

## CHAPTER IV

### RESULT AND ANALYSIS

#### A. General Description of PG Ngadiredjo

##### 1. History of PG Ngadiredjo Kras-Kediri

PG Ngadiredjo is one of the business units of PT Perkebunan Nusantara X (Persero) engaged in efforts to manage raw material “sugarcane” become primary production “white crystalline sugar” with a by-product in drops used as raw materials for alcohol, *spiritus* to medical needs.

PG Ngadiredjo was established in 1912 by the Dutch private company NV HVA (*Handels Verniging Amsterdam*) which is located in Jambean Village, Kras Subdistrict, Kawedanan Ngadiluwih, and Kediri Regency.

The development of management and company’s condition as follows:

- 1912 : PG Ngadiredjo was established by Dutch Private Company namely NV HVA.
- 1942 : The Japanese invaders entered Indonesia; operational was taken over by Japan until 1945.
- 1945-1957 : When Dutch military aggression II, restored to original possession namely NV HVA.
- 1957 : Taken over by the Government of Indonesia, (Nationalization of Foreign Companies).
- 1963 : PP No 1 and 2 hold the reorganization established BPU. PPN – Sugar.

- 1968 : PP No 14, BPU. PPN – Sugar dissolved, formed the Board of Director PN. Perkebunan (PNP).
- 1973 : PP No 23, merger PNP XXI with PNP XXII into PT Perkebunan XXI-XXII (Persero) where PG Ngadiredjo therein.
- 1996-Now : Restructuring of BUMN through the decision of the minister of justice No. 52. 8338 HT. 01.01. Dated 11-3-1996. PT Perkebunan XXI-XXII (Persero) merged with PT Perkebunan XXVII, Pabrik Karung Pecangakan, and Perkebunan Tembakau Klaten become PT Perkebunan Nusantara X (Persero) that having businesses units:
- 11 units of Sugar factory
  - 2 units of Cigar Tobacco Plantation (Export) and its Cigar Company.
  - 3 units of Hospital (for Employee and Public).
  - 1 unit of Sack Company.
  - 3 units of Sugar factory outside of Java

## 2. General Description

### a. Location of PG Ngadiredjo

Village : Jambean

Kelurahan : Jambean

Subdistrict : Kras

Regency : Kediri  
 Province : East Java  
 ZIP Code : 64102  
 Situated at : 170 km from capital of province  
 20 km from capital of regency  
 Telp / fax : 0354 – 479700 / 0354 – 477178  
 E-mail : pgngadiredjo@yahoo.com

#### b. Topography and Working Area

Working area covers Kediri regency ( six sub district) and Blitar regency (nineteen sub districts).

High above the sea level : 80 – 600 meter

Type of ground : Regosol 70%  
 Aluvial 10%  
 Mediteran 20%

#### c. Irrigation

The source of irrigation that utilized by PG Ngadiredjo consists of:

- 1) Technics : 5 %
- 2) Pump : 45%
- 3) Rain Cistern : 50%
- 4) Others : -



#### d. Supporting Infrastructure

Source of water : Brantas River

Source of raw material : Sugarcane ( TS and TR )

Level of road : I – Province road

Social facility : Sport field, Mosque, and Art Building

### 3. Condition of Company

Stand on : 1912

Ownership : State – Owned Corporation (BUMN)

Type of processing : Sulfitasi

Type of resulted sugarcane : refined-sugar (SHS – I)

### 4. Land

Hak Guna Usaha : 1621, 57 ha

Hak Guna Bangunan : 55, 07 ha

### 5. Source of Company Main Component

**Table 1. Source of Company Main Component**

Types of Processing	Source of Country	Last Rehabilitate
Squeezing	Japan	1986
Power	Japan	1986
Processing	Indonesia	1986
Finishing	Germany	1986

Source: PG Ngadiredjo (2013)

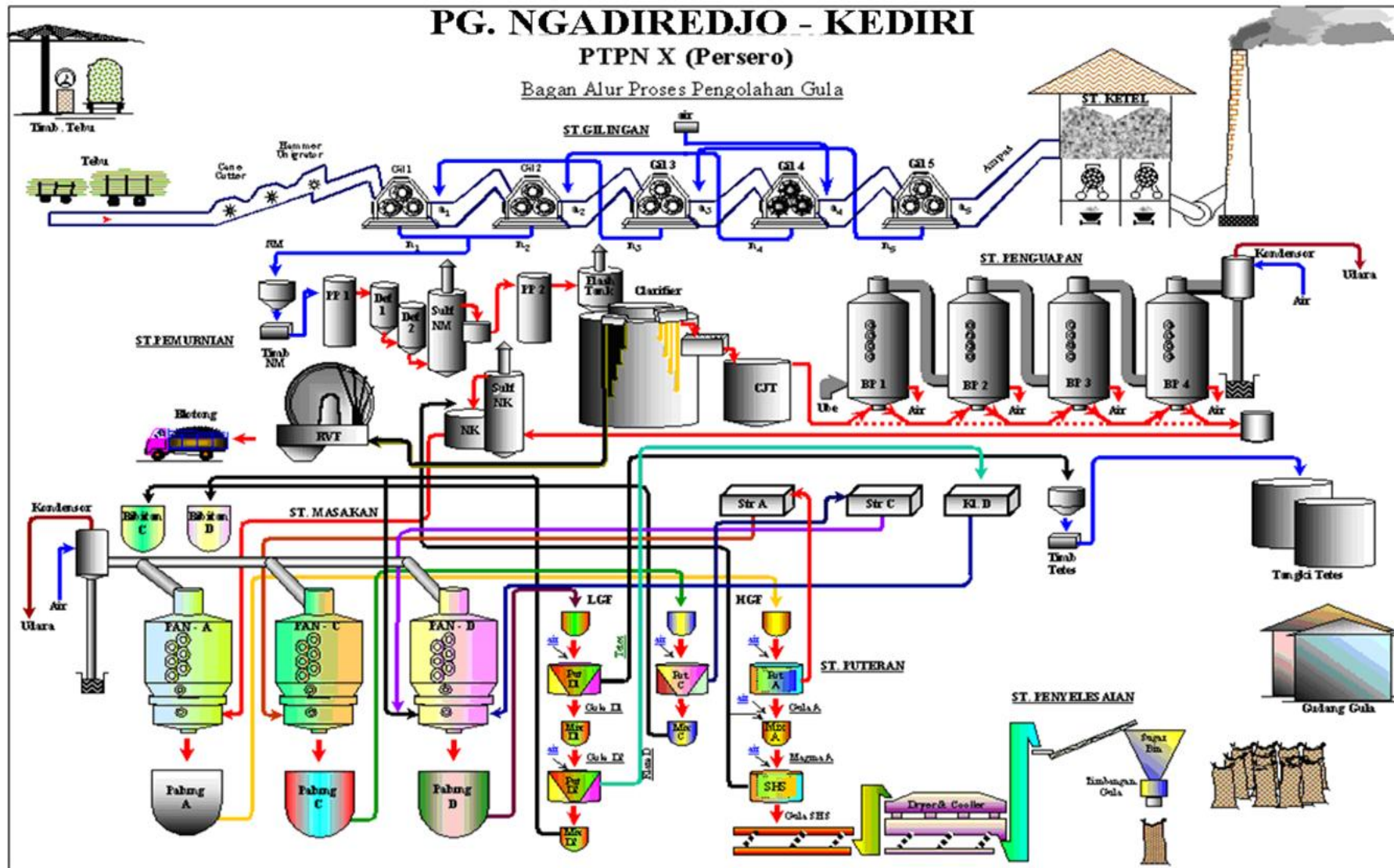


Figure 1. The Chart of Sugar Processing  
 (Source: PG Ngadiredjo, 2013)



## 6. The Chart of Sugar Processing

The processing of sugar is begun from the sugarcane entering in the PG Ngadiredjo. The entering of sugarcane will be delivered to process of sugarcane cutter which is in this process; the sugarcane will be cut up by knife machine that is the machine is actuated by steam. After the cutting up process is finished, the pounding process of sugarcane will be done to crush the sugarcane in order the result of this process will be squeezed in machine of *Gilingan 1*. Besides the squeezing process is conducted, the measurement of *rendemen* will be realized in the machine of *Gilingan 1*. Then in the *Gilingan 2* until *Gilingan 5*, the process of sugarcane squeezing will be blended with the water until in the end of this process will produce *nira mentah* which it will be used to continue the sugar processing and the bagasse will be delivered to *kettle* as the *boiler* (incinerator).

*Nira mentah* will be weighed, and then it will be delivered to juice hitter to be heated up by using first heater with temperature 75° celcius. During the heating process, the *nira mentah* will be given lime in the *defecator 1* and will be given lime and  $\text{So}^2$  (sulphur) in the *defecator 2* in order to the result of this process will produce *nira mentah sulfitasi*. After the heating process is finish in the first heater, it will be continued to juice hitter of second heater with temperature 105° celcius and the result will be delivered to flash tank which is the *nira mentah sulfitasi* will be blended with some additional material. Then, the result of that process will be entered to

door clarifier to be precipitated and then it will be filtered. The result of filtering process will be delivered to CJT (tank of *nira jernih*).

*Nira jernih* will be entered to BP 1-BP 4 to be steamed in order to it will reduce water-content. There are 2 (two) kinds of this result, *nira kental* *sulfitasi* and waste. The *nira kental sulfitasi* is the end result of the last BP which is it will be brought to tank of *nira kental* to continue the cooking process while the waste will be distributed to condenser that has been filled by water. The cooking process will be conducted in fan A, B, C and finally will produce crystal sugar. The crystal sugar will be sent to *palung* A, B, C and turned to separate the elements that contains molasses and sugar. The sugar will be dried, cooled, weighed, and finally it will be packed and save to sugar warehouse.

## 7. Koperasi Petani Tebu Rakyat (KPTR)

In providing the raw material, PG Ngadiredjo provides available the sugarcane from the own land and society land. To supply the sugarcanes that come from sugarcane's farmer, the company provides a credit system which is the company gives a loan afore in order to the farmer can get the funds from PG Ngadiredjo to smoothen the sugarcane planting. To provide the credit for farmer, PG Ngadiredjo form a cooperative to conduct the credit process. The process is under the supervision of main departments in PG Ngadiredjo. PG Ngadiredjo has seven cooperative in Kediri region and one

cooperative in Blitar. The cooperative of sugarcane's farmer which is called *Koperasi Petani Tebu Rakyat (KPTR)* that PG Ngadiredjo has as follows:

