

Twuak Processing Production and Revenue in Lingat Village Selaru Sub-District, Maluku Tenggara Barat District

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Abstract – Lingat Village is one of the villages in the Selaru Subdistrict where the community processes the Lontar plant as the main livelihood, because there are many lontar plants and the community is still active in commercializing this plant, which is made into Twuak. Twuak is a processed product from the sap that is produced from palm trees, which is a very important source of household income. This study aims to determine the production of Twuak processing business and the feasibility of its processing business. The method used is using a simple random sampling technique wherein the sampling is done randomly without regard to strata in certain populations; with the number of samples taken is 90 heads of households who process Twuak. The results showed that the characteristics of the highest age Twuak manager between 35-45 years amounted to 56 (62.22%), level of education graduated from elementary school 33 (36.67%), the number of family members 3-4 people 54 (60%) and business experience 10-20 years 62 (68.60%). The average annual production level of Twuak's processing business is 1,022 Liters, with an average Twuak income of Rp.39,811,126.

Keywords – Twuak; Production; Income.

I. INTRODUCTION

Farming business in general is subsystem using conventional technology. Maluku is one of the provinces in Indonesia, which is geographically an archipelago (small islands) where 92% of its territory consists of oceans and its side is a large land area managed in the form of people's agricultural businesses. In contrast to large islands, small-scale agricultural business must receive important attention and be arranged in such a way that the potential of existing natural resources can be utilized optimally and sustainably [1].

One of the small islands in Maluku is Selaru Island, which is part of the government area of West Southeast Maluku Regency, Maluku province. This island is located in the south of Yamdena Island. Local villagers generally prioritize agriculture and fisheries as the main source of livelihood is the Twuak processing business.

Some studies about twuak include [2]. About Alcohol Testing in Wine Fermentation. Teknosains, concluded that palm wine containing certain sugars, namely sucrose, glucose, fructose and carbohydrates that have an average degree of acidity 6-7. If the sap is stored then fermentation will occur by the presence of microorganisms contained in the sap so that it causes a sour taste due to the formation of acetic acid.

[3] Concerning the use of palm sugar plants, concluded that the juice of the sap can be used as palm sugar and palm wine, besides that the palm plant is also used to make roofs, palm brooms, broomsticks and funnels. In addition, [4] Yunita et al 2017, which examined the potential of palm sugar juice as a source of isolates for acetic acid bacteria, found that there were four BAA isolates isolated from palm sugar (*Arenga pinnata* Merr.).

[5] which examines Adding to Palm Sugar through the Use of Natural Preservatives, concluded that the ratio of added value of palm sugar was 44 percent while palm sugar was 80 percent. The profit received by the service owner of the factors of production in palm sugar products is 43 percent and palm juice is 32 percent. Both of these products still have big opportunities in increasing their production.

Research [6] on the relationship of alcohol consumption patterns to the incidence of hypertension, concluded that there is a significant relationship between alcohol consumption patterns with the incidence of hypertension in the tourism workforce in Legian Village.

Twuak is a processed product from roomie. The juice of this sap is obtained by carrying out special treatment, which is often called tapping on the Lontar sprouts that have not yet opened. [7] Twuak produced from palm trees is an important source of household income. Another source of income is the manufacture of copra and seaweed. Because these plants are sasi plants and copra prices are declining, the income received by each community from copra and seaweed is still small. The seaweed business was initially very good, but due to the impossible natural weather and the declining price of seaweed, the farmers' income has decreased, resulting in the community switching jobs to make Twuak from palm trees, this business is classified as profitable and is a source of income that is obtained quickly.

