CHAPTER IV
RESULTS AND DISCUSSION

A. Company's History

1. Company History

PG Kebon Agung Malang was built in 1905 by a Chinese named tan Tjwan Bie. This factory is located 5 kilometers at the south of Malang city, in Kebon Agung village, Pakisaji sub district, Malang regency. The form of the corporation at that time was an individual corporation.

In 1957 PG Kebon Agung was sold to Javasche Bank which is now known as Bank Indonesia. The management was given to N.V Handel and Landbouw Maatschappij Tiedman Van Kerchmen (TVK). Later, the management was handled by Retirement Fund Foundation and Annuity of Bank Indonesia. The corporation form, then, changed from N.V into Inc. and both acted as the owner and the only stakeholder. The management was Tiedeman Van Kerchen Firm. With enough investment followed by a desire to raise the production outcome, the reparation or rehabilitation was begun for the development of the company.

In the beginning of production in 1908, PG Kebon Agung produced Musvokado sugar -that is brown sugar with a poor quality- because the process system used was still modest at that time. The capacity of production was 8000 pikols of sugar cane or thereabouts 5000 quintals per day. In 1913, the capacity of production increased to 10000 pikols per day and the quality of sugar rose to Hoofsuiker (HS) with the process that directed to sulfitation

system. Because of the implementation of RPM in 1917, the quality of production produced by PG Kebon Agung was included into WCS (White Crystal Sugar) category. In 1988, the package which at first used 100 kg sunny-sack lifted by man power, was changed into 50 kg plastic sack which the transportation and accumulation were done by conveyor.

For the establishment of harmonious climate in the work relationship, the job which was represented by SPSI work unit of PG Kebon Agung with the Direction of PT Kebon Agung as the manager made a Collective Work Agreement (CWA) which is now called as Collective Work Treaty (CWT). It arranged every both right and obligation of work and entrepreneur, and also social insurance for the worker which was renewed once in two years.

2. Vision, Mission, and Goals of PG Kebon Agung Malang

1. Vision

   The vision is to fulfill the national need of sugar in the tightness of sugar industry competition and to raise the efficiency and the income of farmers and sugar factory.

2. Mission

   (a) To stabilize the partnership of farmers and sugar cane suppliers

   (b) Intensification and extensification of plants by expanding the area of Citizen's Sugar Cane and Private Sugar Cane

   (c) To raise the capacity of grind and to change the machines/tools which are not efficient anymore to be used so that the capacity of grind can increase gradually

(d) To develop and raise the quality of human resources

3. Goals

The goals PG Kebonagung are stated below :

(a) Long term goals

The long term goals of the company are :

(1) Geting a maximal profit with a minimal cost

(2) Maintaining and raise the continuity of company

(3) Organizing a marketing expansion of the outcome

(b) Short terms goals

The short terms goals of the company are :

(1) Reaching the production level correspond to the production plans had been reached

(2) Raising the fluency of production process

(3) Keeping the quality of production

3. Company's Location

The location choice of a trade is an important thing for the company in the effort of bringing themselves nearer to the consumer. It also influences the life of the company in the competition and it determines the viability of the company in the future.

PG Kebon Agung is located at Kebon Agung village, Pakisaji sub district, Malang regency, for about 480 meters above the sea level, 5 km on the south of Malang city, between the main road of Malang and Blitar.

3. Company's Logo

Picture 1 Logo of PG Kebon Agung Malang

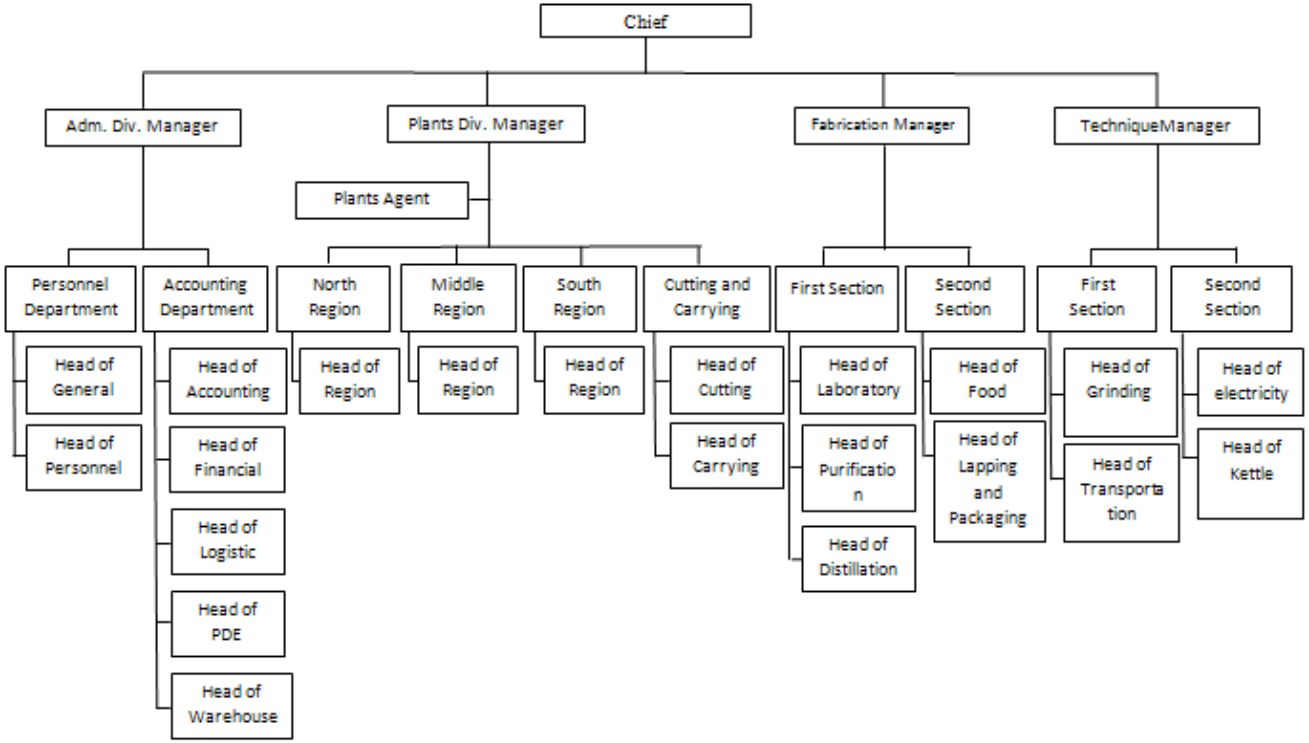
Source : PG Kebon Agung

4. Organizational Structure

The organizational structure is a framework of cooperation from various parts of the pattern, which means the preparation of a logical order and harmonious relations.

