Lampung ethnicity (66.04%). Based on the results of fieldwork conducted, the research area is a residential area of Lampung ethnic community, so the sample farmers encountered are majority of Lampung ethnicity. Ethnicity is one of the characteristics possessed by sample farmers and can influence the way farmers work.

Cocoa Farming Land Area and Land Ownership Status of Cocoa Farmers

Land area is one of the important factors in farming, because the size of the farmer's land will affect the amount of production and the amount of income earned by farmers each year. The more land owned by the farmer, the more income the farmer will get each year assuming other variables are considered considered constant (cateris paribus). The cocoa farm size of cocoa farmers varies between 0.5 to 1.3 ha and the land ownership of all sample farmers is self-owned. According to (Hernanto, 1996), farmers can be categorized based on their farm size, namely: (1) narrow farmer group (<0.5 ha), (2) medium farmer group (0.5-2 ha), (3) large farmer group (>2 ha), and (4) landless farm laborer group. The distribution of cocoa farmers by land area in Punduh Pidada Subdistrict can be seen in Table 2.

Table 2
Distribution of sample cocoa farmers by land area in Punduh Pidada Sub-district, 2022

Land Area (ha)	Number of Samples (people)	Percentage (%)
0,5-1	44	83,02
1-1,5	9	16,98
1,5-2	0	0,00
Total	53	100,00

Source: Primary data, 2023 (data processed)

Table 2 shows that 83% of cocoa farmers have a land area in the range of 0.5-1 hectare. Cocoa farmers in Punduh Pidada Sub-district have no land area above 2hectares and below 0.5 hectares. The smaller the land area owned by cocoa farmers, the smaller the production obtained which affects the income received. Meanwhile, 100% of the land ownership status is the farmer's own land, which comes from hereditary inheritance from the cocoa farmer's family.

Cocoa Plant Age

Cocoa plant age is a unit of time that measures the growth time of cocoa plants. Cocoa plants whose age is still within the productive age can produce cocoa production optimally. The amount of production produced by cocoa plants is a major factor in the income of cocoa farmers.

The difference in the age of farmers' cocoa plants is due to differences in the time of cocoa planting. There are sample farmers who have cocoa farms as inheritance or gifts from parents, so that the age of cocoa they currently have is more than 10 years old and there are also those who obtained by planting themselves. The age of cocoa plants in the study ranged from 8 years to 12 years. The distribution of sample farmers based on the age of cocoa plants in Punduh Pidada Subdistrict can be seen in Table 3.

Table 3 shows that the age of most cocoa plants (83.02%) is in the range of 8-10 years. According to the (Kementerian Pertanian Republik Indonesia, 2019), cocoa starts producing at the age of 2.5-3 years after planting. Fruit production in the first year tends to be small and will continue to increase with age with optimal productivity achieved at the age of 7-11 years, so the age of the plants in the

research location is at the most productive age and in the optimal production range.

Cocoa Planting Distance

Planting distance is the distance used by cocoa farmers to organize their cocoa plants. Planting distance will affect the density of cocoa plants and the efficiency of light use, competition among plants in the use of water and nutrients, which will affect crop production. According to (Kementerian Pertanian Republik Indonesia, 2019), cocoa canbe planted at a spacing of 2.4 m x 2.4 m; 3 m x 3 m; 4 m x 4 m; or 5 m x 5 m. The ideal spacing is in accordance with the development of the cocoa plant. The ideal spacing is in accordance with the development of the plant crown and sufficient space for root development. The choice of planting distance is closely related to the nature of plant growth, the source of planting material, and soil fertility. However, in the field, cocoa farmers use planting distances of 2.5 m x 2.5 m, 2.5 m x 3.0 m, and 3.0 m x 3.0 m. The distribution of cocoa farmers based on cocoa farm spacing in Punduh Pidada Sub-district can be seen in Table 4.

