

# The Amount of Working Capital Needed To Develop a Rattan Farming Business

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**Abstract---** *This study aims to identify the amount of working capital needed to develop a rattan farming business. The research was conducted in Sigi District, Central Sulawesi, studying several types of rattan, namely rattan Batang, rattan Lambang, rattan Pahit, rattan Tohiti, and rattan Noko. The sampling process exercised the stratified random sampling method with 50 farmers as respondents. The result shows that the production of rattan Batang farmer exercises the working capital with the amount of Rp. 19.615.954 per hectare every harvesting period, with a net of 19.010.000. The farming of rattan Lambang requires lower working capital of Rp.17.063.318, with a relatively lower net of Rp.13.243.818. Consecutively, rattan Pahit required a working capital of Rp.10.511.318 with the net of Rp.6.691.818, rattan Tohiti requires the working capital of Rp. 13.869.409 with the net of Rp.10.049.909, and rattan Noko required the working capital of Rp.9.294.318 with the net of Rp.5.474.818.*

**Keywords---** *Working Capital Needs; Rattan Farming Business.*

## INTRODUCTION

A company carries out various activities to achieve its goal; revenue. Essentially, every activity carried out by the company always requires working capital, both to finance the daily operational activities and its long-term investments [1]. The success or failure of a company in managing its working capital depends on the efficiency of the working capital management in the company [2].

The use of working capital must be managed as effectively as possible for the company revenues to be increased [3]. Effective company policy in managing the amount of capital appropriately will produce benefits, while the improper working capital investment will result in losses. The amount of working capital required for a working period needs to be calculated by the financial manager [4]. The aim is to maintain a more selective use of working capital to avoid unnecessary shortages or excess working capital [5].

To meet these needs, the company must be able to find funding sources at a low cost because working capital is pivotal for company operations. Moreover, the better the working capital management, the higher the level of income that can be obtained. One of the important things in working capital management is to determine the working capital needs for a type of business [6].

Currently, rattan still has a bright prospect because it is a national natural wealth that has many advantages. Therefore, its utilization needs to be managed as good as possible [7]. Central Sulawesi Province is one of the producers of non-timber forest product commodities which contribute significantly to the regional income. The types of rattan that grow in Central Sulawesi generally include the *Calamus* and *Daemonorops* families. Rattan production in Central Sulawesi is dominated by several types, three of which are categorized as superior rattan, namely rattan Batang (*Calamus Robustus Warb*), rattan Lambang (*Calamus sp*), and rattan Tohiti (*Calamus Inops*) [8]. This superiority is due to the high economic value of these three types compared to other types of rattan. Therefore, they can be categorized as superior rattans.

Working capital is the funds needed to fulfill the company's daily operational needs. Working capital is related to the overall funds used during a particular accounting period that is intended to generate income in that period (current income) [9]. This study wants to see how much working capital required in rattan farming in Central Sulawesi Province. This study aims to determine the amount of working capital in rattan farming in Central Sulawesi Province.

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## MATERIAL AND METHODS

### The object of the research

The object of this research is the community in Sigi District that is working in the rattan farming business.

### Data Collection

Data used in this study is the primary and secondary data. The data collection process used the following techniques:

1. Observation
2. Interview
3. Documentation

The research used a descriptive assessment method to describe the reality in the field in detail and factual symptoms occurred on the object under study, especially on the need for working capital in rattan farming. In line with the problems of this study, the solution is to use a method to determine working capital requirements.

According to Sutrisno (2000), to determine the need for working capital, one needs to use the following formula:

$$\text{Working Capital Needed} = \frac{\text{Sells (Forecast result)}}{\text{Working capital turnover}}$$

To calculate the capital turnover, one can use a comparative analysis with procedures for calculating the working capital turnover, cash turnover, and inventory turnover using working capital analysis tools as follows:

- a. Working Capital Turnover (WCT)

Working Capital Turnover in this study was measured using the formula:

$$\text{WCT} = \frac{\text{Sells}}{\text{Current asset} - \text{Current debt}}$$

- b. Inventory Turnover (IT)

The inventory turnover displays how many times inventory sold and replaced within a farming period, indicating that the level of sales is high at the company (Munawir 2002: 77).