Lontar or siwalan plants originated from India and then spread to Papua New Guinea, Africa, Australia, Southeast Asia and tropical Asia. Lontar mainly grows in arid regions. In Indonesia, lontar grows mainly in the eastern parts of Java, Madura, Bali, West Nusa Tenggara and East Nusa Tenggara. NTT is a lontar natural distribution area, namely on the islands of Timor, Flores, Sumba, Sabu, Rote and other islands. So that the number or population of palm ears is rather difficult to estimate, because many and their distribution is very wide or scattered and there is no attention to calculate them. In addition, due to various ages, from new ones to old ones may even be hundreds of years old [8].

Twuak is a traditional Maluku drink containing alcohol. Sopi itself comes from the Dutch language, Zoopje, which means liquid alcohol. Its existence is illegal. But the drink has been engrained and rooted in the life of the people of Maluku, Karen being an inseparable part of traditional ceremonies or parties. On the one hand, the local government is compelled to issue it, or plan to legalize it, with the aim of controlling its production. Twuak currently circulating in the community has alcohol content above 30% so it is categorized as group C.

Twuak is a processed product from roomie. Which is obtained by carrying out special treatment of this roomie is obtained by carrying out a special treatment, which is often called the deposition on the Lontar spice that has not been opened. Twuak is a beverage that has not officially had legal force so that its sales are also carried out carefully by using existing social networks [9].

Based on the previous background, there are problems that can be explained in this paper: (1) What are the characteristics of the Twuak processor?; (2) How much is the production and income obtained from the Twuak processing business?

II. RESEARCH METHODS

This research was conducted in October to April-June 2019 in the village of Lingat Selaru District of West Southeast Maluku Regency. This village was chosen as the location of the study because there are many palm trees and many people are still active to process these plants into Twuak as the main source of income.

Sampling used is using a simple random sampling technique wherein the sampling is done randomly without regard to strata found in certain populations [10]. The number of samples taken was 30 percent or 90 respondents from 300 families who processed lontar (Twuak) or Sopi. Primary data were obtained through direct interviews with respondents using a research questionnaire. Secondary data were obtained from related institutions or institutions such as (Lingat village office), journals, websites and libraries related to this research.

The data analysis technique used in this research is descriptive qualitative, to calculate the Respondents' Income used the formula:

$$B = TR - TC$$

Information :

B = Twuak Operating Income

TR = Total Revenue

TC = Total Cost

III. RESULTS AND DISCUSSION

1. Production

Production is an activity to increase benefits by combining the factors of capital production, labor, and technology. Besides production as a process of changing inputs into outputs. Production includes all activities to create/add value/use of an item / service. Then related to the

production process that occurs a transformation of various production inputs to produce output. Twuak production to increase added value and is an agricultural product into an intermediate product that can be used as raw materials for home industries. The majority of people in the village of Lingat process this palm-leaf sap into Twuak in order to obtain fast income for meeting their daily needs.

Research respondents are respondents who process Lontar commodity. Respondents in Lingat Village have different characters that affect the decision making in running Lontar commodity businesses. Respondent characteristics include age, level of education, number of family members, experience of farming, and livelihood (main and side) in Lingat Village. Based on the characteristics table of respondents below, this age level shows that the twuak respondents who are in the 35-45 years age category have the highest percentage of 62.22 percent, followed by respondents aged 46-55 years with a percentage of 23.33 percent, and followed by age respondents 56-65 with a percentage of 12.22, while the lowest percentage is at age > 65 with a percentage of 2.22 percent.

This shows that some of the respondents have an average age of relatively young, and still reaching a productive age, the age of respondents who are still relatively young shows that the spirit of enterprise never disappears from their lives, this can be seen from their seriousness in managing their farming is relatively no different. With other respondents who are older. Business respondents who are getting older, affect their physical abilities and health, but the reality on the ground shows that their enthusiasm with old age remains high to do this activity (see Table 1).