Table 3.
Distribution of sample farmers based on cocoa crop age in Punduh PidadaSub-district, 2022

Plant age (year)	Number (soul)	%
5-7	0	0,00
8-10	44	83,02
11-13	9	16,98
Total	53	100,00

Source: Primary data, 2023 (data processed)

Table 4
Distribution of cocoa farmers based on spacing in cocoa farming inPunduh Pidada Sub-district, 2022

Planting distance (m)	Total plant number (stems)	Number of samples (people)	Percentage(%)
2,5 x 2,5	11.100	10	18,87
2,5 x 3,0	3.100	4	7,55
3,0 x 3,0	30.760	39	73,58
Total		53	100,00

Source: Primary data, 2023 (data processed)

Table 4 shows that the most common planting distance used by sample cocoa farmers is 3 x 3 m (73.58%). Based on the results of fieldwork, it is known that the use of this planting distance is done by farmers with an estimation system only without proper procedures from the extension service, and the cocoa seeds used are mixed seeds that come from their own seedlings and some are bought, so that the type and quality are not uniform. This planting distance is not in accordance with the recommendations of the Ministry of Agriculture, farmers should be able to use the Ministry of Agriculture's planting distance recommendations in order to have the number of plants and the growth rate of cocoa plants in accordance with the level of soil fertility.

Total of Cocoa Plants

The number of plants will determine how much production the farmer will receive. The number of plants is indirectly determined by the spacing of the cocoa plants. Based on Table 13, the majority of farmers plant cocoa at a planting distance of 3 x 3 (73.58%). The distribution of the number of cocoa plants in Punduh Pidada Sub-district is presented in Table 5.

Table 5
Distribution of the number of cocoa plants (trees/trunks) in Punduh PidadaSub-district, year 2022

Description	Planting Distance	Numberof samples (people)	%	Total number ofplants	Number of plants/ spacing/ farmers	Ideal numberof plants/farmer
1. Per Farm 0.87 Ha:	2,5 x2,5	10	18,87	11.100	1.110	1.392
	2,5 x3,0	4	7,54	3.100	775	1.160
	3,0 x3,0	39	73,58	30.760	789	967
2. Per 1 Ha:						
	2,5 x2,5	10	18,87	12.803	1.280	1.600
	2,5 x3,0	4	7,54	3.576	894	1.333
	3,0 x 3,0	39	73,58	35.479	910	1.111

Source: Primary data, 2023 (data processed)

Table 5 shows that the total number of cocoa farmer plants is highest (73.58%) ata spacing of 3 x 3 m with a total of 30,760 trees or an average number of trees/spacing/farmer of 789 trees/0.87/ha. When compared to the ideal number of plants (which should be), according to the spacing per ha, the number of cocoafarmer plants per area is still insufficient.

Based on information from sample farmers, this is caused by cocoa plants dying due to pests and diseases, and no replanting is done. Replanting is only done when the plants are immature and no replanting is done when the cocoa plants die after producing. Cocoa farmers also intercrop with other crops in between the cocoa plants, so the number of cocoa plants per ha according to the spacing chosen is less than without intercropping (monoculture). Crops planted between the cocoa plants include nutmeg, jengkol, banana and cloves.

Cocoa Farm Income

Farm income is the difference between revenue (TR) and all costs (TC), where farm income is the multiplication of production and selling price, while costs are expenses used in farming.

Cocoa farmer revenue is derived from the amount of cocoa production multiplied by the selling price of cocoa. The greater the production and the higher the selling price of cocoa, the greater the cocoa farmer's revenue. Cocoa farm income is obtained from the difference between farmer revenue minus farming costs. Income earned in cocoa farming can be divided into two, namely income on cash costs and income on total costs. Income on total costs is obtained from the subtraction of revenue from cash costs and imputed costs. Cocoa production of cocoa

farmers in Punduh Pidada Subdistrict of Pesawaran Regency can be presented in Table 6.