Inventory Turnover in this research is measured using the following formula:

$$\text{IT} = \frac{\text{Cost of goods solds}}{\text{Average inventory}}$$

- c. Cash Turnover

Cash turnover is a comparison between sales and the average amount of cash (Bambang Riyanto, 2011:95).

Cash turnover in this study was measured using the following formula:

$$\text{CT} = \frac{\text{Net sales}}{\text{Average cash}}$$

## RESULTS AND DISCUSSIONS

### Details of Rattan Farmer Business Costs

The exploitation of rattan described in this study includes costs that have been incurred, predicted costs until the end of the cycle, the price of rattan Batang, Lambang, Tohiti, Tarumpu, Pahit and Noko per kilogram per hectare based on the following assumptions:

1. The optimal estimation cycle for all rattan at the age of 7 years.
2. Costs for rattan exploitation based on the Day of Working required. The labor wage per day is IDR 50,000 / day.
3. Estimated production (physical) is determined based on the cycle, diameter class and total volume of rattan.
4. The price of rattan is based on the prevailing price in the market: Rp.2,000 / kg for rattan Batang, Rp.1,900 / kg for rattan Lambang, Rp.2,000 /kg for Tohiti, Rp.1,800 /kg for rattan Pahit, and Rp.1,700 /kg for rattan Noko, while other detailed costs can be seen in cash flow.

To facilitate the calculation of financial analysis, the costs incurred as well as the predicted costs that have been incurred until the end of the cycle, these costs are grouped into fixed costs and variable costs. The details of these costs are described as follows:

#### 1. Fixed Costs

The fixed cost components in rattan exploitation are as follows:

- 1) Planning
- 2) Land and building tax
- 3) Guardhouse
- 4) Labor costs / management costs

#### 2. Variable Costs

The variable costs of operating this activity are different for each activity, with details of the cost per hectare being as follows:

- 1) Planning
- 2) Land preparation
- 3) Procurement and transportation of seeds
- 4) Planting and planting holes preparation
- 5) Stitching

- 6) Maintenance
- 7) Weeding
- 8) Fertilizing
- 9) Equipment
- 10) Harvesting

#### Analysis of Rattan Farmers' Working Capital Needs

To calculate the working capital needs in the business, it is necessary to have financial data on rattan farming which was taken and analyzed in a one-time harvest period for one hectare of land.

The following is the presentation of each data to be presented:

##### a. Cash sale

In this business field, rattan sales are carried out in cash. Calculation of cash sales was conducted by determining the amount of rattan harvest per hectare times the price of rattan per kilogram.

**Table 1.**  
**Penjualan Rotan Batang (Rp/Ha/Thn)**

No	Age (years)	TP (kg/ha)	Price (Rp/Kg)	Sells (Rp/Kg/ha)
1	15	6.190	2.000	12.380.000
2	18	7.630	2.000	15.260.000
3	21	9.220	2.000	18.440.000
4	24	10.940	2.000	21.880.000
5	27	12.960	2.000	25.920.000
6	30	15.700	2.000	31.400.000
7	33	17.280	2.000	34.560.000
8	36	18.500	2.000	37.000.000
9	39	19.560	2.000	39.120.000
10	42	20.500	2.000	41.000.000
11	45	21.376	2.000	42.752.000
Total	330	159.856	22.000	319.712.000
Average	30	14.532	2.000	29.064.727

The table shows that the rattan Batang can be harvested from the age of 15 years to the age of 45 years. However, the age of production used in this study is the average age of eleven harvesting periods in 30 years, with an average production of 14,532 kg. Therefore, the average cash sales of the rattan Batang business from the age of 15 years to the age of 45 years is equal to Rp.29,064,727.

##### b. Cash deposit

In the rattan farming business, an initial cash deposit is assumed to be the same as the final cash deposit. If one wants to carry out the replanting process, the final cash deposit in the previous period becomes the initial cash deposit in the next period. Since the sale is done in cash, the final cash deposit is the net profit derived from the cash sales, or the income minus the average costs for eleven harvests period.