Table 1. Characteristics of Respondents

Age (Years)	Amount (person)	(%)
35-45	56	62.22
46-55	21	23.33
56-65	11	12.22
>65	2	2.22
Level of education		
Elementary school	33	36.67
Middle School	30	33.33
High school	27	30
Number of family members		
1-2	16	17.78
3-4	54	60

5-7	20	22.22
Tifar Business Experience		
10-20	62	68.89
21-30	28	31.11

Source: Primary Data (processed, 2019)

The above table for the level of education above shows that the majority of respondents in the study villages were only able to attend school up to elementary school level, namely as many as 33 people (36.67%). The level of education does not affect the processing of twuak processing undertaken by respondents, this can be seen from the level of production of twuak produced by respondents who have elementary, junior high, and high school education. Where at the elementary level of education in managing twuak is greater than at the junior high and high school levels. If you see, awareness about the level of education of respondents is still low but the low level of education does not affect respondents in managing twuak because respondents learn from generation to generation on how to manage twuak.

Table 1 the number of family members explains the number of family members ranging from 3 to 4 people have a higher percentage with 54 people. This is because farmers do not participate in government programs, namely family planning (KB) programs. The more family members, the higher the burden of living so that the difficulty of living costs is greater. The size of the family member encourages farmers to work harder to get more income to meet the needs of themselves and their families. Impact on household expenditure. Based on the above results, the farmers will try to produce Lontar as much as possible to be able to increase income and welfare of their family life. The farming experience table shows that farmers with 10-20 years of farming experience are 68.89 percent. Generally, twuak managers who have longer experience in farming, have a myriad of better skills and better understand the process of twuak processing. The experience of farming is obtained from generation to generation of information from parents.

Based on table 2 above it can be seen that based on the standard deviation for the age level is 8.9 with a minimum value of 35 respondents, a maximum of 67 respondents, an average of 45 respondents from a total of 90 respondents. For education level is 0.8 with a minimum value of 1 respondent, a maximum of 3 respondents, an average of 2 respondents from a total of 90 respondents. For the duration of business is 5.4 with a minimum value of 10 respondents, a maximum of 30 respondents, and an average of 18 respondents out of 90 respondents. In addition, for the number of family members

is 1.3 with a minimum value of 1 respondent, a maximum of 7 respondents, an average of 4 respondents from a total of 90 respondents.

Lontar tree is one type of palm plant, which all parts of this plant are very beneficial for the community and have economic value. However, the production of Lontar, which is much sought after by the community, is Nira, which is processed to produce sageru and twuak. In addition, this part of the plant is very beneficial for the community, such as

leaves and palm fiber (gamutu). Lontar leaf consists of midrib (leaf stalk), leaf blade and stick (bone). This leaf gives a great value to the community where the stick (leaf bone) is used as household furniture, palm fiber utilization from Lontar plants, especially for the manufacture of brooms, ropes, and others that are needed by the community. This product has market value, besides that it can meet the consumption needs in the village for products derived from palm trees, but it also can increase labor absorption and increase farmers' income.



Figure 1. Lontar Tifar Process: a) Lontar Tree cleaning process, b) Lontar Tree climbing process, c) Tifar process.

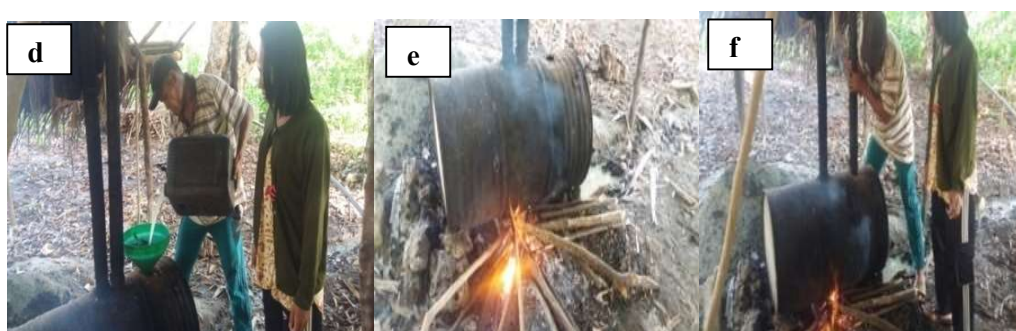


Figure 2. Twuak processing: d) Sageru screening process, e) Sageru cooking process, f) Bamboo planting process for distillation



Figure 3. The results of sageru refining: g) and h) the final result of twuak refining.