So, in an organization there is a framework that shows all the work tasks to achieve organizational goals, relationships between the functions and powers and responsibilities of each member organization.

The organizational structures on PG Kebon Agung Malang for Periode 2012 can be seen in Figure as follows:



Picture 2 Organizational Structure of PG Kebon Agung Malang

Source: Managed Data – Personnel Department PG Kebon Agung Malang

The jobs, authorities, and responsibilities of every division in organization structure of PG Kebon Agung Malang are:

1. Chief

   Chief is the general official who has responsibility about the company. The authorities and the responsibilities of a chief are:

   (a) Implementing the policy and work order, and the work procedure that has been agreed by the director.

   (b) Justifing the head of division to the director.

   (c) Maping out the work and develop the sugar cane area in order to raise the factory's production.

   (d) Implementing the monitoring and control of work realization to all of divisions in the company.

2. The Manager of Administration Division

   The jobs of Manager of Administration Division are:

   (a) Maping out the financial distribution, monitor the realization, and do the variable analysis.

   (b) Implementing the receipt, expense, and saving of company's fund

   (c) Collecting and managing the budget of each division in the company

   The Manager of Administration is helped by some departments, they are:

   (a) Accounting Department

   The jobs are:

   (1) Doing the accounting data management to produce financial information for people who need it.

(2) Doing the verification of documents as the base of expense from the company

(3) Implementation the accounting policy which has been applied by the director and related requirements which have been defined by the administration.

(b) Personnel Department

This department has jobs to finish the work technique in respect of labor and general, coordinate the work of administration and personnel, calculation of salary and wage and also social insurance for the workers.

3. Plants Management Division

The jobs of Plants Management Division are:

(a) Making operational plan of Plants Department

(b) Managing the sugar cane planting with a good technique in order to guarantee the maximal outcome by the economic cost.

(c) Formulating the plan and strategy of the upgrading of sugar cane quality and amount from the company

Plants Management Division consists of :

(a) Plants agent

Its jobs are to map out and do the strategy of the upgrading of sugar cane quality and amount from the company.

(1) North, Middle, and South Region Guiding Department.

Planning and finishing the matter of sugar cane planting, they are the beginning of planting, the maintenance, and harvest time in each area.

(2) Cutting and Carrying Receipt Department.

Planning the transportation medium at the receipt and the transportation of sugar cane to the factory.

4. Manager of Fabrication Division

The jobs of this division are :

(a) Making and plan the production activity has been agreed.

(b) Managing the activation of management devices in order to get the maximal outcome and an efficient sugar packaging.

(c) Managing laboratory activities in order to guarantee the maximal outcome with the wanted quality.

Fabrication Division consists of some departments :

(a) First Section

(1) Laboratory Department

Being responsible of the supplying of chemical substance, the working of tools and the maintenance of laboratory tools.

(2) Purification Department

Being responsible in organizing and monitoring the purification of sugar

(3) Distillation Department

Being responsible in organizing and monitoring the process of distillation in the distillation station.

(b) Second Section

(1) Food Department

Being responsible in organizing and monitoring the process of cooking in the cooking station.

(2) Lapping and Packaging Department

Being responsible in organizing and monitoring the process of lapping and sugar packaging

5. Manager of Technique Division

Manager of technique division has jobs, authorities, and responsibilities as stated below :

(a) Making the plan of reparation and maintenance of all factory's machines and tools.

(b) Runing the reparation and maintenance plan which has been agreed with the maximal work and maintenance and economic cost.

(c) Organizing the administration activities and coordinate all activities in technique division.

Technique division consists of some departments, they are:

(a) First Section

(1) Grinding Sub Division

(1.1) Being responsible of the fluency of work in the grinding station

(1.2) Making the report of the activities has been done and the upcoming activities to the head of First Section.

(2) Transportation Sub Division

(2.1) Receiving the report of damage and to manage the checkup of vehicles owned by the factory

(2.2) Receiving the report of reparation work of the vehicles which has been done

(b) Second Section

(1) Electricity Sub Division

(1.1) Being responsible of the fluency of work in the electricity station and to report it to the head of First Section

(1.2) Monitoring directly all the works done in the electricity station

(2) Kettle Sub Division

(2.1) Being responsible of the fluency of work in the kettle station and report it to the head of Second Section

(2.2) Monitoring directly all the works done in the kettle station

6. Labor

Withdrawal of non staff workers are taken from the area around the company began elementary, junior, and SMU. Specialty for staff labor, educated first at the Lembaga Pendidikan Perkebunan (LPP) in Yogyakarta. Labor expert staff besides just given training and courses that aim to improve the skills of employee. The following job description is:

1) Head Employee

   Employee who occupy positions that managers or staff.

2) Executor Employee

   That employee who perform duties or authority and instructions of the leader. Executive employees are divided into two, there are:

   a) Fix Employee

      Is employees hired for a long time until time of pension.

   b) Unfixed Employee

      Employee hired at any given time according to the needs of the company. Were paid daily wages, monthly, and wholesale, unfixed staff are divided into four, there are:

      - Planting Season Employee

        There job preparing the opening up of land to be planted of cane ready for planting

      - Campaigns Employee (Milled)

Workers who work from the beginning of cane transported up into sugar.

- Freelance Employee

  Workers who perform incidental relations firm when needed. Employment usually not more than 3 months.

- Wholesale Employee

  Workers who do the work are bulk.