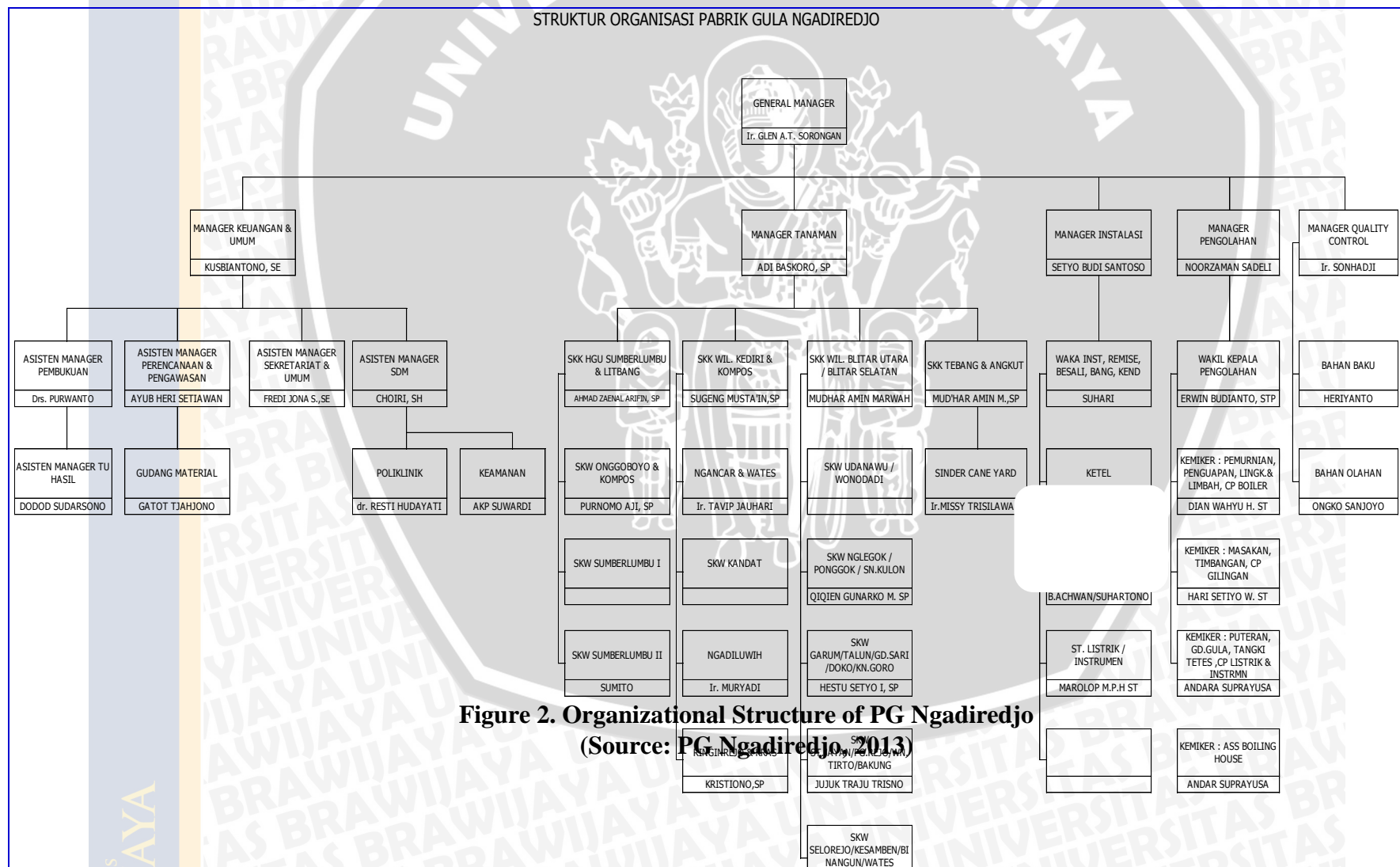
- a) KPTR "Tebu Agung" in Blitar
- b) KPTR "Sido Rukun" in Kediri
- c) KPTR "Rosan Kencana" in Kediri
- d) KPTR "Karya Mandiri" in Kediri
- e) KPTR "Kopkar Sejahtera" in Kediri
- f) KPTR "Tebu Manis Agung" in Kediri
- g) Koperasi Pertanian "Nugroho" in Kediri
- h) KUB "Gula Anugerah" in Kediri

The cooperative that PG Ngadiredjo provides is positioned in some place in Kediri region. It is completed by company to reach out of sugarcane's farmer in Kediri in order to the farmer can delivers the sugarcane into the sugar factory.

## 8. Organizational Structure

The existence of organizational structure is very important because it provides to the duties, authority, and responsibility of each employee in the organization. Therefore, all of activities can be controlled because all of the employees must accountably the finished activities for the reporting to the top management related the employees' responsibility. The organizational structure contained in PG Ngadiredjo Kras Kediri can be described as follows:





The duties, authority, and responsibilities of each department are as follows:

a. General Manager

- 1) Implement all of policy or decision related PG Ngadiredjo activities that have been decided by management.
- 2) Organize and supervise the work implementation from each manager of department and all employees.
- 3) Report to management related the problems that disturb the activities in the company.
- 4) Provide and implement the activities through collaboration with manager of each department.
- 5) Keep and maintain the highest grade from every sector in implementation of every job.
- 6) Propose the increasing of wages planning and retiring of employee, and promoting based on the points that have been designed by company.

b. Manager of Financial and General

- 1) Provide the planning of company's expenditure budget.
- 2) Organize and control the fund sources than needed to realize company operational activities.
- 3) Coordinate the job implementation in financial and general department which is consisting of planning of financial control, bookkeeping, development of employee, and secretarial.
- 4) Carry out the company's cash flow

- 5) Carry out the administration or recording the income that company has.

To undertake and control the all of activity in finance and general department, there are some assistant managers in financial and general department which is they will organize the certain activities based on the duty and responsibility. Related assistant managers in financial and general department are described as follows:

- 1) Assistant manager of bookkeeping. The responsibility of this part is accounted and record all activities that is undertaken which is related in incoming and issuing the company's fund. In this part, there is a assistant manager of *TU Hasil* which it has responsibility to organize the production planning.
- 2) Assistant manager of planning and controlling. The responsibilities of this part are providing a budget planning for company activities; control the usage of issued budget. In this part, there is an assistant manager of material warehouse which is this part has responsibility to control and keep the components used for realize the company activities.
- 3) Assistant manager of secretariat and general. This part has responsibility to organize and control the corporate social responsibility program and correspondence.
- 4) Assistant manager of human resource. This part has responsibility to organize all of employee needed such as healthy and safety. Therefore, in this part provides two subdivisions into polyclinic and security.



c. Manager of Plants

- 1) Prepare the schedule of sugarcane planting since set up the land until sugarcane felling.
- 2) Control and report the activities that are conducted by employee to general manager.
- 3) Contribute the counseling to farmer sugarcane
- 4) Coordinate the arrangement of expenditure budget planning in company especially in plant sector, felling, and shipping.
- 5) Control and manage the usage of farmers' commodity that is needed in planting sector effectively and efficiently.

In this part distributes a head of field for every region which is called *Sinder Kepala Kebun (SKK)*. This part provides four main sub department that must be organized by manager of plants in order to the main activities of this department can be undertaken smoothly. Those four main sectors are illustrated as follows:

- 1) *SKK HGU* Sumberlumbu and Litbang. In this region, SKK distributes a head in specific region which is called *Sinder Kepala Wilayah (SKW)* who control the planting activities in each region as follows:
  - a) *SKW* Onggoboyo & Kompos
  - b) *SKW* Sumberlumbu I
  - c) *SKW* Sumberlumbu II

2) SKK in Kediri Region. In this region, SKK distributes a head in specific region which is called *Sinder Kepala Wilayah (SKW)* who control the planting activities in each region as follows:

- a) SKW Ngancar and Wates
- b) SKW Kandat
- c) SKW Ngadiluwih
- d) SKW Ringinrejo and Kras

3) SKK of North Blitar and South Blitar Region. In this region, SKK distributes a head in specific region which is called *Sinder Kepala Wilayah (SKW)* who control the planting activities in each region as follows:

- a) SKW Udanawu and Wonodadi
- b) SKW Nglegok, Ponggok, SN.Kulon
- c) SKW Garum, Talun, GD Sari, Doko, KN.Goro
- d) SKW ST.Jayan, PG.rsjo, WN.Tirto, Bakung
- e) SKW Selorejo, Kesamben, Binangun, Wates

4) SKK Felling and Shipping. This part has responsibility to decide when the felling and shipping will be scheduled. This part provides *sinder* cane yard that has responsibility to control the felling and shipping directly in field. Besides that, some functionary from felling and shipping will be placed in Receiving Post. In Receiving Post, the functionary will check and control the condition of received sugarcane. In checking the condition of received sugarcane, there are

no *sogolan*, *brondolan*, *pucukan*, *daduk*, *akar*, *tebu muda*, and brix under 19. The functionary also records the code of truck, brix level, the number of queue on Instruction Letter of Felling and Shipping. Besides that to record the condition of sugarcane, the functionary input the barcode, fills the code of truck, and brix level in computer.

d. Manager of Installation

- 1) Supply and keep the company equipment and other supporting facility.
- 2) Control and report the all of activities that is realized by employee in installation department to general manager.
- 3) Prepare the development and application of technology to milling capacity that have been designed.
- 4) Keep the smoothness of machine operation and installation in milling season that have been planned.
- 5) Make and propose the expenditure budget planning in technic sector to general manager.

This part provide one vice head of installation, remise, building, and vehicle. To help the duties of vice head of installation thus it provides three head of specific sector such as head of *ketel*, *gilingan*, and electricity/instrument. The main function of this department is keeping and controlling the equipment and other facility in PG Ngadiredjo, so some functionary will be placed in Weighing Post to weigh the received sugarcane. It is conducted in keeping the condition a pair of scales in



order to if there are some problems with the a pair of scales it can be solved by some functionary from installation department. Thus, the accurate result from weighing result will be acquired by PG Ngadiredjo.

e. Manager of Processing

- 1) Arrange the planning, preparation, and realization of production sector activities.
- 2) Keep and pay attention related to highest grade of activities implementation.
- 3) Secure the chemicals to production process.
- 4) Realize the sugar processing until weighing of sugar into sack.

This part provides a vice head of processing. To control the activities of sugar processing, it provides a sugar doctor or *kemiker* as commonly called in sugar factory sector. There are four *kemiker* that provided in this part as follows:

- a) *Kemiker*: Purification, evaporation, environment and waste, CP Boiler.
- b) *Kemiker*: *Masakan*, Weighing, *CP Gilingan*.
- c) *Kemiker*: *Puteran*, Sugar Warehouse, *Tetes* Tank, Cp Electricity and instrument.
- d) *Kemiker*: Assistant Boiling House

f. Manager of Quality Control

- 1) Implement the supervision of running the production process to ascertain the related procedure conformity on achieving the production target.
- 2) Conduct the supervision on quality of raw material.
- 3) Oversee the company preparation until testing of company equipment.
- 4) Conduct the supervision of specific analysis based on requirements.
- 5) Conduct the supervision of production sugar quality.
- 6) Arrange and prepare the documents to control the quality and production data.

In quality and control department provides two kind of sector that must be controlled well in order to the supplying and resulting of sugar appropriate with the company expects. It provides quality and control in raw material and goods in process. Besides that, some functionary from Quality Control Department will be placed in Weighing Post to control and record the sugarcane weighing result.

## **B. Data Presentation**

### **1. Raw Material Inventory Procedure**

Sugarcane is main raw material in PG Ngadiredjo to conduct the production process. During milling season, PG Ngadiredjo needs adequate supplying of raw material in order to the company be able to achieve the

standard of sugarcane supplying. Based on the explanation from assistant manager of *TU Hasil* stated that every milling season, PG Ngadiredjo must achieve the adequate amount of sugarcane supplying which comprise 800.000 quintal from *Tebu Sendiri (TS)* source and 9.200.000 quintal from *Tebu Rakyat (TR)* source so the total amount that must be complied by PG Ngadiredjo is 10.000.000 quintal.

Supplying of raw material inventory, PG Ngadiredjo has two kinds of sugarcane sources. The sugarcane sources come from the PG Ngadiredjo own land which is called *Tebu Sendiri (TS)* and society's land which is called *Tebu Rakyat (TR)*. To provide the sugarcane source that comes from society, the company conducts two systems, credit system and non credit system. In credit system, PG Ngadiredjo provides funds for sugarcane's farmer to defray the planting activities. In supplying the sugarcane from *Tebu Rakyat (TR)* source, there are land enrollment, contract agreement, and credit realization for land owner that is organized by Koperasi Petani Tebu Rakyat. Those activities will be recorded by making some documents and those documents will be distributed for related functions in PG Ngadiredjo in implementing the raw material inventory procedure.

**a. Procedure of Raw Material Inventory from *Tebu Rakyat (TR)* Source**

Procedure of raw material inventory from *Tebu Rakyat (TR)* source is one of procedure in supplying the raw material in PG Ngadiredjo which is the sugarcane as main raw material comes from society's land. In this procedure, PG Ngadiredjo will receive some documents from KPTR related



with the land enrollment from sugarcane's farmer. Through this way, PG Ngadiredjo can supply adequate sugarcane as main raw material of sugar production.

PG Ngadiredjo also provides two kinds of system which is the company gives two alternatives for the sugarcane's farmer, credit or non credit system. In credit system, PG Ngadiredjo offer a loan for the farmer which is the company will provide fund for planting of sugarcane. In non credit system, PG Ngadiredjo does not provide loan for the farmer.

### **1) Procedure of Raw Material Inventory from *Tebu Rakyat (TR)* Source with Provides a Credit System**

#### **a) Documents used**

##### **(1) Land Certificate (LC)**

Land certificate is received from KPTR as an archive. It is required as a proof of land ownership.

##### **(2) Identity Number (IN)**

Identity number is received from KPTR as a archive. It is required as insigne from land owner.

##### **(3) Contract Agreement (CA)**

This document consists of Letter of Statement and Authority (LSA), Contract Agreement of Sugarcane Milling (CASM), and Cooperation Agreement (CA). Those documents are received from KPTR as a data and information that there will a receiving of sugarcane in certain time.

#### (4) Sketch of Land (SL)

This document informs the result of land measurement that is measured and created by Quality Control Department. The measurement is conducted for all land sides in order to the official statement that written in land certificate can be proved by measurement and will be illustrated by sketch and supported by some additional information to clarify the content of sketch and it will be used to make Contract Agreement. The descriptions of information inform about the identity of land, sketch of land, the data of contract, and the signature and clear name of the persons involved who approve the result of measurement.