Lontar plant in the study area is one type of plant that is cultivated as their livelihood as a side business. The lontar business in the village of Lingat is an extractive business where farmers only take the results of the tree without first having to cultivate. Lontar already grown wildy available, so farmers only have to work on it. This effort is carried out by commercializing the male flower bunches and cobs that have come out on the palm tree where the best sedimentation conditions when the palm tree is at the age of 8-9 years.

Farmers in this case only provide equipment that supports the implementation of the business, such as the supply of knives, roomie storage containers, and other tools that do not require large costs, processing natural resources for palm plants in Lingat Village, only produces two products namely sageru and twuak.

Sageru is one of the farmers' livelihoods in Lingat village, which is their side job. The sap of sap from the Lontar tree taken was called Sageru. The occupation of palms from palm trees to become sageru is known as 'Tifar'. Lontar plants that are ready to be produced can be seen if bunches or cobs of male flowers that have come out on the palm trees. Criteria for male mayang is ready to be tapped if the flowers in the male are starting to bloom (open), pandandapan techniques are as follows:

1. Before Tifar or staining, initially the male flower stalk is tapped or beaten for about two weeks, to facilitate the exit of the sap.
2. Tifar or Standing is carried out twice every day, 06.00-08.00 WIT and 16.00-18.00 WIT.
3. Tifar staining is done in a good manner so that the quality of roomie can be maintained with the following requirements:
 - a) Sageru container (roomie) is usually used Aqua or jerry cans that are cleaned first and dried. For container that will be reused, it should be washed with heated sap to maintain the tapped sap;
 - b) Tifar or sageru (sap) absorption using a special knife (not used for other purposes) and sharp.
 - c) After that the sap is taken and stored for 2-3 days and in 1 week is produced approxima-tely 2-3 times then filled into 30 liter jerry cans and then copied to drom and cooked. In addition, from the results of the roomie produces 5 liters of Twuak.
 - d) After it is taken and accommodated then it is ready to be sold to consumers.

Twuak is a traditional drink in eastern Indonesia including Maluku. Twuak drink comes from fermented

(Borassus flabellifer) which has been distilled. The way to make it is simple, tap water from palm trees or c

2. Analysis of Lontar Managers' Income (Twuak)

2.1 Production Costs

Production costs are part of the compensation received by the owners of factors of production or costs incurred by farmers in the production process, both cash and non-cash [11]. Costs incurred for managing palm trees based on research consist of fixed costs and variable costs of fixed costs including the costs of depreciation of agricultural equipment. The tools used for palm farming are machetes, knives, filters, jerry cans, ropes, streams, drums, Aqua Bottles, and Blongs. Whereas variable costs include labor costs and transportation costs. The data can be seen in table 2, below:

Table 2. Production Costs for Lontar Managers (Twuak)/Year

Cost Categories	Total Production Costs	Average Production Cost
A. Fixed Costs		
- Epreciation	9,118,625	101,318
B. Variable Costs		
- Labor costs	165,600,000	1,840,000
- Transportation costs	70,200,000	780,000

Source: Primary Data (processed, 2019)

Table 2 shows that the Production cost category for fixed costs (Depreciation) with a total production cost of Twuak / Year is Rp. 9,118,625 with an average production cost of Rp. 101,318, while for variable costs (labor) with a total production cost of Twuak/Year Rp. 165,600,000 and the average production cost of Rp. 1,840,000 for (transportation costs) with a total production cost of Twuak/Year of Rp. 70,200,000 with an average production cost of Rp. 780,000.