Table 1
Data on Amount of Employee at PG. Kebon Agung 2011

Job Position	Staff Employee	Employee		Amount
		Fixed	Campaign	
Director	1	0	0	1
Administration	9	60	13	82
Plant	16	39	96	154
Technique	13	313	246	572
Fabrication	6	28	263	297
Total	45	440	618	1103

Source: PG. Kebon Agung Malang, 2011

The quality of the employees can be seen from the education factor. The following shown levels of employees at PG. Kebon Agung Malang.

Table 2

Education Level of Employees at PG. Kebon Agung Malang 2011

Job Position	Education	Amount
Director	Bachelor	1
Plant Manager	Bachelor	1
Admin. Manager	Bachelor	1
Technique Manager	Bachelor	1
Factory Manager	Bachelor	1
Plants	SMA	571
Administration	SMA	81
Technique	SMA	150
Fabrication	SMA	296
Amount		1103

Source: PG. Kebon Agung Malang, 2011

7. Marketing Area and Distribution Channels

Marketing are covers the whole of Indonesia and is no longer handled by DOLOG. Distribution channels PG. Kebon Agung is as follow:

PG. Kebon Agung ⟶ Wholesaler ⟶ Retailer ⟶ Consumer

If wholesaler want to buy sugar, must first register with the office directors Surabaya, the next board will issue a warrant expenditures called Delivery Order (DO). After that sugar can be taken at PG. Kebon Agung Malang. But part of farmers for sugar will be sold by way of auction, held in the PG. Kebon Agung at predetermined time, usually once a week.

8. Product

Beside the SHS sugar as the main product, PG Kebon Agung also produces some other product, they are :

1. Molasses

   The final liquid which has very low sugar concentrate and the sugar is difficult to be taken. Later, this liquid can be used to make alcohol.

2. Residue

   It is a solid waste can be used as cattle fuel and substantial substance of particle board. Besides, it can be used as raw material to produce paper, plastic, and board.

3. Blotong

   It is the elimination of nira that can be used as fertilizer.

From the three of products, which is included as revenue of the company is only molasses. Calculation ABC system will calculate the products that generate revenue for the company, namely sugar and molasses.

9. Production Process

The production process is the company's activities to produce goods or services, also conduct other activities associated with producing the goods or services. Production process in sugar manufactured are generally seasonal, so depending on the cane harvest season. Cane harvesting season usually called time of milled. At the time of this milled production activities carried out intensively. Activity of production process at PG. Kebon Agung is divided into two, namely:

a. Activities in time of milling

At the time of milling, production began in late May or early June until the end of November or early December, the length of the ground ranged from 160 – 190 days. Companies work continuously for 24 hours/day until the milled finish. Milled future activities are divided into three shifts, there are:

Shift	House of Work
I	05.00-13.00
II	13.00-21.00
III	21.00-05.00

The division of labor time is only applicable to employees of the fabrication and engineering parts. For parts of the plant and TUK applies general working hours 7.00 am to 3.00 pm at the 1 hour break.

b. Activities Outside the Milled

Milled during the off season, production activities do not take place. The company's activities are concentrated on dismantling, repair damage that may occur and maintenance of machinery and equipment to preparation for the next milled. Activities of outside the milled are divided into

Table 3 Schedule of Employee Work Hours

Days	House of Work	Break
Monday - Thursday	07.00 – 11.30	11.30 – 12.30
	12.30 – 15.00	
Friday	07.00 – 11.00	11.00 – 13.00
	13.00 – 15.30	
Saturday	07.00 – 12.30	

Source: PG. Kebon Agung Malang, 2011

The materials used in the sugar production process consist of:

1. Raw Materials

   The raw materials used is cane derived from cane kind of Tebu Rakyat Indonesia (TRI) amounted 98% and Tebu Sendiri (TS) amounted 2%. TRI kind of raw material acquisition came from farmers coordinated by KUD which is in the company's work.

2. Indirect Materials

   Indirect materials used include:

   - Lime, used for solvent of lime milk and used the sap nira purification station
   - Sulfur, used for making process on SO_2 sulfitation process
   - Water, used to rinses the cane at the mill.

3. Machine and equipment

   1) Preparations

a) Travelling crane is a tool to transport sugar cane that is run by using the motor.

b) Weigher (timbangan)

2) Mill station

a) Cane cutter is cane cutting tool..

b) Cane carrier (mesin krepyak), to bring cane to cane cutter.

c) Cane table (meja tebu) is the place while sugar cane before the cane cutter (pisau pemotong tebu).

d) Unigator is the counter sugar cane became more refined.

e) Gilingan is a device for milking the cane thus produced nira or dregs.

f) DSM is the cane filter tool.

g) Door clone is sand separator with nira before purification process of the kettle.

h) Baggase carrier, to bring the dregs gilingan into a kettle..

i) Baggase reclaimer, to arrange deficiency and excess dregs in a kettle.

3) Purification station

a) Boulogne weigher, to weighing raw nira.

b) Juice beater, as nira heater.

c) Defekator, as a blending of the raw milk of lime and nira $Ca(OH)_2$.

d) Sulfitrasi tank is the neutralization tank Ph order to 7,2.

e) Rotary vacuum filter is a device that separates a mixture of dirty nira, refined dregs, and $Ca(OH)_2$.

f) Single tray clarifer is a machine that services to separate the clear nira with nira dirty.

g) Filtrate pump is a device used to help drive the rotary vacuum filter.

4) Evaporation station

a) Evaporator is a machine that serves to evaporation of water being stored in the clear nira to become condensed nira.

b) Kondensor is a machine for heights condensing water vapor.

c) Sap vanger is a tool for capturing the spark of nira boiling.

d) Condensate pump, to pump water out of the evaporator.

e) Condensate nira pump, pumping nira into the tank to give SO2 sulfitration to give color to pale nira.

f) Steam pipe.