#### (5) Picture of Effective Wide and Location Sketch (PEWLS)

This document is created by Quality Control Department. It is used as attachment of sketch of land. It provides hand writing method related with the information which inform about the identity of land, sketch of land by hand writing, the wide of land is presented by using table, additional of land information, and time of document making.

#### (6) Book of *Cadongan* (BC)

This document is made by region office. It provides the demand for financing plan to Plants Department. The cost of work on is arranged based on the plafond that has been decided by PG Ngadiredjo. This document informs about the location of land, name of foreman in each region, wide of land, planning of planting budget for every aspects, date

of document making, and signature of the persons involved. This document is made by *SKW* in region office and then distributed to *KPTR* to be used in completing the credit procedure.

#### (7) Result of Maturity Analysis (RMA)

This document is created by Quality Control Department. It is issued to arrange the felling and shipping schedule. This document will be distributed to plants department especially to felling and shipping division. The content of this document is some information such as the date of result of maturity analysis is implemented, the number of contract, the category of contract, the name of foreman, the coordinate point, the wide of land, and the measurement aspects of maturity analysis (*rendemen*, maturity degree, etc.). After that, it will be signed up by the persons involved. This document is used as basis to make check sheet and felling schedule.

#### (8) Check Sheet (CS)

The check sheet is created by felling and shipping division. It is issued to decide the list of sugarcane land that appropriate to be felled earlier. In the check sheet will informs the number of land which is the felling section will be begun. The table that provided in this document presents the data such as: the number of contract, the name of farmer, the location of land, the quota per-day that will be received, and the signature and clear name of related party. This document is used to make felling schedule.



#### (10) Felling Schedule (FS)

The document is created by felling and shipping division. It is a felling schedule that has been decided for some land. The document provides the table which informs the number of contract, coordinate point, the name of farmer, the location of land, the period of planting, the wide of land, the forecasting of the amount of sugarcane that will be resulted, schedule, first analysis, the average of brix, and the number of feller. After that, it will be signed by the persons involved. This document is used to make instruction letter of felling and shipping.

#### (11) Instruction Letter of Felling and Shipping (ILFS)

This document is created by felling and shipping division. It is issued as the notice of schedule of sugarcane felling and shipping for the farmer. This document informs the information such as the number of instructions letter of felling and shipping, the date of felling section, the region, the number of contract, the name of farmer, the location of land, and barcode of the document.

#### (12) Proof of Weigh (PW)

This document is created by weighing post. It will be issued when the receiving of sugarcane. Before the sugarcane comes to production process, the weighing will be realized. It is done by functionaries from installation department who weigh the sugarcane and quality control department in inputting the weighing result and print out the proof. The information that is provided in this document are the number of

Instruction Letter of Felling and Shipping, the number of contract, the name of farmer, the code of truck, the time of sugarcane receiving, the location of weighing, the weighing result, and will be signed up by related functionary and driver. There are 4 (four) copies of weighing proof which consists of pink sheet (for driver) as a proof that the land owner has distributed the sugarcane for PG Ngadiredjo, white sheet (weighing archive and Quality Control Department) to control the quality of sugarcane that is received by PG Ngadiredjo, green sheet (Felling and Shipping office) which it will be distributed to Plants Department as a report, and yellow sheet (Felling and Shipping office) to control the sugarcane supplying.

b) Related Functions

(1) Plants Department

This function has responsibility to inform and send some documents to Quality Control Department related with the data of society's land. Besides that, main responsibility of this function is control the planting activities. Plants Department provides *Sinder Kebun Wilayah (SKW)* that placed in region office for specific location and *SKK* of Felling and Shipping. All of those division have own responsibility related with the procedure of raw material inventory.

(a) Region office has responsibility in this procedure to make and sign up the Book of *Cadongan* and check the planting activities.

(b) *SKK* of Felling and Shipping has responsibility to decide the schedule of felling and shipping, decide and make the list of the land to realize the felling and shipping section in certain period, and sign up the Instruction Letter of Felling and Shipping. In this division also provides a functionary to control and check the condition of sugarcane that is placed in receiving post.

(2) Quality Control Department

This function conduct the measurement of land, makes, and signs up the Sketch of Land. Besides that, it conducts the maturity analysis, make, and sign up it.

(3) Receiving Post

In this post, there are some functionaries from Felling and Shipping Division to check the condition of received sugarcane based on the requirements which is adjusted based on the check sheet.

(a) Check the condition of sugarcane (there is no *sogolan*, *brondolan*, *pucukan*, *daduk*, *akar*, *tebu muda*, and *brix* under 19).

(b) Record the code of truck, the *brix* level, the number of queue on Instruction Letter of Felling and Shipping.

(c) Input the barcode and fill the code of truck and the *brix* level.

(4) Weighing Post

This post has responsibility to weigh the received sugarcane. The functionaries who conduct the weighing process are come from Installation Department and in recording and printing out the weighing



result will be conducted by functionary from quality control department in computer.

c) Raw Material Inventory Procedure

(1) Quality Control Department

- (a) Receive the 1 (one) copy of Land Certificate and 1 copy of Identity Number from *KPTR*. Then conduct the land measurement.
- (b) Make and authorize the Sketch of Land and Picture of Effective Wide and Location Sketch (each 3 sheets). The Sketch of Land is signed up by GPS Operator, Land Owner, Foreman of related region, Coordinator of related region, SKW, Assistant Manager of related region, and authorized by Manager of Quality Control Department. Picture of Effective Wide and Location Sketch is signed up by land owner, foreman of related region, coordinator of related region, SKW, and assistant manager of related region.
- (c) Give the 1 (one) copy of Land Certificate, 1 (one) copy of Identity Number, and 3 (three) sheets of Sketch of Land and Picture of Effective Wide and Location Sketch to *KPTR* to be used in completing the required documents.

(2) Plants Department

- (a) Region Office: receive the Land Certificate, Identity Number, Sketch of Land, Picture of Effective Wide and Location Sketch, and Contract Agreement that consists of Letter of Statement and Authority,

Contract Agreement of Sugarcane Milling, and the Cooperation Agreement from *KPTR*.

- (b) Region Office: Make 2 (two) sheets Book of *Cadongan* and it is signed up by *SKW* and foreman in related region. Then, give 1 (one) sheet of Book of *Cadongan* to *KPTR* to finish the credit realization for land owner.

After the land enrollment, contract agreement, and credit realization has been finished. Plants Department in center (PG Ngadiredjo) will receive some documents from *KPTR* to be used as basis in conducting the next step in procedure of raw material inventory.

### (3) Plants Department

- (a) Collect the documents that *KPTR* provides which consist of Land Certificate, Identity Number, Sketch of Land, Picture of Effective Wide and Location Sketch, and Contract Agreement that consists of Letter of Statement and Authority, Contract Agreement of Sugarcane Milling, and Cooperation Agreement.
- (b) Input the data related the information for every land in computer that consists of number of contract, category of land, wide of land, land owner, and planting schedule. And send to Quality Control Department to be used as notice to conduct the maturity analysis.
- (c) Check and control the planting activities

#### (4) Quality Control Department

- (a) Receive the data from plants department related the data for every land. The received data will be used as an archive in database quality control department and a basis to conduct the maturity analysis.
- (b) Conduct the maturity analysis when the period of sugarcane planting has entered ninth or tenth month.
- (c) Make 2 (two) sheets the Result of Maturity Analysis. Then, those documents are authorized by coordinator of maturity analysis, RC on Farm of Quality Control, and Manager of Quality Control.
- (d) Give 1 (one) sheet of Maturity Analysis Result to Plants Department (*SKK* of Felling and Shipping) and 1 (one) sheet for archives.

#### (5) Plants Department

##### Felling and Shipping Division

- (a) Receive 1 (one) sheet the Result of Maturity Analysis.
- (b) Determine the amount of sugarcane and the sugarcane's land that must be felled in certain time.
- (c) Make and authorize 2 (two) sheets of Check Sheet which those documents are signed up by coordinator of Felling and Shipping in field, *SKW*, and *SKK* of Felling and Shipping.
- (d) Make and authorize 1 (one) sheet the Felling Schedule which is signed up by land owner, coordinator of Felling and Shipping in field, *SKW*, and *SKK* of Felling and Shipping.



- (e) Make and authorize 1 (one) sheet the Instruction Letter of Felling and Shipping which is signed up by *SKK* of Felling and Shipping.
- (f) Give the Check Sheet for Receiving Post and as archives, Felling Schedule as an archives, and Instruction Letter of Felling and Shipping to the land owner.

When the felling season has been finished, the sugarcane shipping to PG Ngadiredjo is conducted. Thus, Receiving Post begins to conduct its responsibility.

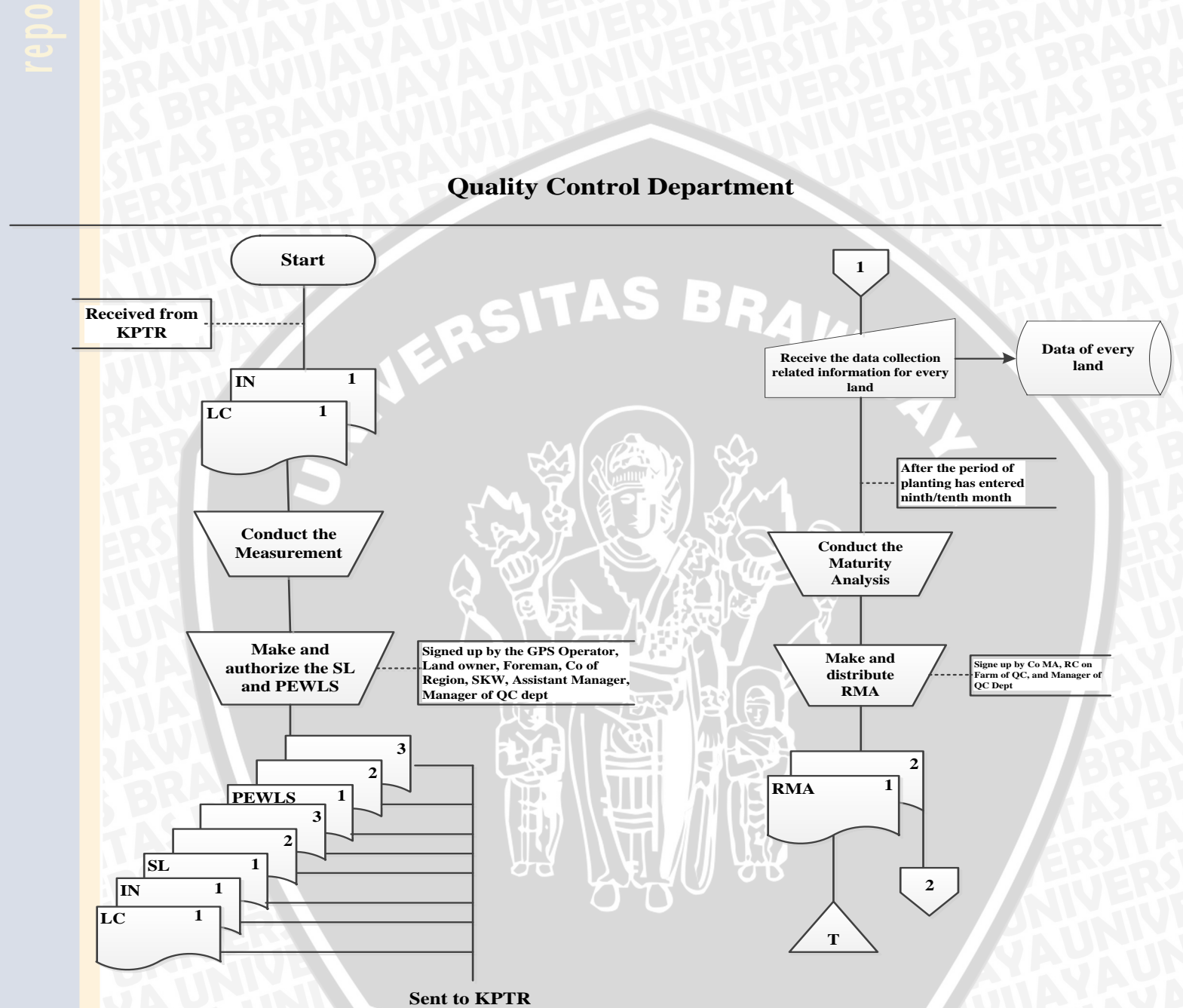
(6) Receiving Post

- (a) Receive 1 (one) sheet of Check Sheet from Felling and Shipping Division.
- (b) Check the condition of sugarcane that is entered into PG Ngadiredjo at a set time (based on the schedule in check sheet).
- (c) Measure and write the *brix* level on Instruction Letter of Felling and Shipping and sign up on it.
- (d) Give 2 (two) stamps on Instruction Letter of Felling and Shipping for number of queue and lane of enter.
- (e) Input the barcode of Instruction Letter of Felling and Shipping and fill the brix level and code of truck.
- (f) Write the code of truck, brix level, and number of ILFS in a book.
- (g) Give the Instruction Letter of felling and Shipping to the driver