The profit and loss statement for rattan farming is as follows:

The average sales for 11 times the harvest period: Rp. 29,064,727

Land and building tax	: Rp.1.150.000
Planning	: Rp.25.000
Land preparation	: Rp.2.000.000
Procurement of seeds	: Rp.1.600.000
Transportation of seeds	: Rp.20.000
Planting and planting holes preparation	: Rp.240.000
Stitching	: Rp.40.000
Maintenance	: Rp.4.500.000
Weeding	: Rp.400.000
Guard house and its maintenance	: Rp.3.257.000
Infrastructure	: Rp.4.550.000
Fertilizing	: Rp.2.350.000
Equipment	: Rp.3.528.000
Harvesting cost	: Rp.63.942.000

Miscellaneous expense	: Rp. 23.000.000(+)
Total cost	= Rp.110.602.000(:)
Average cost for 11 harvesting time	= Rp 10.054.727(-)
Net	= Rp. 19.010.000

The data displays the initial cash and the ending cash of rattan farming for one harvesting period is Rp.19,010,000.

### c. Inventory

The following table shows the amount of the initial inventory and the ending inventory in rattan farmers' businesses.

**Table 2**  
**Rattan Farming Inventory**

Component	Initial supply	Used inventory	End inventory
Seeds procurement	Rp. 1.600.000	Rp. 1.600.000	0
Fertilizer	Rp. 2.350.000	Rp. 2.350.000	0
Equipment	Rp. 3.528.000	Rp. 3.367.000	Rp. 161.000
Total	Rp. 7.478.000	Rp. 7.317.000	Rp. 161.000

The table shows that the initial inventory of rattan farmers for one planting process is Rp.7,478,000, while the final inventory is Rp.161,000.

### d. Accounts Receivable

Capital turnover can be described as follows:

1. The first thing to do is to calculate the average value of each element of working capital with the following formulation:

$$\begin{aligned}
 \text{a. Cash average} &= \frac{\text{Initial cash} + \text{end cash}}{2} \\
 &= \frac{\text{Rp. 19.010.000} + \text{Rp. 19.010.000}}{2} \\
 &= \text{Rp. 19.010.000} \\
 \text{b. Averagre supply} &= \frac{\text{Initial supply} + \text{end supply}}{2} \\
 &= \frac{\text{Rp.7.478.000} + \text{Rp.161.000}}{2} \\
 &= \text{Rp3.819.500}
 \end{aligned}$$

2. After calculating the average value of each element of working capital, the next step is to calculate the working capital turnover. Working capital turnover can be calculated with the following formulation

$$\begin{aligned}
 \text{a. Cash turnover} &= \frac{\text{Sells}}{\text{Cash average}} \\
 &= \frac{\text{Rp29.064.727}}{\text{Rp. 19.010.000}} \\
 &= 1,5 \text{ Kali} \\
 \text{b. Inventory turnover} &= \frac{\text{Sells}}{\text{Average supply}} \\
 &= \frac{\text{Rp29.064.727}}{\text{Rp3.819.500}} \\
 &= 7,6 \text{ Kali}
 \end{aligned}$$

3. Calculate the rotation time of each element of working capital, using the formulation as follows:

$$\begin{aligned}
 \text{a. Cash turnover time} &= \frac{365}{\text{Cash turnover}} \\
 &= \frac{365}{1,5} \\
 &= 238,7 \text{ Hari (p)} \\
 \text{b. Inverntory turnover time} &= \frac{365}{\text{supply turnover}} \\
 &= \frac{365}{7,6} \\
 &= 48 \text{ Hari (r)}
 \end{aligned}$$

To calculate the total velocity of working capital turnover, divide the turnover period with the results of the total rotation time of each element of working capital (cash and inventory) with the following formulation:

$$\text{Total turnover speed} = \frac{365}{p + r}$$

Where: p=cash turnover speed which is 238,7 days

r=inventory turnover speed which is 48 days

Thus, total turnover speed of working capital is as follows:

$$\text{Total turnover speed} = \frac{365}{246,3 + 48}$$

$$= 1,5 \text{ Kali}$$

Furthermore, to calculate the working capital with the method of working capital turnover, one must consider the forecast of income at the next harvest period. This income forecast is used to estimate the income that will occur in the next harvesting period, in the business of rattan Batang, it is assumed that the sales forecast is the same as the previous production, with the amount of Rp. 29,064,727. Therefore, the working capital needs for further production can be calculated using the Working Capital Turn Over (WCTO) method calculated as follows:

$$\text{Working Capital Needs} = \frac{\text{Sells (forecast)}}{\text{Working Capital Turnover}}$$

$$= \frac{\text{Rp}29.064.727}{1,5}$$

$$= \text{Rp. } 19.615.945$$

So, based on calculations using the Working Capital Turn Over (WCTO) method, the working capital requirements for the next production = Rp. 19,615,945. Based on the analysis of working capital needs above, it can be determined that the working capital needs of rattan Batang business farmers using the method of working capital are as follows:

The working capital needs divided by the working capital bound period of Rp. 19,615,945 / 246.3 days = Rp 79,629.00 / day

The comparison of the working capital needed with the working capital available in this period is that the need for working capital in the next harvest period is based on the results of the analysis using the working capital turnover method of Rp. 19,615,945 while the total working capital available in production is Rp. 19,010,000 so that the next difference in working capital is Rp. 605,945. Thus, it can be seen that the amount of working capital available in the current period cannot meet the needs of the next period of working capital based on the results of the analysis of working capital requirements, and experiences a shortage of Rp605,945.

To assess the level of efficiency of working capital issued by rattan farmers, the researchers present the use of working capital by studying four other types of rattan.

1. Rattan Lambang can be harvested from the age of 15 years to the age of 45 years. However, optimum production is achieved at 33 years old. With the selling price of rattan Lambang as much as Rp.1,900/kg, the total sales received from the business of the rattan Lambang can be seen in the table below.

Table 3.  
Rattan Lambang Sales (Rp/Ha/Thn)

No	Age (years)	TP (Kg/ha)	Price (Rp/Kg)	Sells (Rp/Kg/Ha)
1	15	4.940	1.900	9.386.000
2	18	6.100	1.900	11.590.000
3	21	7.360	1.900	13.984.000
4	24	8.740	1.900	16.606.000
5	27	10.340	1.900	19.646.000
6	30	12.540	1.900	23.826.000
7	33	13.800	1.900	26.220.000
8	36	14.720	1.900	27.968.000
9	39	15.450	1.900	29.355.000
10	42	16.100	1.900	30.590.000
11	45	16.450	1.900	31.255.000

The table shows that the rattan Lambang can be harvested from the age of 15 years to 45 years with a total production ranging from 4,940 (kg/ha) to 16,450 kg/ha. With a selling price of Rp.1,900/Kg, one will get a gross income as in that table.

2. Rattan Pahit can be harvested from the age of 15 years to the age of 45 years. However, optimum production is achieved at the age of 33 years. With the selling price of rattan Pahit of Rp.1,800/kg, the total sales received from rattan Pahit exploitation can be seen in the table below.

Table 4.  
Rattan Pahit Sales (Rp/Ha/Thn)

No	Age (Thn)	TP (Kg/ha)	Price (Rp/Kg)	Sales (Rp/Ha/Thn)
1	15	3.280	1.800	5.904.000
2	18	4.040	1.800	7.272.000
3	21	4.900	1.800	8.820.000
4	24	5.800	1.800	10.440.000
5	27	6.880	1.800	12.384.000
6	30	8.340	1.800	15.012.000
7	33	9.180	1.800	16.524.000
8	36	9.800	1.800	17.640.000
9	39	10.150	1.800	18.270.000
10	42	10.450	1.800	18.810.000
11	45	10.700	1.800	19.260.000

The table shows that rattan pahit can be harvested from the age of 15 years to 45 years with a total production ranging from 3,280 (kg / ha) to 10,700 kg / ha. With a selling price of Rp. 1,800 / kg, a gross income can be obtained as in the table.

- Rattan Tohiti can be harvested from the age of 15 to 45 years. However, optimum production is achieved at the age of 33 years. With rattan Tohiti's selling price of Rp. 2,000 / kg, the total sales received can be explored in the table below.

Table 5.  
Rattan Tohiti sales (Rp/Ha/Thn)

No	Age (Thn)	TP (Kg/ha)	Price (Rp/Kg)	Sales (Rp/Ha/Thn)
1	15	3.800	2.000	7.600.000
2	18	4.640	2.000	9.280.000
3	21	5.640	2.000	11.280.000
4	24	6.680	2.000	13.360.000
5	27	7.920	2.000	15.840.000
6	30	9.600	2.000	19.200.000
7	33	10.560	2.000	21.120.000
8	36	11.280	2.000	22.560.000
9	39	11.760	2.000	23.520.000
10	42	12.100	2.000	24.200.000
11	45	12.400	2.000	24.800.000

The table shows that the rattan Tohiti can be harvested from the age of 15 years to 45 years with a total production ranging from 3,800 (kg/ha) to 12,400 kg/ha and with a selling price of Rp. 2,000 / kg, gross revenue is obtained as shown in the table.