Table 3. Twuak/Year Business Production Costs

No	Production Cost (Rp)	Amount (person)	(%)
1.	2.000.000-3.000.000	41	45.56
2.	>3.000.000	49	54.44
Total		90	100.00

Source: Primary Data (processed, 2019)

The data in Table 3 shows that the Twuak business production costs incurred by respondents during the production process are Rp. 2,000,000-3,000,000 totaling 41

respondents and Rp. > 3,000,000 are 49 respondents. Based on the table above, it can be concluded that the biggest production cost of twuak business is spent during the twuak business process is Rp. > 3,000,000 is 54.44 percent. From this data shows that the highest number of respondents is 49 people with a production cost/year of Rp. > 3,000,000 due to the production process/year carried out as many as 1200 times compared with the number of respondents as many as 41 with a production cost of Rp. 2,000,000-3,000,000 because the production/year produced is as much as 800 times, this shows that the production carried out by each respondent is different depending on the production of palm.

2.2. Reception of the Twuak Management

Farm receipts are multiplications between the productions obtained with the product-selling price. Total revenue or gross income is the total production value before deducting production costs. Net farm income is the difference between revenue and all costs or total costs. Farmers in obtaining high net income, farmers must seek high revenues and low production costs [12].

Revenue is an estimate between the production obtained and the selling price. Revenue obtained from total production times the selling price; in this case, the production produced by respondents is in the form of twuak, to be more clearly seen in table 4.

Table 4. Average Production, Revenue and Revenue of Twuak

No	Description	Average/Rp/year
1	Production (Liter)	1022
2	Selling price (Rp)	41.600
3	Receipt (Rp)	42.524.444
4	Production cost (Rp)	2.713.318
5	Income (Rp)	39.811.126

Source: Primary Data (processed, 2019)

Table 4 above shows that the production of Twuak produced by twuak respondents with an average production of 1022 liters/year. with a selling price of Rp. 41,600/liter. for an average receipt of Rp. 42,524,444, production costs incurred with an average of Rp. 2,713,318. The average income of twuak is Rp. 39,811,126. The size of the acceptance of the twuak processor is influenced by the size of the sageru or roomie produced.

2.3. Twuak Processing Business Income

The income of Twuak respondents in this study varies greatly depending on the management of the farmers

themselves. The concept of income is generally the result of the amount of production multiplied by the selling price and then reduced by the total cost consisting of fixed costs and variable costs.

Income from Twuak business is the difference between revenue and total costs used in running Twuak business. Income obtained from 90 respondents from business twuak and expressed in rupiah respondents' income from business twuak can be seen in table 5.

Table 5 shows that the respondent's income from business in one year was 41.11 percent with a total income of Rp. 30,000,000-45,000,000 and 54.44 percent with a total income of Rp> 45,000,000 so that it can be concluded that the largest respondent's income is Rp. > 45,000,000, totaling 53 respondents. Based on the results of the research the data above shows that the most number of respondents who have income of > 45,000,000 is due to the production/year conducted by 53 respondents is very large compared to respondents with the number 37, so it causes the income received is also very satisfying, the amount the income earned by the twuak manager in trying for palm eels varies depending on the production produced.

Table 5. Twuak/year operating revenues

No	Income (Rp)	Amount (person)	(%)
1	30.000.000 - 45.000.000	37	41.11
2	> 45.000.000	53	58.89
Total		90	100.00

Source: Primary Data (processed, 2019)

IV. CONCLUSION

Based on the results of the study showed that the characteristics of the highest age Twuak managers between 35-45 years of 56 (62.22%), the level of education graduated from elementary school 33 (36.67%), the number of family members 3-4 people 54 (60%) and experience tifar business 10-20 years 62 (68.60%). The average annual production level of Twuak's processing business is 1,022 Liters, with an average Twuak income of Rp.39,811,126.

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