### (7) Weighing Post

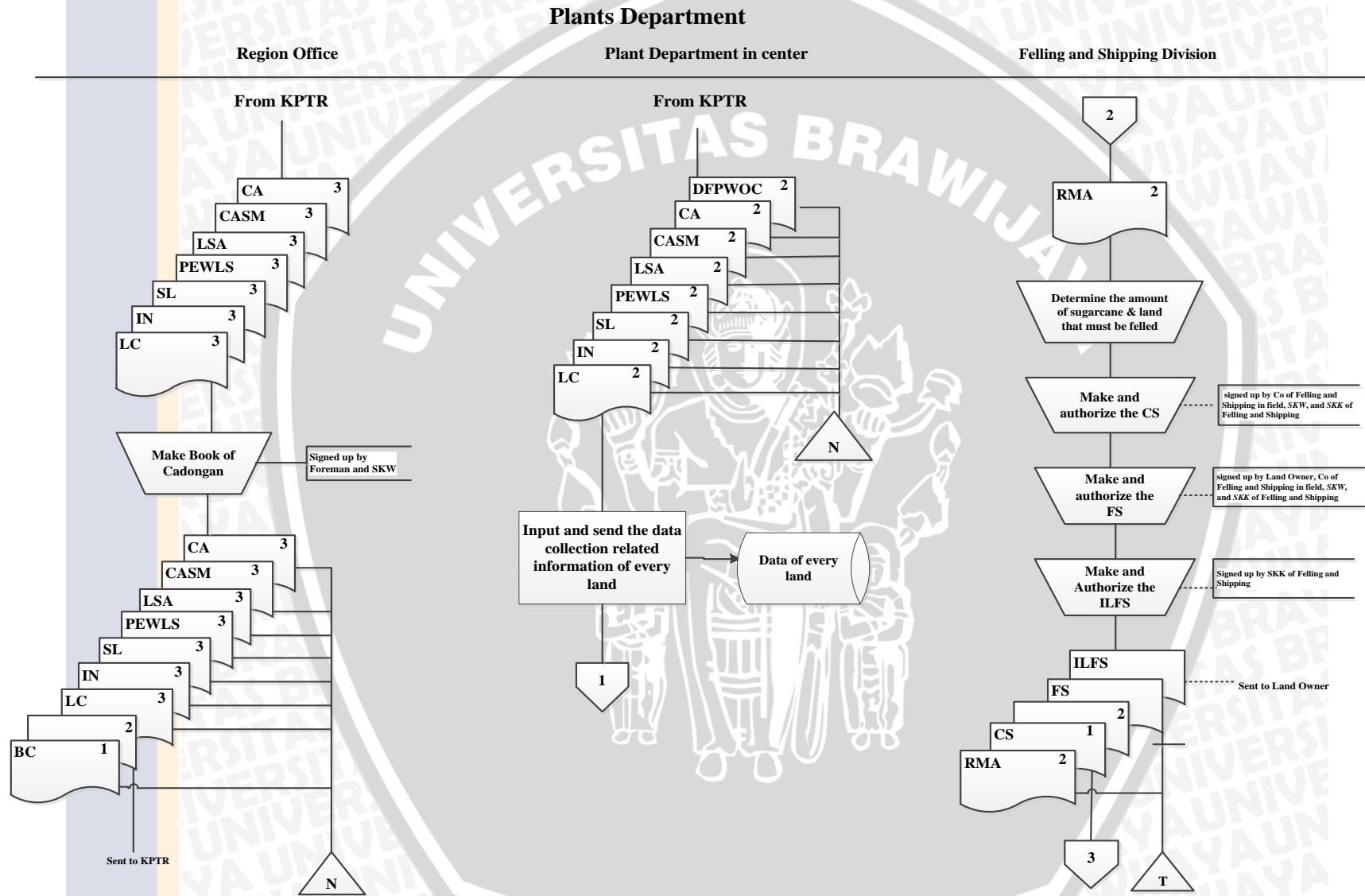
- (a) Receive an Instruction Letter of Felling and Shipping from driver.
- (b) Weigh the sugarcane (functionary from Installation Department).
- (c) Input the data of weighing result (functionary from Quality Control Department).
- (d) Print out and sign up the Proof of Weigh (4 sheets). There are 4 (four) copies of weighing proof which consists of pink sheet for driver, white sheet for weighing archive and Quality Control Department, green sheet for Felling and Shipping Office, and yellow sheet also for Felling and Shipping Office.
- (e) Give the Proof of Weigh to related parties. For pink sheet of Weigh Proof will be given to driver with Instruction Letter of Felling and Shipping.

After the weighing post has finished in conducting the responsibility, some of sugarcanes will go into production process directly. But some of sugarcanes will be in waiting list to go into production process. The time when the sugarcane will go into production process is based on the number of queue that is written on ILFS by functionary in receiving post. The flowchart of raw material inventory procedure is illustrated in figure 3, 4, and 5 on page 96 until 98.



**Figure 3. Flowchart of Raw Material Inventory Procedure from *Tebu Rakyat (TR)* Source with Provides a Credit System (Source: Data Processed, PG Ngadiredjo 2014)**





**Figure 4. Flowchart of Raw Material Inventory Procedure from *Tebu Rakyat (TR)* Source with Provide a Credit System (Cont'd)**  
 (Source: Data Processed, PG Ngadiredjo 2014)

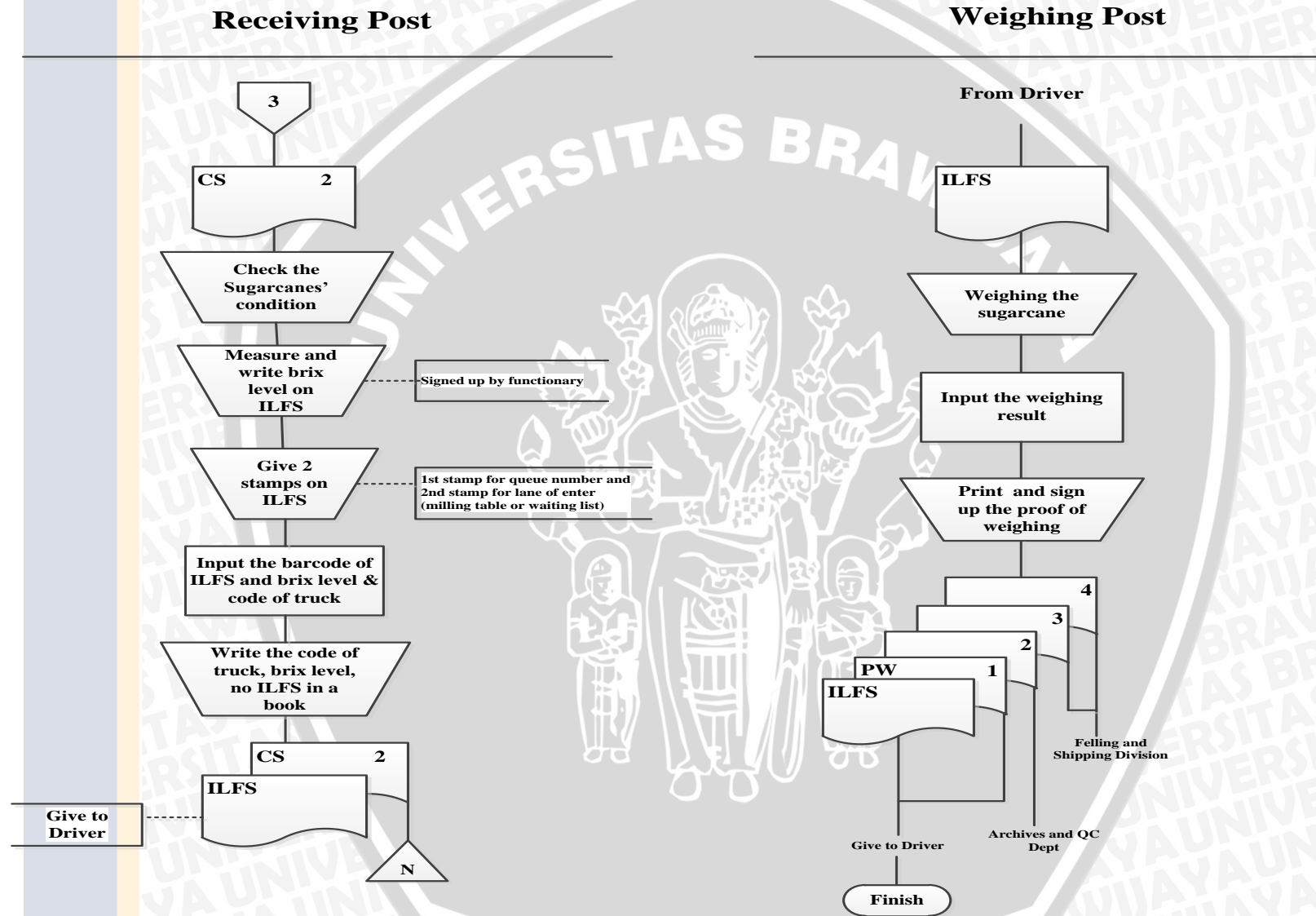


Figure 5. Flowchart of Raw Material Inventory Procedure from *Tebu Rakyat (TR)* Source with Provide a Credit System (Cont'd)  
(Source: Data Processed, PG Ngadiredjo 2014)

## 2) Procedure of Raw Material Inventory from *Tebu Rakyat (TR)* source without Provide a Credit System

### a) Document Used

#### (1) Land Certificate (LC)

Land Certificate is received from KPTR as an archive. It is required as a proof of land ownership.

#### (2) Identity Number (IN)

Identity number is received from KPTR as an archive. It is required as insigne from land owner.

#### (3) Contract Agreement (CA)

This document consists of Letter of Statement and Authority (LSA), Contract Agreement of Sugarcane Milling (CASM), and Cooperation Agreement (CA). Those documents are received from *KPTR* as a data and information that there will be a receiving of sugarcane in certain time.

#### (4) Sketch of Land (SL)

This document informs the result of land measurement that is measured and created by Quality Control Department. The measurement is conducted for all land sides in order to the official statement that written in land certificate can be proved by measurement and will be illustrated by sketch and supported by some additional information to clarify the content of sketch and it will be used to make Contract Agreement. The descriptions of information



inform about the identity of land, sketch of land, the data of contract, and the signature and clear name of the persons involved who approve the result of measurement.

(5) Picture of Effective Wide and Location Sketch (PEWLS)

This document is created by Quality Control Department. It is used as attachment of sketch of land. It provides hand writing method related with the information which inform about the identity of land, sketch of land by hand writing, the wide of land is presented by using table, additional of land information, and time of document making.

(6) Result of Maturity Analysis (RMA)

This document is created by Quality Control Department. It is issued to arrange the felling and shipping schedule. This document will be distributed to plants department especially to felling and shipping office. The content of this document is some information such as the date of result of maturity analysis is implemented, the number of contract, the category of contract, the name of foreman, the coordinate point, the wide of land, and the measurement aspects of maturity analysis (*rendemen*, maturity degree, etc.). After that, it will be signed up by the involved persons. This document is used to make check sheet and felling schedule.

(7) Check Sheet (CS)

The check sheet is created by felling and shipping division. It is issued to decide the list of sugarcane land that appropriate to be felled earlier.

It is conducted by felling and shipping division. In the check sheet will informs the number of land which is the felling section will be begun.

The table that provided in this document presents the data such as: the number of contract, the name of farmer, the location of land, the quota per-day that will be received, and the signature and clear name of related party. This document is used to make felling schedule.