5) Cuisine station

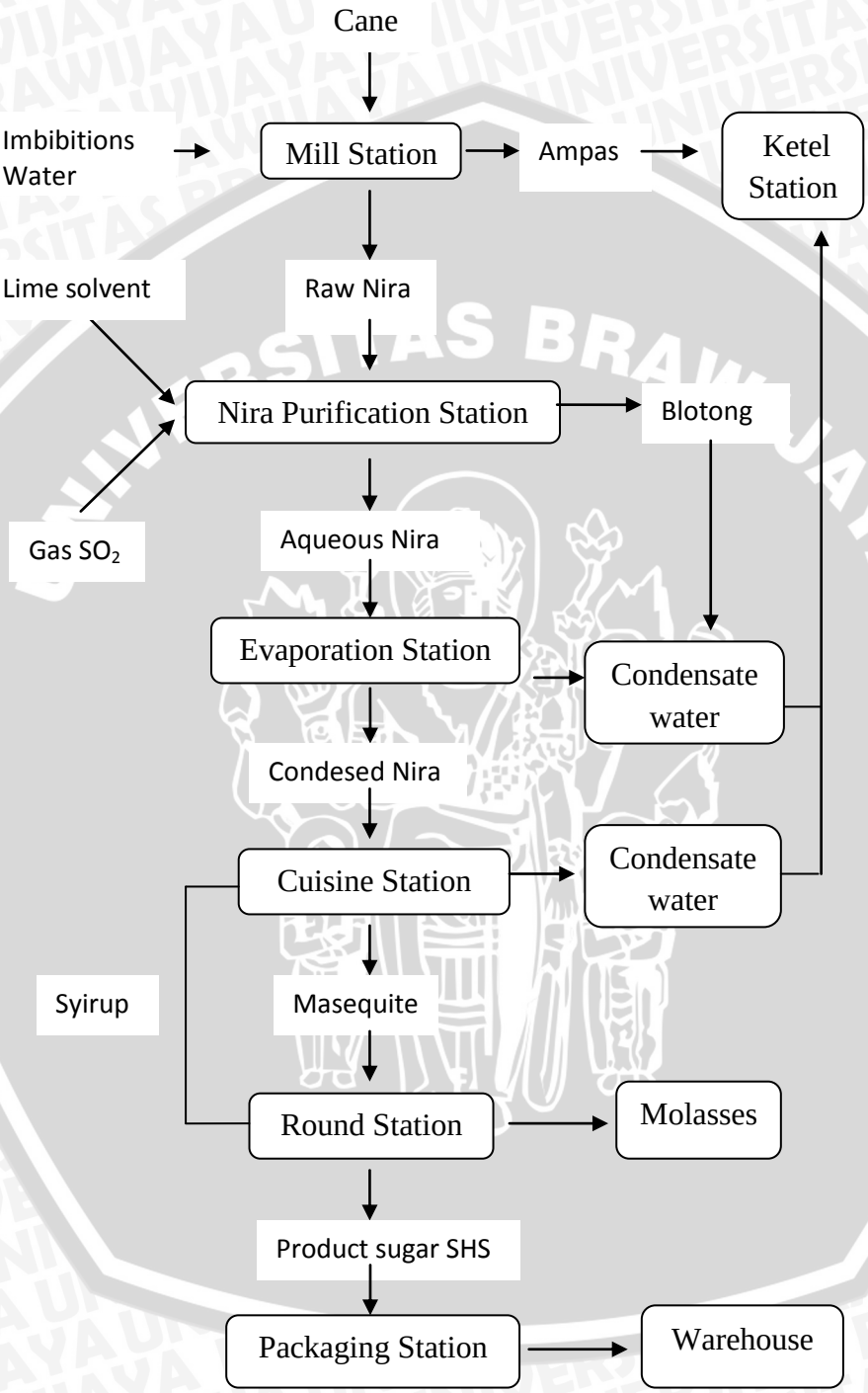
a) Vacuum pan cuisine is a machine for crystals raising sakrosa to be a certain size.

6) Round station

a) Bucket elevator is a machine to separate the normal sugar , refined sugar, and pebbles sugar.

b) Rapid cooler

c) Centrifugal machine



Picture 3 Production Process at PG. Kebon Agung Malang
Source: PG Kebon Agung Malang, 2011

Part of the Process Description:

Process manufacture of sugar worked through several stations and several stages, there are:

1. Mill Station

   Mill station is the first process in the production of sugar. In this station cane milled to obtain raw sap possible. In this milking need to be added water ambibisi in order that sugar content who still exist in the dregs will soluble so that dregs the end of expected contain sugar content as low as possible, obtained in addition to the raw nira, in this process is also obtained finel dregs which is used as fuel in ketel station to produce of steam.

2. Purification of Nira Station

   The purpose of the purification station is to separate non sugar impurities contained in the raw nira, in order to obtain the so called clean nira or nira clear watery nira. In addition, clear nira in the process also get called blotong solids can be recycles into organic fertilizer. Purify nira in this nira purification station used sulfitasi system, so that the chemicals used is a solution of lime and SO_2 gas from combustion of solid sulfur.

3. Evaporation Station

Aqueous nira purification process results still contain lots of water, so do the evaporation of water to obtain a condensed nira with a certain viscous nira with a certain viscosity, addition results in the evaporation process is condensate water which is used as bait in the ketel station.

4. Cuisine station

   In the crystallization process is done cooking station, which took over the thick nira sugar as much as possible to be crystals of a certain size that you want. The process crystallization will receive crystal sugar solution called masecuite, as well as the byproduct obtained in the form of condensate water which is used as bait in the ketel station.

5. Round station

   Round station conducted screening process, masecuite, which aims to separate the sugar crystals from syrup solution. In this process will be obtained sugar product of Sugar High Super (SHS) and byproduct of molasses.

6. Packaging station

   In packaging station was packaging product sugar of SHS with plastic bags each weighed 50 kg.

7. Warehouse

   Products sugar of SHS that have been packed will be saved in sugar warehouse.