The production from each drying is then converted into fresh cocoa (30% moisture content) to calculate cocoa farming income in Punduh Pidada Sub-district, Pesawaran Regency. The conversion was calculated using reference information obtained from the field. The average moisture content of 1-day drying (sunny weather) is 23%, 2-day drying is 19%, 3-day drying is 13%, and 4- day drying is 9%. The price of cocoa beans in 1-day drying is Rp14,000/kg, 2- day drying is Rp17,000/kg, 3-day drying is Rp21,000/kg, and 4-day drying is Rp28,000/kg. Based on this, the ratio between moisture content and cocoa bean price is 1:2.86%. This means that when the moisture content decreases by 1%, the price of cocoa beans will increase by 2.86% and vice versa. The distribution of converted fresh cocoa production in Punduh Pidada Sub-district of Pesawaran Regency is presented in Table 7.

Based on the conversion that has been done, the cocoa farm income of farmers in Punduh Pidada Sub-district of Pesawaran Regency can be obtained. Summary of cocoa farm income analysis in Punduh Pidada Sub-district can be seen in Table 8.

Table 6
Distribution of cocoa production among cocoa farmers in Punduh PidadaSub-district, 2022

Description	Total production per 0.87 ha/year (kg)	Average production /farmers per 0.87 ha/year (kg)	Total production per 1 ha/year (kg)	Average production/farmers per 1 ha/year (kg)	(%)
Dry 1 day	61.600	2.933,33	70.805,00	3.371,64	39,62
Dry 2 days	44.310	2.332,11	50.931,03	2.680,58	35,85
Dry 3days	12.740	1.415,55	14.643,68	1.627,08	16,98
Dry 4 days	**2.470**	**617,50**	**2.839,08**	**709,77**	**7,55**

Source: Primary data, 2023 (data processed)

Table 7
Distribution of converted fresh cocoa production from 1-4 days dryingin Punduh Pidada Sub-district, 2022

Description	Total fresh produce per 0.87 ha (kg)	Total dry matter production per 0.87 ha (kg)	Total fresh produce per ha (kg)	Total dry matter production per ha (kg)	(%)
Dry 1 day	73.932	24.664,64	84.979,68	28.350,16	39,62
Dry 2 days	58.250	12.672,66	66.953,94	14.566,28	35,85
Dry 3 days	18.934	1.457,46	21.763,43	1.675,24	16,98
Dry 4 days	3.953	2.470,00	4.544,23	2.839,08	7,55
Total	155.070,00	41.265,00	178.241,00	47.431,00	100,00
Average	2.925,85	778,58	3.363,04	894,92	

Source: Primary data, 2023 (data processed)

Table 8
Summary of farm income analysis of fresh cocoa beans in Punduh PidadaSub-district, year 2022

Description	Unit	Price	Farm per 0.87 ha/year		Farm per 1 ha/year	
			Total	Value	Total	Value
Revenue				**33.032.619,22**		**37.968.527,84**
Fresh Cocoa Beans	Kg	11.290	2.926,00	33.032.619,22	3.363,04	37.968.527,84
Cash Cost						
Fertiliser:						
Urea	Kg	1.800	251,70	453.060,00	289,31	520.754,72
NPK Pearl	Kg	2.300	132,17	303.991,00	151,92	349.414,44
Pesticide:						
Regent	L	250.000	5,06	1.263.750,00	5,81	1.452.586,21
Fastac	L	114.000	5,06	576.270,00	5,81	662.379,31
Sidalaris	L	150.000	5,06	758.250,00	5,81	871.551,72
TKLK	HKP	70.000	39,00	2.712.962,26	44,55	3.118.347,43
Tax Cost	Rp			46.368,00		53.296,55
Total Cash Cost				**6.114.647,26**		**7.028.330,30**
Incurred Costs						
Depreciation	Rp			156.477,99		179.859,76
TKDK	HOK	70.000	75,76	5.302.962,26	87,08	6.095.358,92
Transport	Rp/th			585.169,49		672.608,61
Total Costs Incurred				**6.044.609,75**		**6.947.827,29**
Total Cost				**12.159.257,10**		**13.976.157,59**
Farm Income						
Income on cash costs	Rp			**26.917.971,86**		**30.940.197,54**
Income on total cost	Rp			**20.873.362,11**		**23.992.370,25**
R/C on cash cost				**5,40**		**5,40**
R/C on total cost				**2,72**		**2,72**