#### (8) Felling Schedule (FS)

This document is created by felling and shipping division. it is a felling schedule that has been decided for some of land. The document provides the table which is informs the number of contract, coordinate point, the name of farmer, the location of land, the period of planting, the wide of land, the forecasting of the amount of sugarcane that will be resulted, schedule, first analysis, the average of brix, and the number of feller. After that, it will be signed by the involved persons. FS is used to make instruction letter of felling and shipping for the farmer.

#### (9) Instruction Letter of Felling and Shipping (ILFS)

This document is created by felling and shipping division. it is issued to the farmer as the notice the schedule of sugarcane felling and shipping. This document informs the information such as the number of instructions letter of felling and shipping, the date of felling section, the region, the number of contract, the name of farmer, the location of land, and barcode of the document.

#### (10) Proof of Weigh (PW)

This document is created by weighing post. It will be issued when the receiving of sugarcane. Before the sugarcane comes to production process, the weighing will be realized. It is done by functionary from quality control department. The information that is provided in this document are the number of Instruction Letter of Felling and Shipping, the number of contract, the name of farmer, the code of truck, the time of sugarcane receiving, the location of weighing, the weighing result, and will be signed by functionary of weighing and driver. There are 4 (four) copies of weighing proof which consists of pink sheet (for driver) as a proof that the land owner has distributed the sugarcane for PG Ngadiredjo, white sheet (weighing archive and Quality Control Department) to control the quality of sugarcane that is received by PG Ngadiredjo, green sheet (Felling and Shipping office) which it will be distributed to Plants Department as a report, and yellow sheet (Felling and Shipping office) to control the sugarcane supplying.

#### b) Related Function

##### (1) Plants Department

This function has responsibility to inform and send some data to Quality Control Department related with the data of society's land. Plants department provide a *Sinder Kebun Wilayah (SKW)* in region office for specific location and *SKK* of Felling and Shipping. All of those sub



division have own responsibility related with the procedure of raw material.

(a) *Sinder Kebun Wilayah (SKW)* in region office has responsibility in this procedure to sign up the Contract Agreement, and check the planting activities. Besides that, this function will receive some documents from *KPTR* as an archive.

(b) *SKK* of Felling and Shipping has responsibility to decide the schedule of felling and shipping, decide and make the list of the land to realize the felling and shipping section in certain period, and sign up the Instruction Letter of Felling and Shipping. In this division also provides a functionary to control and check the condition of sugarcane that is placed in receiving post.

## (2) Quality Control Department

This function conduct the measurement of land, makes, and signs up the sketch of land. Besides that, it conducts the maturity analysis, make, and sign up it.

## (3) Receiving Post

In this post, there are some functionaries from Felling and Shipping Division to check the condition of received sugarcane based on the requirements which is adjusted based on the check sheet.

(a) Check the condition of sugarcane (there is no *sogolan*, *brondolan*, *pucukan*, *daduk*, *akar*, *tebu muda*, and *brix* under 19).

(b) Record the code of truck, the *brix* level, the number of queue on Instruction Letter of Felling and Shipping.

(c) Input the barcode; fill the number of truck, and the *brix* level.

#### (4) Weighing Post

In this function, the weighing of sugarcane will be conducted. The functionaries who conduct the weighing process are come from Installation Department and in recording and printing out the weighing result will be conducted by functionary from quality control department in computer.

#### c) Raw Material Inventory Procedure

##### (1) Quality Control Department

(a) Receive the 1 (one) copy of Land Certificate and 1 copy of Identity Number from *KPTR*. Then conduct the land measurement.

(b) Create and authorize the Sketch of Land and Picture of Effective Wide and Location Sketch (each 3 sheets) which is SL is signed up by persons involved such as: the land owner, foreman for every specific region, coordinator of every specific region, *SKW*, assistant manager of every region, and the last will be signed as approval by manager of Quality Control Department and *PEWLS* is signed up by land owner, foreman of related region, coordinator of related region, *SKW*, and Assistant Manager of related region.

(c) Give the 1 (one) copy of Land Certificate, 1 (one) copy of Identity Number, and 3 (three) sheets of Sketch of Land and Picture of

Effective Wide and Location Sketch to *KPTR* to finish the contract agreement.

After the land enrollment and contract agreement has been finished. The Plants Department in center (PG Ngadiredjo) will receive some documents from *KPTR* to be used as basis in conducting the next step in procedure of raw material inventory. Besides that, *SKW* in region office also receive those documents as archives.

## (2) Plants Department

- (a) Receive the documents that *KPTR* provides which consist of Land Certificate, Identity Number, Sketch of Land, Picture of Effective Wide and Location Sketch, and Contract Agreement that consists of Letter of Statement and Authority, Contract Agreement of Sugarcane Milling, and Cooperation Agreement.
- (b) Input the data related the information of every land that consists of number of contract, category of land, wide of land, land owner, and planting schedule. Then, send the data collection to quality control department.
- (c) Check and control the planting activities.

## (3) Quality Control Department

- (a) Receive the data collection related the information of every lands from plants department. Then, save the data in the computer.
- (b) Conduct the maturity analysis when the period of sugarcane planting has entered ninth or tenth month.



- (c) Create 2 (two) sheets the Result of Maturity Analysis. Then, those documents are authorized by coordinator of maturity analysis, RC on Farm of Quality Control, and Manager of Quality Control.
- (d) Give 1 (one) sheet of Maturity Analysis Result to Plants Department (*SKK* of Felling and Shipping) and 1 (one) sheet for archives.

(4) Plants Department

Felling and Shipping Division

- (a) Receive 1 (one) sheet the Result of Maturity Analysis.
- (b) Determine the amount of sugarcane and the sugarcanes' land that must be felled in certain time.
- (c) Create and authorize 2 (two) sheets of Check Sheet which those documents are signed up by coordinator of Felling and Shipping in field, *SKW*, and *SKK* of Felling and Shipping.
- (d) Create and authorize 1 (one) sheet the Felling Schedule which is signed up by land owner, coordinator of Felling and Shipping in field, *SKW*, and *SKK* of Felling and Shipping.
- (e) Create and authorize 1 (one) sheet the Instruction Letter of Felling and Shipping which is signed up by *SKK* of Felling and Shipping.
- (f) Give the Check Sheet for Receiving Function and archives, Felling Schedule as an archives, and Instruction Letter of Felling and Shipping to the land owner.

When the felling season has been finished, the sugarcane shipping to PG Ngadiredjo is conducted. Thus, Receiving Post begins to conduct its responsibility.

#### (5) Receiving Post

- (a) Receive 1 (one) sheet of Check Sheet from Felling and Shipping Division.
- (b) Check the condition of sugarcane that is entered into PG Ngadiredjo at a set time (based on the schedule in check sheet).
- (c) Measure and write the *brix* level on Instruction Letter of Felling and Shipping and sign up on it.
- (d) Give 2 (two) stamps on Instruction Letter of Felling and Shipping for number of queue and lane of enter.
- (e) Input the barcode of Instruction Letter of Felling and Shipping, fill the brix level, and code of truck.
- (f) Write the code of truck, brix level, and number of ILFS in a book.
- (g) Give the Instruction Letter of felling and Shipping to the driver

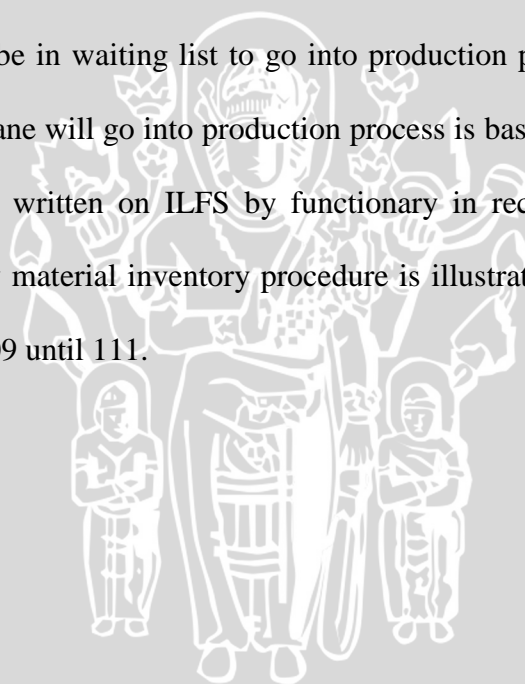
#### (6) Weighing Post

- (a) Receive Instruction Letter of Felling and Shipping from driver.
- (b) Weigh the sugarcane (functionary from Installation Department).
- (c) Input the data of weighing result (functionary from Quality Control Department).
- (d) Print out and sign up the Proof of Weigh (4 sheets). There are 4 (four) copies of weighing proof which consists of pink sheet for

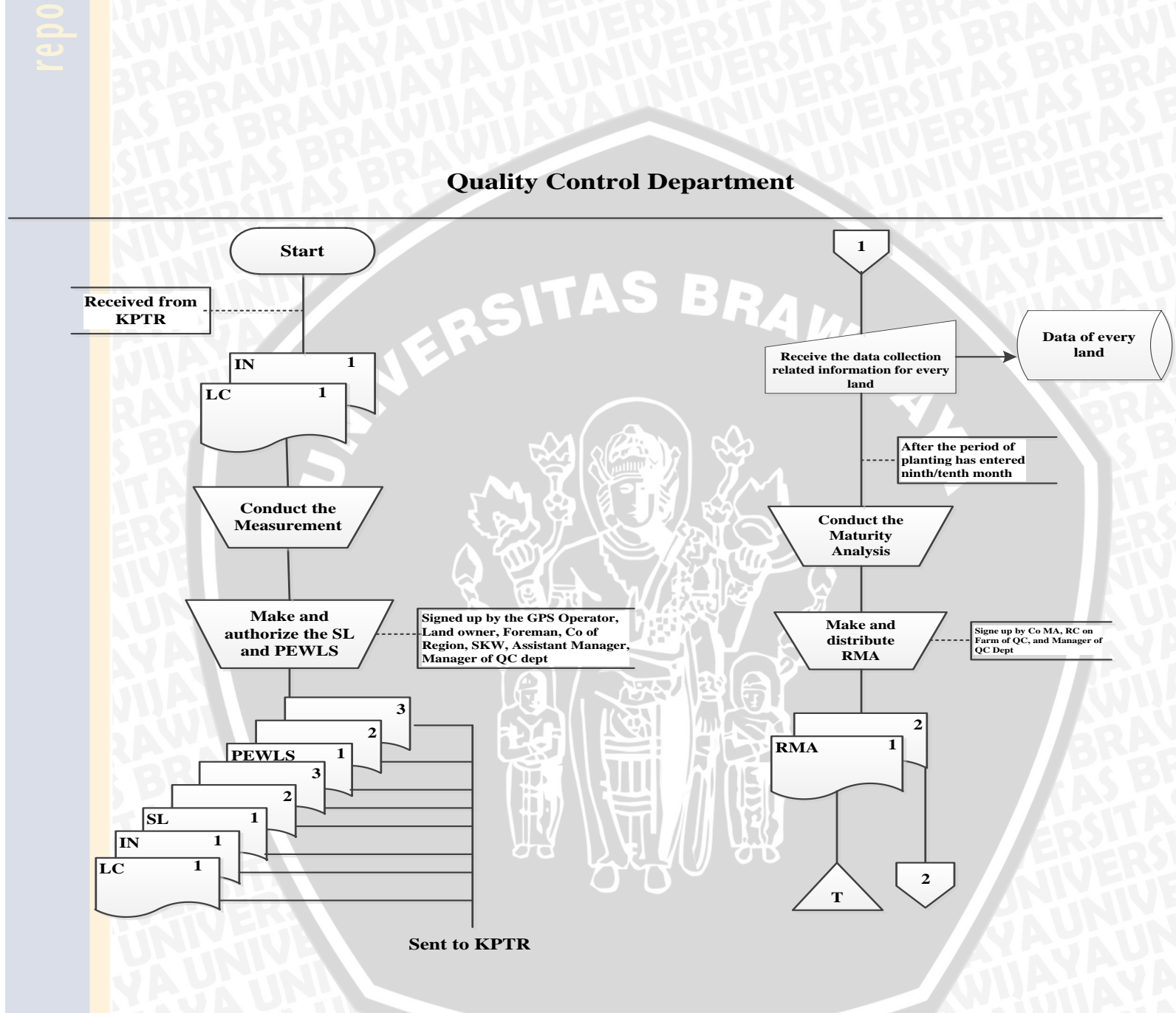
driver, white sheet for weighing archive and Quality Control Department, green sheet for Felling and Shipping Office, and yellow sheet also for Felling and Shipping Office.