- Rattan Noko can be harvested from the age of 15 to 45 years. However, optimum production is achieved at the age of 33 years. With the selling price of rattan Noko Rp. 2,000 / kg, the total sales received from Noko rattan can be seen in the table below.

Tabel 6.  
Rattan Noko sales (Rp/Ha/Thn)

No.	Age (Thn)	TP (Kg/ha)	Price (Rp/Kg)	Sales (Rp/Ha/Thn)
1	15	3.120	1.700	5.304.000
2	18	3.820	1.700	6.494.000
3	21	4.600	1.700	7.820.000
4	24	5.460	1.700	9.282.000

5	27	6.480	1.700	11.016.000
6	30	7.840	1.700	13.328.000
7	33	8.640	1.700	14.688.000
8	36	9.230	1.700	15.691.000
9	39	9.610	1.700	16.337.000
10	42	9.810	1.700	16.677.000
11	45	9.980	1.700	16.966.000

The table shows that rattan Noko can be harvested from the age of 15 years to 45 years with the total amount of production starting from 3,120 (kg/ha) to 9,980 kg/ha and with a selling price of Rp.1,700 / kg, the gross income obtained as in the table.

Based on the data presented, the working capital needs of the rattan farming business in 5 different types of rattan cultivated displays the use of working capital, income, and the time needed within the same harvesting period.

The rattan Batang harvest exercises the working capital of Rp.19,615,945, with the net profit of Rp.19,010,000, per hectare. Rattan Lambang needs a lower working capital at Rp.17,063,318 with relatively lower profits of Rp.13,243,818 per hectare per harvest. Rattan Pahit utilizes the working capital of Rp. 10,511,318 with a profit of Rp.6,691,818. Rattan Tohiti uses the working capital of Rp. 13,869,409 with a profit of Rp.10,049,909. Rattan Noko requires the working capital of Rp.9,294,318 with a profit of Rp.5,474,818 per hectare per harvest.

## CONCLUSION

Based on the results of research and discussion, it can be concluded that in the rattan farming business, the average production for the type of rattan Batang reaches 14,532 kg/ha with an average sales result reaching Rp29,064,727. Consecutively, the type of rattan Lambang produces an average of 11.504 kg/ha with the average sales results of Rp. 21,856,909, rattan Pahit reached 7593 kg/ha with an average sales result of Rp. 13,666,909, rattan Tohiti reached 8762 kg/ha with average sales results of Rp. 17,523,636, and rattan Noko reached 7145 kg/ha with an average sales result of Rp12,145,727.

Rattan Batang business exercises the working capital of Rp. 19,615,945 with a net profit of Rp. 19,010,000 per hectare per harvesting period. As for the type of rattan Lambang, the need for working capital per harvest is lower at Rp. 17,063,318 with relatively lower profits of Rp.13,243,818. The rattan Batang business also managing the working capital of Rp.10,511,318 with a profit of Rp.6,691,818. The rattan Tohiti business uses the working capital of Rp.13,869,409 with a profit of Rp.10,049,909. The working capital requirement for the type of rattan Noko amounted to Rp.9,294,318 with a profit of Rp.5,474,818. The study showed that the difference between working capital and combining net profit of rattan Batang is Rp.605,945, while the types of rattan Lambang, rattan Pahit, rattan Tohiti, and rattan Noko had the same amount of difference of Rp3,819,500.

This study recommends the rattan farmers to prioritize the types of rattan Batang to be planted since, in addition to producing greater total production and greater profits, it is also very much demanded by the industry, especially the processed wood. Rattan industry and business should pay attention to the working capital turnover to avoid the excess or shortages of working capital. Rattan has a strategic value in fulfilling the raw materials for the furniture industry, which presents the rattan business as a very essential and beneficial business. Therefore, to avoid the lack of working capital, rattan farmers should take loans from banks or other financial institutions.

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