B. Presentation of Data

Statements of financial position (balance sheet), net income and cost of goods solds statement at PG. Kebon Agung Malang period ended December 31, 2011 is as follows:

PG KEBON AGUNG
STATEMENTS OF FINANCIAL POSITION
December 31, 2011

Description	
ASSETS	
CURRENT ASSETS:	
Cash and cash equivalents	75.109.624.508
Trade Receivables	71.648.508.910
Other Account Receivables	94.897.537.764
Taxes Receivables	12.930.764.864
Inter Entity Receivables	18.664.353.130
Inventories of Material/ Supplies	209.621.794
Inventories of finished goods	517.218.462
Production cost for one year ahead	70.741.392.629
Prepaid expenses	1.626.223.915
Accrue revenue	145.530.000
Total Current Assets	**346.490.775.976**
NON CURRENT ASSETS:	
Deffered Tax Assets	27.209.265.973
Investment	4.851.062.008
Fixed Assets acquisition costs	541.368.904.625
Accumulated Depreciation	(190.792.374.677)
Book value	282.636.857.929
Assets in Progress	21.802.776.386
Intangible Assets	15.648.583.807
Other Assets	72.990.277.387
Total Non Current Assets	**493.078.495.509**
TOTAL ASSETS	**839.569.271.485**

Picture 4 Balance Sheet PG Kebon Agung Malang Period December 31, Years of 2011 (rupiah)

PG KEBON AGUNG
STATEMENTS OF FINANCIAL POSITION
December 31, 2011

LIABILITIES AND EQUITY	
CURRENT LIABILITIES	
Trade Payable	8.098.545.990
Others Payable	95.064.378.669
Taxes Payable	42.045.229.183
Inter Entity Liabilities	9.156.972.607
Accrued Expenses	20.655.671.318
Matured Long Term Liabilities	75.826.840.680
Total Current Liabilities	**250.847.638.447**
NON CURRENT LIABILITIES	
Others Payable	10.819.914.658
Bank Loan	30.532.406.000
Post Employment Benefit	60.345.439.458
Total Non Current Liabilities	**101.697.760.116**
EQUITY	
Capital Stock	150.000.000.000
Donations Capital	5.061.504.138
Retained Earnings	331.962.368.784
Total Equity	**487.023.872.922**
TOTAL LIABILITIES AND EQUITY	**839.569.271.485**

Picture 5 Balance Sheet PG Kebon Agung Malang Period December 31, Year of 2011 (rupiah)

PG. KEBON AGUNG
Notes to Financial Statements

RETAINED EARNINGS	**2011**	**2010**
General reserves	260.470.480.082	197.789.235.881
Adjustment of retained earnings	(10.619.940.521)	(10.093.880.103)
Current year profit	82.111.829.223	72.775.124.374
Total	331.962.368.784	260.470.480.082

Transaction affecting the change in retained earning are:

Adjustment of Retained Earnings, year of51 2011	
Dividend distribution	6.871.000.000
Partnership program	2.716.000.000
Community development program	1.032.940.521
Total	10.619.940.521

Picture 6 Details of Retained Earnings on Balance Sheet PG Kebon Agung Malang December 31, 2011 (rupiah)

Table 4 Income Statement PG Kebon Agung Malang Period December 31, Year of 2011 (rupiah)

Description	Budget 2011	Realization 2011
Net Sales	**713.825.153.253**	**713.342.078.952**
Cost of Goods Sold	**(380.799.941.292)**	**(379.403.837.133)**
Gross Profit	**333.025.211.961**	**333.938.241.819**
Operating Expenses	(233.074.536.178)	(232.917.644.587)
Other operating income	10.548.128.462	10.143.298.576
Other operating expense	(3.584.692.583)	(3.402.636.391)
Income from Operation	**106.914.111.662**	**107.761.259.408**
Other income	1.637.374.380	1.721.179.555
Other costs	-	-
Income Before Tax	**108.551.486.042**	**109.482.438.963**
Income Tax Expense	**(27.137.662.354)**	**(27.370.609.740)**
Income For The Year	**81.413.823.688**	**82.111.829.223**

Source: PG. Kebon Agung Malang, 2011

Table 5 Cost of Goods Manufactured Statement Realization and Budget of PG. Kebon Agung Malang Period Desember 31, Year 2011 (rupiah)

Description	Amount of Budget	Amount of Realization
Raw material	92.025.530.778	91.750.563.376
Direct labor	30.850.765.450	30.436.932.678
	122.876.296.228	**122.187.496.054**
Manufacturing overhead:		
Indirect materials	25.334.350.596	25.304.252.596
Indirect labor	17.500.884.755	17.510.686.755
Fuel	21.713.170.272	21.703.170.271
Logging and transport	28.856.877.390	28.856.879.391
Office equipment	21.721.682.932	21.751.584.932
Electricity, telephone, & water	8.500.834.035	8.480.924.035
Insurance	1.515.300.782	1.515.384.781
Machine repair	39.303.979.860	39.323.875.861
Vehicle repair	3.626.630.463	3.616.731.463
Building repair	16.037.820.877	16.047.741.877
Machine depreciation	40.794.819.199	40.794.919.195
Vehicle depreciation	987.090.160	987.290.172
Building depreciation	31.282.309.390	31.282.309.382
Total manufacturing overhead	257.175.750.711	257.175.750.711
Total manufacturing cost	**380.052.046.939**	**379.363.246.765**
Add: Beginning work in process inventory		
Sugar	133.340.184	133.340.184
Molasses	100.005.605	100.005.605
Deduct: Ending work in process inventory		
Sugar	(70.656.896)	(69.294.873)
Molasses	(128.254.965)	(128.690.479)
Total Cost of Goods Manufactured	**380.086.480.867**	**379.398.607.202**
Add: beginning finished good inventory		
Sugar	755.866.233	645.679.133
Molasses	277.685.564	168.557.992
Deduct: Ending finished good inventory		
Sugar	(705.836.210)	(605.567.897)
Molasses	(114.255.162)	(203.439.297)
Total Cost of Goods Sold	**380.299.941.292**	**379.403.837.133**

Source: PG. Kebon Agung Malang year, 2011

1. Data of production

During of the year 2011, PG. Kebon Agung Malang can produces sugar and molasses (tetes) as 630.220 kuintal (ku). The following table list the amount of production PG. Kebon Agung Malang in 2011: The following information about the budget and the realization amount of PG. Kebon Agung Malang in 2011:

Table 6 Production Budget and Realization PG. Kebon Agung Malang in 2011

Product	Budget (ku)	Realization (ku)
Sugar	391.760	374.510
Molasses	247.680	255.710
Total Production	639.440	630.220

Source: PG. Kebon Agung Malang, 2011

2. Machine Hours

The following use of machine hours PG. Kebon Agung Malang

Table 7 Machine Hours Budget and Realization PG. Kebon Agung Malang in 2011

Product	Budget (hours)	Realization (hours)
Sugar	10.125	10.075
Molasses	3.699	3.956
Total Production	13.824	14.031

Source: PG. Kebon Agung Malang, 2011

3. Raw Material Cost

Raw material costs is material costs that are directly used to produce the finished product. The primary raw material of PG. Kebon Agung Malang is cane. Raw material cost of the plant PG. Kebon Agung is as follows:

Table 8 Raw Material Budget and Realization PG. Kebon Agung Malang in 2011 (rupiah)

Product	Budget	Realization
Sugar	82.775.675.950	82.575.507.039
Molasses	9.249.854.828	9.175.056.337
Total cost of raw material	92.025.530.778	91.750.563.376

Source: PG. Kebon Agung Malang, 2011

Raw material costs for sugar and molasses are based on units produced. Raw material costs for sugar and molasses is obtained by dividing the number of units produced by each product with total production and multiplied by the total cost of the raw material (plants). It is caused the raw material to produce sugar and molasses are the same with cane.

4. Direct Labor

Direct labor costs are costs incurred to pay the labor are directly related with production process. Direct labor costs PG. Kebon Agung Malang is as follows:

Table 9 Cost of Direct Labor Budget and Realization PG. Kebon Agung Malang in 2011

Product	Budget	Realization
Sugar	27.298.297.675	27.088.375.568
Molasses	3.552.467.775	3.348.557.110
Total Cost of Direct Labor	30.850.765.450	30.436.932.678

Source: PG. Kebon Agung Malang, 2011

5. Direct labor hours

Budget and realization amount of labor hours for each product in 2011 are as follows:

Table 10 Direct Labor Hours Budget and Realization PG. Kebon Agung Malang in 2011

Product	Budget	Realization
Sugar	618.240	617.980
Molasses	551.040	543.980
Total Hours Direct Labor	1.169.280	1.161.960

Source: PG. Kebon Agung Malang, 2011

6. Kilometer usage

The following will be presented supporting data concerning use of kilometres PG. Kebon Agung Malang. Use of kilometers is an output that is identified to fulfil shipping activity a product.

Table 11 Budget and Realization of Kilometers Usage PG. Kebon Agung 2011

Product	Budget	Realization
Sugar	87.000	86.750
Molasses	38.000	32.000
Total Kilometers usage	125.000	118.750

Source: PG. Kebon Agung Malang,2011

7. Factory Overhead Costs

Factory overhead costs of PG. Kebon Agung is all production costs other than the cost of raw material and direct labor. These costs consisted of indirect labor costs, indirect materials, production costs and other indirect. Budget and realization of factory overhead costs PG. Kebon Agung Malang in 2011, there on page 50 (table 5).

Factory overhead rate is calculated by dividing factory overhead costs with total amount of production.

$$\text{Factory overhead rates per unit} = \frac{\text{Rp. 257.175.750.711}}{639.440}$$

= Rp. 402.189,025883 / per unit (ku)

8. The Calculation of Cost of Goods Manufactured by Traditional Cost Accounting

After known the cost of raw materials, direct labor costs, and factory overhead, can be determined amount the cost of goods manufactured PG. Kebon Agung Malang with traditional cost accounting system. The calculation the cost of goods manufactured PG. Kebon Agung Malang with traditional cost accounting system for the year 2011 are as follows:

Table 12 Cost of Goods Manufactured PG. Kebon Agung Malang by Traditional Cost Accounting System in 2011 (rupiah)

Description	Sugar	Molasses	Total
Raw material Costs	82.575.507.039	9.175.056.337	91.750.563.376
Direct Labor Costs	27.088.375.568	3.348.557.110	30.436.932.678
Factory Overhead Costs	157.561.572.779	99.614.177.932	257.175.750.711
Total Production Cost	**267.225.455.386**	**112.137.791.379**	**379.363.246.765**
Beginning WIP Inventory	133.340.184	100.005.605	233.345.789
Ending WIP Inventory	(69.294.873)	(128.690.479)	(197.985.352)
Cost of Goods Manufactured	**267.289.500.697**	**112.109.106.505**	**379.398.607.202**

Source: processed data

Factory overhead costs are obtained by multiplying the realization amount of units sugar and molasses produced with overhead rate per unit.

C. Data Analysis and Interpretation

1. Cost of Goods Manufactured Based on ABC System

The calculation cost of goods manufactured based on traditional cost accounting can cause distortion costs. This occurs because the allocation of factory overhead based on amount of units produced. Thought not all factory overhead costs that occur are based on the amount of units produced.

ABC system is a calculation system of production costs the charge a fee based activities to produce a products. ABC system can be a solution to avoid the cost as in traditional cost accounting. It is the imposition of costs on the ABC system based on activities that occurred to produce a product. Each group incurred not only charged based units, but charged based on the cost driver of the group costs.

Imposition of factory overhead costs to products in activity based costing adjusted for the cost of the activity. The following ate procedure used in calculating the cost of goods manufactured is based on Activity Based Costing System (ABC System):

a. Activity Based Process Costing

The first procedure in implementing Activitty Based Costing (ABC System) is to classify costs into activity centers and determine the cost driver of the activity center. The procedure will be applied to the factory overhead cost data on PG. Kebon Agung Malang as follows:

1) Identify the various costs

The first stage in implementing the ABC system is to analyze the activity of identify resource costs and activities of the company. To identify the cost of resources on a variety of activities, it is need to classify

all activities according to how the activities consume resources. Classification of the activities are as follows:

a. Unit level activities is activities each time a unit of product produced and the size of the activity is influenced by the amount of units produced or conducted when a unit is produced.
b. Batch level activities is activities conducted each time of one batch product manufactured, the size of this activity is influenced by the amount of batch product manufactured.
c. Product level activities is activities conducted as required to support a variety of products manufactured by the factory.
d. Facility level activities is activities that support the production process in general. However more or less the activity is not related to the volume of products manufactured.