- (e) Give the Proof of Weigh to related parties. For pink sheet of Weigh Proof will be given to driver with Instruction Letter of Felling and Shipping.

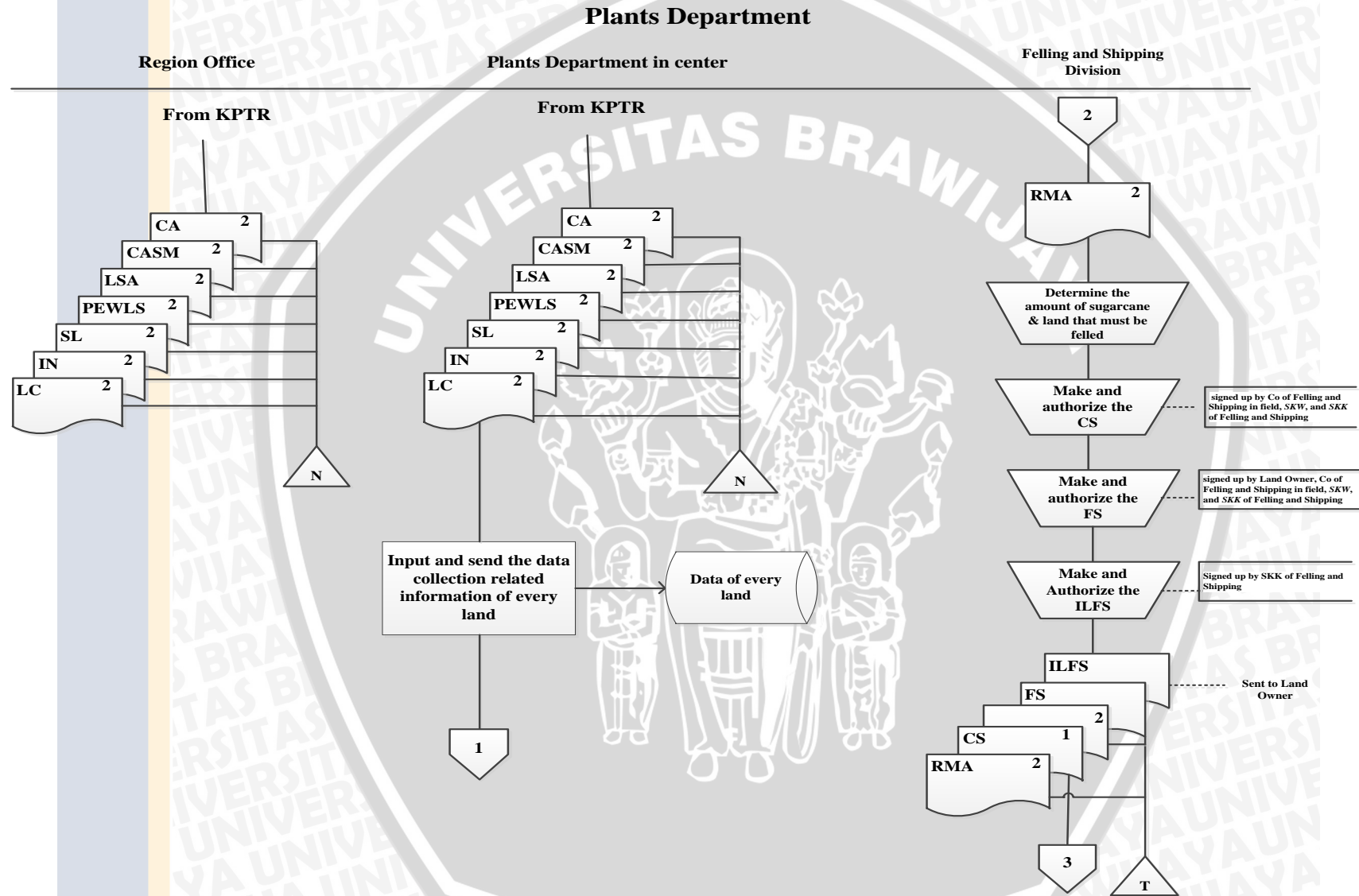
After the weighing post has finished in conducting the responsibility, some of sugarcane will go into production process directly. But some of sugarcane will be in waiting list to go into production process. The time when the sugarcane will go into production process is based on the number of queue that is written on ILFS by functionary in receiving post. The flowchart of raw material inventory procedure is illustrated in figure 6, 7, and 8 on page 109 until 111.







**Figure 6. Flowchart of Raw Material Inventory Procedure from *Tebu Rakyat (TR)* Source without Provide a Credit System (Source: Data Processed, PG Ngadiredjo 2014)**



**Figure 7. Flowchart of Raw Material Inventory Procedure from *Tebu Rakyat (TR)* Source without Provide a Credit System (Cont'd)**  
 (Source: Data Processed, PG Ngadiredjo 2014)

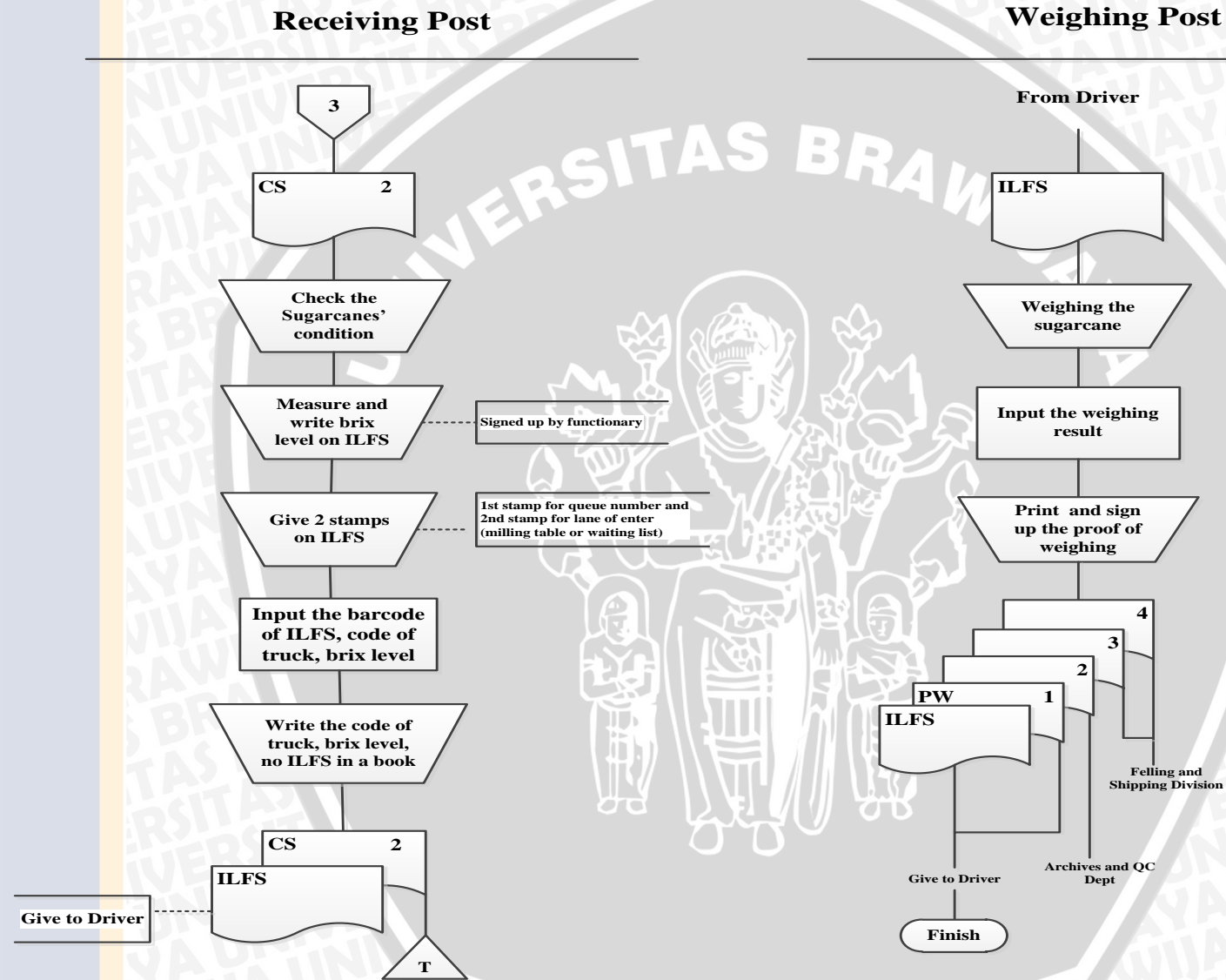


Figure 8. Flowchart of Raw Material Inventory Procedure from *Tebu Rakyat (TR)* Source without Provide a Credit System (Cont'd)  
(Source: Data Processed, PG Ngadiredjo 2014)



**b. Procedure of Raw Material Inventory from *Tebu Sendiri* (TS) Source****1) Document Used.****a) Planning of Cost Estimation (PCE)**

Planning of Cost Estimation is used to estimate the cost and planting equipment (i.e., seed, manure, etc.) that must be issued by company during planting season. It is created by Plants Department (center in PG Ngadiredjo). This document will be delivered for the management office (PTPN X) as a notice on planning of cost estimation that is arranged by PG Ngadiredjo. This document is issued five copies for PTPN X, each SKK in certain region, archives in Plants Department, foreman in certain land, and SKW. It informs about kinds of activities in planting section, land category, and cost estimation per hectare.

**b) Book of *Cadongan* (BC)**

This document is created by region office. The cost of work on is arranged based on the plafond that has been decided by PG Ngadiredjo which it has been written on PCE. This document informs about the location of land, name of foreman in each region, wide of land, planning of planting budget for every aspects, date of document making, and signature of the persons involved.

**c) Result of Maturity Analysis (RMA)**

This document is created by Quality Control Department. it is issued to arrange the felling and shipping schedule. This document will be distributed to plants department especially to felling and shipping

office. The content of this document is some information such as the date of result of maturity analysis is implemented, the number of contract, the category of contract, the name of foreman, the coordinate point, the wide of land, and the measurement aspects of maturity analysis (*rendemen*, maturity degree, etc.). After that, it will be signed up by the involved persons. RMA is used to make check sheet and felling schedule.

d) Check Sheet (CS)

The check sheet is created by felling and shipping division. It is issued to decide the list of sugarcane land that appropriate to be felled earlier. It is conducted by felling and shipping division. In the check sheet will informs the number of land which is the felling section will be begun. The table that provided in this document presents the data such as: the number of contract, the name of farmer, the location of land, the quota per-day that will be received, and the signature and clear name of related party. CS is used to make felling schedule.

e) Felling Schedule (FS)

The document is created by felling and shipping division. It is a felling schedule that has been decided for some of land. The document provides the table which is informs the number of contract, coordinate point, the name of farmer, the location of land, the period of planting, the wide of land, the forecasting of the amount of sugarcane that will be resulted, schedule, first analysis, the average of

brix, and the number of feller. After that, it will be signed by the involved persons. FS is used to make instruction letter of felling and schedule.

f) Instruction Letter of Felling and Shipping (ILFS)

This document is created by felling and shipping division. It is issued to the SKK in all of region as the notice the schedule of sugarcane felling and shipping. This document informs the information such as the number of instructions letter of felling and shipping, the date of felling section, the region, the number of contract, the name of farmer, the location of land, and barcode of the document.

g) Proof of Weigh (PW)

This document is created by weighing post. It will be issued when the receiving of sugarcane. Before the sugarcane comes to production process, the weighing will be realized. It is conducted by foreman from quality control department. The information that is provided in this document are the number of Instruction Letter of Felling and Shipping, the number of contract, the name of farmer, the code of truck, the time of sugarcane receiving, the location of weighing, the weighing result, and will be signed by functionary of weighing and driver. There are 4 copies of weighing proof which consists of pink sheet (driver) as a proof that the land owner has distributed the sugarcane for PG Ngadiredjo, white sheet (weighing archive and Quality Control Department) to control the quality of sugarcane that



is received by PG Ngadiredjo, green sheet (Felling and Shipping office) which it will be distributed to Plants Department as a report, and yellow sheet (Felling and Shipping office) to control the sugarcane supplying.

## 2) Related Function

### a) Plants Department

- (1) Make the Planning of Cost Estimation
- (2) Send the Planning of Cost Estimation to related parties.
- (3) Conduct and control the planting activities

Plants Department provides *Sinder Kebun Wilayah (SKW)* in region office for specific location and *SKK* of Felling and Shipping. All of those sub division have own responsibility related procedure of raw material inventory.