Source: Primary data, 2023 (data processed)

Table 8 shows that the revenue of cocoa farmers in Punduh Pidada Subdistrict amounted to Rp33,032,619.22/0.87 ha/year with the average total cost they spent to conduct cocoa farming activities amounted to Rp12,159,261.01/0.87 ha/year, so that the income on total costs obtained per year amounted to Rp20,873,358.21/0.87 ha/year. Cash costs incurred per year

amounted to Rp6,114,647.26/0.87 ha/year, so that the income on cash costs per year obtained by sample farmers amounted to Rp26,917,971.86/0.87 ha/year. To find out the analysis of cash income per hectare, then the conversion of land into 1 ha, sothat the average income on cash costs obtained amounted to Rp30,940,197.54 /ha/year and the average income on total costs obtained amounted to Rp23,992,370.25 /ha/year.

Table 8 also shows that the cash and total R/C values obtained are 5.40 and 2.72, which means that every Rp1.00 of costs incurred in cocoa farming will result in cash and total revenues of Rp5.40 and Rp2.72, respectively. The ratio of revenue to cash and total costs that is greater than 1 indicates that cocoa farming run by the sample farmers is proven to be feasible and profitable.

The results of this study are lower than the results of (Anggraeni et al., 2018) study on income analysis and cocoa marketing in Bulok Subdistrict, Tanggamus Regency, which stated that the R/C value was 6.93 on cash costs and 2.47 on total costs, which indicates that cocoa farming by respondent farmers is profitable and feasible.

Cocoa Income Post-Harvest Management

In this study, cocoa farmers sold their cocoa in the dried form, i.e. with dryness levels of 1, 2, 3, and 4 days. The total cocoa production of 53 cocoa farmers in Punduh Pidada Sub-district of Pesawaran Regency was 121,120 kg/0.87 ha/year in the dried form of 1, 2, 3, and 4 days drying. The production of sample farmers with 1-day drying was 61,600 kg/0.87 ha/year, 2-day drying was 44,310 kg/0.87 ha/year, 3-day drying was 12,740 kg/0.87 ha/year, and 4-day drying was 2,470 kg/0.87 ha/year.

The price of cocoa beans per kilogram depends on the level of dryness or moisture content of the beans. Based on information from the research location, the price of cocoa beans in 1-day drying is Rp14,000/kg, 2-day drying is Rp17,000/kg, 3-day drying is Rp21,000/kg, and 4-day drying is Rp28,000/kg.

Farm income is the difference between revenue (TR) and all costs (TC), where farm revenue is the multiplication between production and selling price, while costs are expenses used in farming. Costs in cocoa income post-harvest management in Punduh Pidada Subdistrict of Pesawaran Regency use total farming costs (fresh cocoa) which are divided based on the percentage of each production on various types of drying that have been converted into fresh cocoa beans, namely for 1-day drying at 39.48%, 2-day drying at 37.86%, 3-day drying at 16.33%, and 4-day drying at 6.33%. Then added with drying labor costs and marketing costs. The summary of cocoa income analysis of post-harvest management in Punduh Pidada Sub-district can be seen in Table 9.

Table 9 shows that the average post-harvest management cocoa income in 1- day drying is Rp35,625,691.23/0.87 ha/year (32.64%), 2-day drying is Rp33,817,212.44/0.87 ha/year (30.95%), 3-day drying is Rp25,652,523.34/0.87 ha/year (23.48%), and 4-day drying is Rp14,220,438.47/0.87 ha/year (12.92%).

To find out the analysis of cash income per hectare, the conversion of land to 1 ha is carried out, so that the average post-harvest management cocoa income obtained by farmers is Rp40,949,018.88/ha/year, 2-day drying is Rp38,870,452/ha/year, 3-day drying is Rp29,485,659.01/ha/year, and 4-day drying is Rp16,345,331.58/ha/year.