Classification of activities factory overhead costs PG. Kebon Agung Malang are as follows:

Table 13 Classification Activities of Factory Overhead Costs PG. Kebon Agung Malang

NO.	Level Activity	Type of Cost
1.	Unit Level Activity	Indirect Material
		Fuel
		Logging and Transport
2.	Batch Level Activity	Vehicle Repair
		Vehicle Depreciation
3.	Facility Level Activity	Machine repair
		Machine depreciation
		Building repair
		Building depreciation
		Office equipment
		Indirect Labor
		Electricity, telephone, & water
		Insurance

Source: processed data

The explanation classification of activities against factory overhead costs are as follows:

a) Indirect materials

Indirect materials are materials supporting main material in producing a product. The use of indirect labor are classified into activities of unit level because the use of indirect materials is influenced by the total amount of units produced.

b) Fuel

The fuel cost are costs incurred for the purpose of transporting raw materials purchasing for production purposes. Fuels are included in the unit level facilities.

c) Logging and transport

Logging and transport costs are the costs incurred for the purpose of cane permanent and transport of cane in order to the production process. Logging and transport are classified into unit level activities.

d) Vehicle repair

Vehicle repair conducted to maintain the condition of the vehicle company. This is done so that the vehicle is always ready when a company needs. Cost of repair the vehicle are classified in the batch level activities.

e) Vehicle depreciation

Vehicles factory depreciated each year, because the vehicle has the economic life as well as machinery and buildings. Depreciation of vehicles including bstch level activites.

f) Indirect Labor

Indirect labor required to help steady of production process. Indirect labor costs are included in the facility level activities.

g) Machine repair

Machine repair carried for the machine to continuous operation fluently and not damaged during the production process. Machine maintenance costs are classified in the facility level activities.

h) Machine depreciation

Factory machine have economic life that should depreciated each year. Depreciation of machines cost including facility level activities.

i) Building repair

Factory building repair is done to maintain the condition of the factory building. This raises the cost of building maintenance are classified into the activity of the facility level activities.

j) Building depreciation

Buildings are depreciated in each year, because the building has economic life as well as machines and buildings. Depreciation of building cost including facility level activities.

k) Office Equipment

Office equipment are costs incurred for office factory during the production process. Office equipment are included in the facility level activites.

l) Electricity, telephone & water

Electricity, telephone & water are the cost incurred by the company to meet the communication needs, water supply and plant lighting. Electricity, telephone and water are classified in facility level activities.

m) Insurance

Insurance is a cost incurred by the company to ensure the activities of employees in work. Insurance costs are classified in the facility level activities.

2) Allocate costs based on activities

The next step in the implementation of the ABC system is allocate costs based on activity. Calculations using the ABC system cost drivers for resource consumption in charge of resource to activities. This is because triggers activity costs used in the production process.

Raw material costs and direct labor costs are not traced to the activity because these costs have been attached to the product depends on the units produced. Costs are traced to each activity is factory overhead costs. The following classification of factory overhead costs PG. Kebon Agung Malang based on activities:

Table 14 Classification of Factory Overhead Costs for Activity, PG. Kebon Agung Malang (rupiah)

NO.	Level Activity	Type of Cost	Amount	Total
1.	Unit Level Activity	Indirect Material	25.334.350.596	
		Fuel	21.713.170.272	
		Logging and Transport	28.856.877.390	
		Amount		**75.904.398.258**
2.	Batch Level Activity	Vehicle repair	3.626.630.463	
		Vehicle depreciation	987.090.160	
		Amount		**4.613.720.623**
3.	Facility Level Activity	Office equipment	21.721.682.932	
		Electricity, phone & water	8.500.834.035	
		Insurance	1.515.300.782	
		Indirect labor	17.500.884.755	
		Machine repair	39.303.979.860	
		Machine depreciation	40.794.819.199	
		Building repair	16.037.820.877	
		Building depreciation	31.282.309.390	
		Amount		**176.657.631.830**
Total Factory Overhead Cost				**257.175.750.711**

Source: processed data

3) Determine the cost pool of homogeneus cost pool

In this step is clarified various overhead costs into homogeneus cost pool where each group consist of the costs depending on the cost driver. Cost driver is the cause of the factors that explain the overhead cost or overhead consumption. The following information about the classification of the cost into cost pool:

Table 15 Cost Driver and Cost Pool Factory Overhead PG. Kebon Agung Malang (rupiah)

Classification of Cost Pool	Cost Driver	Cost Pool	
Unit level activity			
Pool 1			
Indirect materials	Unit production	25.334.350.596	
Fuel	Unit production	21.713.170.272	75.904.398.258
Logging and transport	Unit production	28.856.877.390	
Batch level activity			
Pool 2			
Vehicle repair	Kilometer usage	3.626.630.463	
Vehicle depreciation	Kilometer usage	987.090.160	4.613.720.623
Facility level activity			
Pool 3			
Machine repair	Machine hours	39.303.979.860	
Machine depreciation	Machine hours	40.794.819.199	80.098.799.059
Pool 4			
Office equipment	Direct labor hours	21.721.682.932	
Indirect labor	Direct labor hours	17.500.884.775	
Electricity, phone & water	Direct labor hours	8.500.834.035	96.558.832.791
Insurance	Direct labor hours	1.515.300.782	
Building repair	Direct labor hours	16.037.820.877	
Building depreciation	Direct labor hours	31.282.309.390	
Total			**257.175.750.711**

Source: processed data

4) Cost Driver

There are will be seen information of cost driver which selected for the PG. Kebon Agung Malang :

a) Unit production

Cost objects charged in level unit of production because of the amount of produced by object the tab is influenced by the amount

of units produced. The amount of production units used as cost drivers that use units of kuintal.

b) Kilometer usage

Object classification costs the unit level batch used is the amount of usage kilometers. The imposition is used because of the costs generated by the cost object are influenced by the amount of usage kilometers.

c) Machine hours

The activity level of this facility do not depend on the unit as well as the product. The object of this fixed cost is issued even though the number of units and the product produced reduced and increased. These activities served as the support operations because all operations carried out by humans and machine. So the facility level activity cost driver is set to use machine hours.

d) Direct labor hours

The activity level of this facility do not depend on the unit as well as the product. The object of this fixed cost is issued even though the number of units and the product produced reduced and increased. So the facility level activity cost driver is set to use direct labor hours.