- (1) *Sinder Kebun Wilayah (SKW)* has responsibility to make and sign up the book of *cadongan*, and checking the planting activities. Besides that, *SKW* will receive ILFS from each *SKK*.
- (2) *SKK* of Felling and Shipping has responsibility to decide the schedule of felling and shipping, decide and make the list of land to realize the felling and shipping section in certain period, and sign up the Instruction Letter of Felling and Shipping. In this division also provides a functionary to control and check the condition of sugarcane that come in receiving post.

b) Quality Control Department

This function has responsibility to conduct, make, and authorize the result of maturity analysis.

c) Receiving Post

In this post, there are some functionaries from Felling and Shipping Division to check the condition of received sugarcane based on the requirements which is adjusted based on the check sheet.

(1) Check the condition of sugarcane (there is no *sogolan*, *brondolan*, *pucukan*, *daduk*, *akar*, *tebu muda*, and *brix* under 19).

(2) Record the code of truck, the *brix* level, the number of queue in Instruction Letter of Felling and Shipping.

(3) Input the barcode; fill the number of truck, and the *brix* level.

d) Weighing Post

In this post, the weighing of sugarcane will be conducted. The functionaries who conduct the weighing process are come from Installation Department and the recording and print out the weighing result will be conducted by functionary from Quality Control Department in computer.

3) Raw Material Inventory Procedure

a) Plants Department

(1) Create 5 (five) sheets of Planning of Cost Estimation

(2) Give those documents to PTPN X, related foreman in specific land, SKW, SKK in every region, and archives for center of Plants

Department in PG Ngadiredjo. After PTPN X receives a Planning of Cost Estimation from PG Ngadiredjo, PTPN X will send the planting requirements that are required and PG Ngadiredjo will distribute to each region.

- (3) SKK in every region: receive a PCE as an archive.
  - (4) SKW in Region Office: receive a PCE and make 1 (one) Book of *Cadongan* and save as an archive.
  - (5) Check and control the planting activities.
  - (6) Input and send the data collection related the information for every land to quality control department.
- b) Quality Control Department
- (1) Receive the data collection for every land from plants department.
  - (2) Conduct the maturity analysis when the period of sugarcane planting has entered in ninth or tenth month.
  - (3) Create 2 (two) sheets the Result of Maturity Analysis. Then, those documents are authorized by coordinator of maturity analysis, RC on Farm of Quality Control, and Manager of Quality Control Department.
  - (4) Give 1 (one) sheet of Maturity Analysis Result to Plants Department (SKK Felling and Shipping) and 1 (one) sheet for archives.



c) Plants Department

Felling and Shipping Division

- (1) Receive 1 (one) sheet the Result of Maturity Analysis.
- (2) Determine the amount of sugarcane and the sugarcane's land that must be felled in certain time.
- (3) Create and authorize 2 (two) sheets the Check Sheet which those documents are signed up by coordinator of Felling and Shipping in field, *SKW*, and *SKK* of Felling and Shipping.
- (4) Create and authorize 1 (one) sheet the Felling Schedule which is signed up by land owner, coordinator of Felling and Shipping in field, *SKW*, and *SKK* of Felling and Shipping.
- (5) Create and authorize 1 (one) sheet the Instruction Letter of Felling and Shipping which is signed up by *SKK* of Felling and Shipping.
- (6) Give the Check Sheet for Receiving Post and archives, Felling Schedule as a archives, and Instruction Letter of Felling and Shipping to region office.

d) Plants Department

- (1) Region office: receive ILFS, conduct the felling based on the schedule, and give ILFS to driver when the felling section.

e) Receiving Post

- (1) Receive 1 (one) sheet of Check Sheet from Felling and Shipping Division.
- (2) Check the condition of sugarcane that is entered into PG Ngadiredjo at a set time (based on the schedule in check sheet).
- (3) Measure and write the *brix* level on Instruction Letter of Felling and Shipping and sign up on it.
- (4) Give 2 (two) stamps on Instruction Letter of Felling and Shipping for number of queue and lane of enter.
- (5) Input the barcode of Instruction Letter of Felling and Shipping, fill the *brix* level, and code of truck.
- (6) Write the code of truck, *brix* level, and number of ILFS.
- (7) Give the Instruction Letter of felling and Shipping to the driver

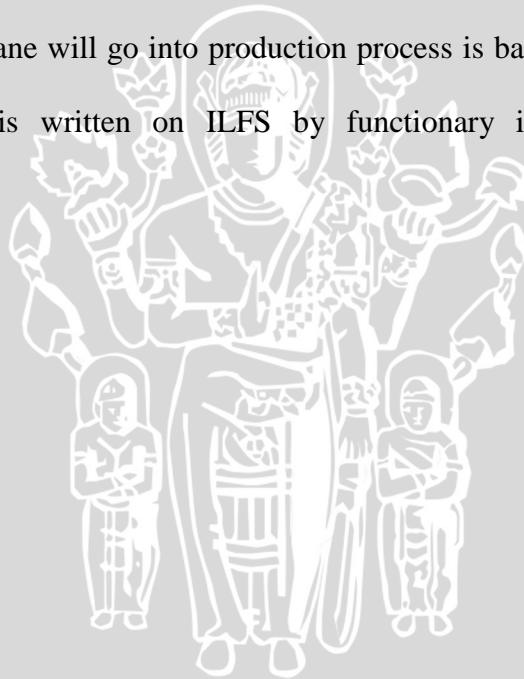
f) Weighing Post

- (1) Functionary who input the data receive Instruction Letter of Felling and Shipping from driver.
- (2) Weigh the sugarcane (functionary from Installation Department).
- (3) Input the data of weighing result (functionary from Quality Control Department).
- (4) Print out and sign up the Proof of Weigh (4 sheets). There are 4 (four) copies of weighing proof which consists of pink sheet for driver, white sheet for weighing archive and Quality Control

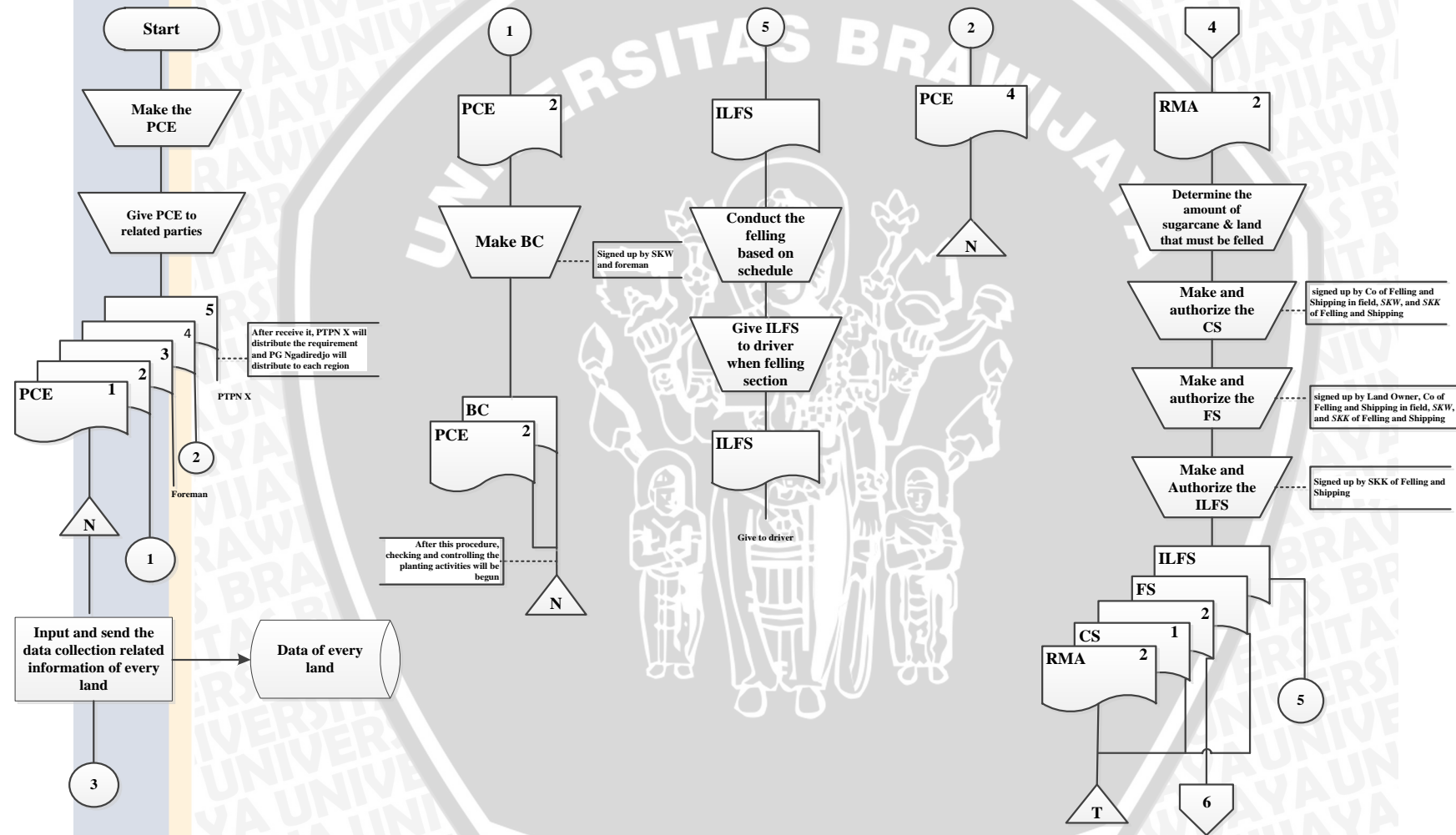
Department, green sheet for Felling and Shipping Office, and yellow sheet also for Felling and Shipping Office.

- (5) Give the Proof of Weigh to related parties. For pink sheet of Weigh Proof will be given to driver with Instruction Letter of Felling and Shipping.

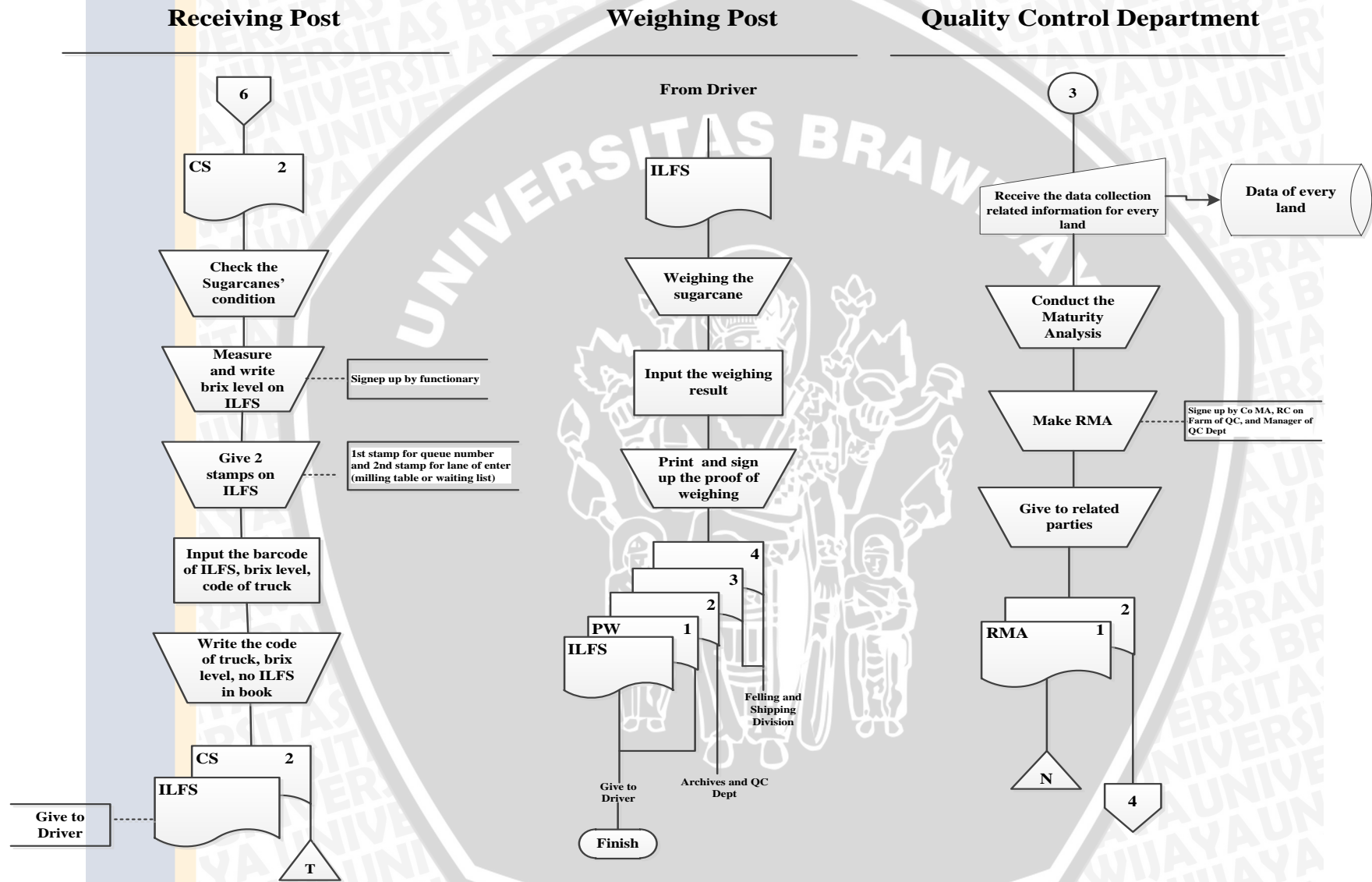
After the weighing post has finished in conducting the responsibility, some of sugarcanes will go into production process directly. But some of sugarcanes will be in waiting list to go into production process. The time when the sugarcane will go into production process is based on the number of queue that is written on ILFS by functionary in receiving post.