Table 9
Summary of income analysis of 1-2 and 3-4 days drying cocoa farmers inPunduh Pidada Sub-district, 2022

Description	Average		Average	
	(0,87 ha/year)	(1 ha/year)	(0,87 ha/year)	(1 ha/year)
Drying (days)	1		2	
Income: TR-TC				
Revenue (TR) = P.Q (Rp)				
- Production (Q) (kg)	2.933,33	3.371,64	2.332,11	2.680,59
- Price (P) (Rp)	14.000,00	14.000,00	17.000,00	17.000,00
Total Revenue (TR) (Rp)	**41.066.620,00**	**47.202.960,00**	**39.645.789,00**	**45.569.965,52**
Total Cost (TC):				
-% Total cost of fresh cocoa + b. depreciation of tarpaulin (Rp)	4.883.928,77	5.613.711,23	4.683.524,40	5.383.361,38
- Labour cost of drying (Rp)	557.000,00	640.229,89	1.145.053,00	1.316.152,45
- Marketing costs (transport) (Rp)	0	0	0	0
Total Cost (TC) (Rp)	**5.440.928,77**	**6.253.941,12**	**5.828.577,03**	**6.699.513,83**
Income (I) = TR -TC (Rp)	**35.625.691,23**	**40.949.018,88**	**33.817.212,44**	**38.870.452,00**
Drying (days)	3		4	
Income TR-TC (Rp)				
Revenue (TR) = P.Q(Rp)				
- Production (Q) (kg)	1.415,56	1.627,08	617,5	709,77
- Price (P) (Rp)	21.000,00	21.000,00	28.000,00	28.000,00
Total Revenue (TR) (Rp)	**29.726.760,00**	**34.168.689,66**	**17.290.000**	**19.873.563,22**
-Total Cost (TC):				
% Total cost of fresh cocoa + b. depreciation of tarpaulin (Rp)	2.020.125,55	2.321.983,39	783.061,53	900.070,72
- Labour cost of drying (Rp)	1.771.000,00	2.035.632,18	2.163.000,00	2.486.206,90
- Marketing costs (transport) (Rp)	283.111,11	325.415,07	123.500,00	141.954,02
Total Cost (TC) (Rp)	**4.074.236,66**	**4.683.030,65**	**3.069.561,53**	**3.528.231,64**
Income (I) = TR -TC (Rp)	**25.652.523,34**	**29.485.659,01**	**14.220.438,47**	**16.345.331,58**

Source: Primary data, 2023 (data processed)

The income of cocoa farmers in the average 4-day drying in Punduh Pidada Subdistrict of Pesawaran Regency is lower than the research conducted by (Anggraeni et al., 2018) on income analysis and cocoa marketing in Bulok Subdistrict of Tanggamus Regency, which states that cocoa

farming income in Bulok Subdistrict of Tanggamus Regency at total cost is Rp16,365,572.38 per year.

Table 9 also shows that the highest (32.64%) average cocoa income from post-harvest processing management of cocoa farmers in Punduh Pidada Subdistrict of Pesawaran Regency is in 1-day drying with an average production of 2,933.33 kg/ha and the lowest (12.92%) is in 4-day drying with an average production of 617.5 kg/ha. This means that the majority of cocoa farmers in Punduh Pidada Sub-district of Pesawaran Regency sell their cocoa beans in the form of dried cocoa beans with 1 day drying.

Based on information from fieldwork, the majority of cocoa farmers in Punduh Pidada Sub-district of Pesawaran Regency sell cocoa beans with 1-day drying, because cocoa farmers can generate income faster and can do other work.

CONCLUSIONS

Fresh cocoa farming income (30% moisture content) obtained by farmers in Punduh Pidada Subdistrict of Pesawaran Regency is Rp23,992,370.25/ha/year, while post-harvest management cocoa farming income at 1 day drying is Rp40,949.018.88/ha/year, 2-day drying is Rp38,870,452/ha/year, 3-day drying is Rp29,485,659.01/ha/year, and 4-day drying is Rp16,345,331.58/ha/year, with R/C of cocoa farming more than 1, meaning that cocoa farming is profitable and feasible.

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