5) Determine of pool rate

The last step is calculate the rate group obtained by dividing the total cost of the group with the cost driver. Rate calculation of each group can be seen in the following tables:

Table 16 Pool Rate of Each Cost Pool (rupiah)

Cost Pool	Total Cost Pool	Cost Driver		Pool rate
		Imposition basic	Amount	
A	B	C	d	e = b : d
1	25.334.350.596 21.713.170.272 28.856.877.390 **75.904.398.258**	Unit production	639.440 (Unit production budget)	118.704,488
2	3.626.630.463 987.090.160 **4.613.720.623**	Kilometer usage	125.000 (Kilometer usage budget)	36.909,764
3	39.303.979.860 40.794.819.199 **80.098.799.059**	Machine hours	13.824 (Machine hours budget)	5.794.183,959
4	21.721.682.932 17.500.884.775 8.500.834.035 1.515.300.782 16.037.820.877 31.282.309.390 **96.558.832.791**	Direct labor hours	1.169.280 (Direct labor hours budget)	82.579,735
Total	**257.175.750.711**			

Source: processed data

b. Activity Based Object Costing (ABOC)

Activity Based Object Costing is the process of calculating the cost of goods manufactured is based on the consumption of each product to the

activity. This stage is the last stage in setting the cost of goods manufactured by using the ABC system. Imposition of factory overhead costs to each cost driver actually by each type of product multiplied by each cost pool, so that obtained factory overhead costs for each type of product as in the following table:

Table 17 Imposition Overhead Costs to Each Products PG. Kebon Agung Malang

Activities	Sugar	Molasses
Unit production amount 374.510 x 118.704,488 255.710 x 118.704,488 (Unit production realization)	44.456.017.801	30.353.924.626
Kilometer usage amount 86.750 x 36.909,764 32.000 x 36.909,764 (Kilometer usage realization)	3.201.922.027	1.181.112.448
Machine hours amount 10.075 x 5.794.183,9597 3.956 x 5.794.183,9597 (Machine hours realization)	58.376.403.397	22.921.791.744
Direct labor hours amount 617.980 x 82.579,735 543.980 x 82.579,735 (Direct labor hours realization)	51.032.624.635	44.921.724.245
Total Overhead Costs	**157.066.967.860**	**99.378.553.063**

Source: processed data

2 Comparison of Cost of Goods Manufactured with ABC Traditional Cost Accounting System

After calculating factory overhead costs with ABC system, furthermore can be known determination of the difference between the cost of goods manufactured with traditional cost accounting compared ABC system. The following is a table cost of goods manufactured PG. Kebon Agung Malang with ABC system and table comparison cost of goods manufactured between traditional cost accounting with ABC system.

Table 18 Calculation Cost of Goods Manufactured PG. Kebon Agung Malang with ABC System in 2011 (rupiah)

Description	Sugar	Molasses	Total
Raw material Costs	82.575.507.039	9.175.056.337	91.750.563.376
Direct Labor Costs	27.088.375.568	3.348.557.110	30.436.932.678
Factory Overhead Costs	157.066.967.860	99.378.553.063	256.445.520.923
Total Production Cost	**266.730.850.467**	**111.902.166.510**	**378.633.016.977**
Beginning WIP Inventory	133.093.359	99.795.146	232.888.505
Ending WIP Inventory	(69.166.554)	(128.419.887)	(197.586.441)
Cost of Goods Manufactured	**266.794.777.272**	**111.873.541.769**	**378.668.319.041**

Source: processed data

The calculated beginning WIP inventory with ABC system in product sugar and molasses is beginning inventory divided cost per unit traditional and multiply by cost per unit ABC system.

Beginning inventory :

Sugar : $\frac{133.093.359}{713.531,56}$ = 186,873 unit x 712.212,89 = 133.093.359

Molasses: $\frac{100.005.605}{438.535,05}$ = 228,044 unit x 437.613,56 = 99.795.146

The calculated Ending WIP inventory with ABC system in product sugar and molasses is ending inventory divided cost per unit traditional and multiply by cost per unit ABC system.

Ending Inventory :

Sugar : 69.294.873 = 97,15 unit x 712.212,89 = 69.166.554
713.531,56

Molasses: 128.690.479 = 293,455 unit x 437.613,56 =128.419.887
438.535,05

Table 19 Comparison Cost of Goods Manufactured Between Traditional Cost Accounting System with ABC System (rupiah)

Product	Cost of Goods Manufactured		Difference
	Traditional Cost Accounting System	ABC System	
Sugar	**267.289.500.697**	**266.794.777.272**	(Overcosted) 494.723.425
Molasses	**112.109.106.505**	**111.873.541.769**	(Overcosted) 235.564.736

Source: processed data

From the table above can be known that there are a difference in the result calculation cost of goods manufactured by traditional cost accounting and calculation with ABC system. Sugar product had overcosted of Rp. 494.723.425 and the molasses product had overcosted Rp. 235.564.736. Overcosted is calculations of cost charged by the company too high.

This comparison obviously illustrates the impact of using traditional cost accounting using a single cost driver when compared with ABC system charge

based activities using multiple cost drivers, improper charging will cause distortion cost. Source of distortion lies in imposition of costs factory overhead costs based on only one cost driver, the production unit. Calculation of factory overhead which can lead to less precise serious consequences for the company. An example can lead to a wrong decision about selling the product pricing.

ABC calculations indicate charge costs system is more accurate than traditional cost accounting. Calculation cost of goods manufactured with ABC system is more accurate was expected to help the company management in decision making concerning the company determination selling price of the product.