**Figure 9. Flowchart of Raw Material Inventory Procedure from *Tebu Sendiri* (TS) Source (Source: Data Processed, PG Ngadiredjo 2014)**



**Figure 10. Flowchart of Raw Material Inventory Procedure from *Tebu Sendiri* (TS) Source (Cont'd)**  
(Source: Data Processed, PG Ngadiredjo 2014)

## C. Data Analysis and Discussion

### 1. The Implementation of Raw Material Inventory Procedure that is Conducted by PG Ngadiredjo Kras – Kediri

The implementation of raw material inventory procedure at PG Ngadiredjo Kras – Kediri consists of two kinds of procedure in raw material inventory, namely:

- a. Procedure of raw material inventory from *Tebu Sendiri (TS)* source
- b. Procedure of raw material inventory from *Tebu Rakyat (TR)* source. This procedure is divided into two systems:
  - 1) Procedure of raw material inventory from *Tebu Rakyat (TR)* source with provides a credit system.
  - 2) Procedure of raw material inventory from *Tebu Rakyat (TR)* source without provides a credit system.

The implementation of raw material inventory procedure at PG Ngadiredjo Kras - Kediri is conducted by several departments. In procedure of raw material inventory from *Tebu Sendiri (TS)* and *Tebu Rakyat (TR)* source, there are Plants Department, Quality Control Department, Receiving Post, and Weighing Post. Each department has different jobs and authorities so that it can minimize the chance to do corruption and increase the accurateness of accounting record.

Related departments during the implementation of raw material inventory procedure have responsibilities. Those responsibilities are:



a. Plants Department

The implementation of raw material inventory procedure from *Tebu Sendiri (TS)* source involve Plants Department to make PCE for every PG Ngadiredjo own land to be delivered for related parties. In procedure of raw material inventory from *Tebu Rakyat (TR)* source, this function has responsibility to send some data related data collection for every land to Quality Control Department. Besides that, Plants Department provides some *SKK* and *SKW* in certain region to control the planting activities. *SKK* of felling and shipping has responsibility to make check sheet, felling schedule, and instruction letter of felling and shipping.

b. Quality Control Department

This department has responsibility to conduct, make, and authorize the RMA. Beside that, in procedure of raw material inventory from *Tebu Rakyat (TR)* source has responsibility to conduct land measurement, make, and authorize sketch of land. And some functionary from quality control department will be placed in weighing post to record the weighing result.

c. Receiving Post

This post has responsibility to check the condition of received sugarcane, record the code of truck, measure brix level, and determine and write the number of queue and lane of enter on ILFS. Input the barcode of ILFS in computer and fill the code of truck and brix level. Some functionary from felling and shipping division will be placed in this post.

d. Weighing Post

This post has responsibility to weigh the received sugarcane and record the weighing result in computer then print out the proof of weigh. Some functionary from installation department will be placed in this post to conduct and control the weighing process. And some functionary from quality control department will record the weighing result in computer and print out the form.

Documents used in the procedure of raw material inventory procedure from *Tebu Sendiri (TS)* source are PCE, BC, RMA, CS, FS, ILFS, and PW. Whereas the documents used in procedure of raw material inventory procedure from *Tebu Rakyat (TR)* source with provides a credit system are LC, IN, LSA, CASM, CA, SL, PEWLS, BC, RMA, CS, FS, ILFS, and PW. In procedure of raw material inventory procedure from *Tebu Rakyat (TR)* source without provides a credit system, the documents used are LC, IN, LSA, CASM, CA, SL, PEWLS, RMA, CS, FS, ILFS, and PW.

Documents used at PG Ngadiredjo Kras – Kediri are good because in creating a form or document, the document will has relevance in conducting the next step of the raw material procedure. Creating a form or document make the accuracy in recording for every activity that is conducted by related functions. Besides that, every document is authorized by competent authorities. The creating and using of documents are already appropriate with the requirement. The number of document used is already created with adjusting the function and benefit for related department in conducting the



activities in order to the documents can be used as basis to conduct next activity which that is a responsibility for related department. The distributing of documents is good because the amount of created document is distributed to related functions which the related function requires it to conduct the next step of the raw material procedure.

System and procedure of raw material inventory at PG Ngadiredjo Kras – Kediri are good. It can be seen from a clear dividing of jobs from every department. Every transaction of raw material inventory procedure is directly recorded by related department in computer so it makes the work performance of PG Ngadiredjo become more efficient and effective. Double recording, both manual and computerize give a lot of advantages for safeguarding the asset. To keep the validity of each document, PG Ngadiredjo also already complete with the signing up of related parties which is in every document or form more than one person or department that know and authorize as validation that the activity is regarding with the factory's regulation.

The description of system and procedure that is described by some experts essentially is regarding the general condition. But in reality, it is regarding the type of company and company policy. Because this research is conducted in sugar factory, the related functions will be adjusted by company itself. According to Mulyadi (2001:554) stated that there are five transactions to form related system and procedure of raw material inventory, which is consists of:



- a. Purchasing. In this transaction will provide the procedure of recording inventory cost of goods purchased. In the PG Ngadiredjo, there is no purchasing transaction. In supplying and fulfill the sugarcane to production process, PG Ngadiredjo acquires it from own land and society land which to collect the sugarcane that come from society land, PG Ngadiredjo apply a production sharing. To get the raw material inventory from society land, PG applies a land enrollment and contract agreement that is organized by *KPTR*.
- b. Purchase Return. It provides the procedure of recording inventory cost of goods is returned to the supplier. When the sugarcane is received, small possibility for PG Ngadiredjo apply a return. Before the sugarcane is felled, the schedule of felling and shipping have been determined regarding with the result of maturity analysis so that when the sugarcane come to PG Ngadiredjo, the condition of sugarcane is appropriate to be produced. Besides that, receiving post also check the condition of sugarcane (there is no *sogolan*, *brondolan*, *pucukan*, *daduk*, *akar*, *tebu muda*, and *brix* under 19).
- c. Usage of Warehouse Goods. It provides the procedure of requesting and warehouse expenditures. PG Ngadiredjo does not apply a storage function so that when the sugarcane is received, the sugarcane will go into production process directly based on the number of queue that is determined by receiving post.

- d. Return of Warehouse Goods. It provides the procedure of additional recording inventory cost of goods sold because the returns of goods warehouse. This procedure is not applied by sugar factory because there is no storage function.
- e. Counting of Physical Inventory. It provides the physical inventory counting system. PG Ngadiredjo apply the counting of physical inventory. For every received sugarcane will be recorded directly in form of weighing result (quintal).

## **2. Analysis of Internal Control on Implementation of Raw Material Inventory Procedure that is Conducted by PG Ngadiredjo Kras – Kediri in Supporting the Effectiveness of Internal Control**

The analysis of internal control on implementation of raw material inventory procedure that is conducted by PG Ngadiredjo Kras – Kediri in supporting the effectiveness of internal control and compare with the theoretical framework, make the researcher needs to hold the certain things in the completion of raw material inventory procedure which is seen from the characteristics of effective internal control.

- a. Organizational structure that separates the functional responsibilities explicitly.

Organizational structure is a framework of distributing the functional responsibility for every organization units that is formed to do prior company activities. The organizational structure of PG Ngadiredjo has divided five main department become sub departments to conduct and control the company activities. The organizational structure of PG Ngadiredjo Kras – Kediri has separated the functional responsibility explicitly. The implementation of raw material inventory procedure at PG Ngadiredjo Kras – Kediri has been formed some functions as follows:

- 1) Plants Department

This department has responsibility to control and check the planting activities. Plants Department has sub department to control the planting activities in certain region such as SKK HGU Sumberlumbu and Litbang, SKK in Kediri Region, SKK of North and South Blitar Region, and for SKK Felling and Shipping make check sheet, decide felling schedule, and make an instruction letter of felling and shipping.

- 2) Quality Control Department

This department conducts the land measurement for raw material inventory procedure from *Tebu Rakyat (TR)* source. Besides that, this department conducts the maturity analysis that is used to decide felling schedule.



### 3) Receiving Post

This post consists of some functionaries from felling and shipping division to check the condition of received sugarcane.

### 4) Weighing Post

This post is conducted by functionary from installation department in weighing the sugarcane and functionary from quality control department in recording and print out the weighing result.

From description above, it shows that PG Ngadiredjo Kras – Kediri has divided the responsibility for every transaction which is involved some departments. It is appropriate with the theory from Mulyadi (2001:165) that stated a function may not be given a full responsibility to do all of transactions. So it can be said that the separation of functional responsibility in implementation of raw material inventory procedure at PG Ngadiredjo Kras - Kediri is good. But there is an overlapping job that is conducted by some functionary in felling and shipping division. In this procedure, felling and shipping division has responsibility to make check sheet, felling schedule, and instruction letter of felling and shipping. Check sheet will be distributed for receiving post to adjust the sugarcane that is received by PG Ngadiredjo in certain time with the schedule of sugarcane receiving that is regulated in check sheet. In receiving post consists of some functionary from felling and shipping division so if there is no a separation related the responsibility of functionary in felling and shipping division and receiving post, it will create a inaccurate report

related the data on instruction letter of felling and shipping and the report that is recorded in computer. Thus, there must be separated with the functionary that is placed between felling and shipping division and receiving post. The researcher suggests putting some functionary from Quality Control Department in receiving post to check the condition of received sugarcane because one of main responsibility for Quality Control Department is keeping the quality of sugarcane that is received by PG Ngadiredjo.

- b. Authorization system and recording procedure that provides sufficient protection on wealth, debt, revenue, and cost.

In organization, every transaction only occurs on the basis of authorization from competent authorities who have authority to approve the transaction. According to Mulyadi (2001:165) stated that every activities in the company requires an authorization from manager of function who has authority to conduct the activity. It is conducted to keep the accuracy of activity and document used in order to the all of activity can be supervised and known by highest until lowest level. The authorization system that is applied by PG Ngadiredjo Kras – Kediri in implementation of raw material inventory procedure:

- 1) Sketch of Land is created by quality control department and it is authorized by Manager of quality control department, GPS operator, and land owner, foreman of related region, coordinator of related region, SKW, and Assistant Manager of related region.



- 2) Picture of Effective Wide and Location of Sketch is authorized by land owner, foreman of related region, coordinator of related region, SKW, and Assistant Manager of related region but there is no authorization from manager of quality control department. Because of this document is created by Quality Control Department so it should be authorized by Manager of quality control department.
- 3) Contract Agreement that consists of LSA, CASM, and CA. Those documents are created by KPTR. LSA is authorized by chairman of KPTR, General Manager of PG Ngadiredjo, and land owner. CASM is authorized by General Manager of PG Ngadiredjo and land owner. It should be authorized by chairman of KPTR also. CA is authorized by chairman of KPTR, General Manager of PG Ngadiredjo, and land owner.
- 4) Book of *Cadongan* is created by SKW in related region. BC is authorized by SKW and foreman in related region.
- 5) Result of Maturity Analysis is created by quality control department. It is authorized by Manager of quality control department, RC on Farm of quality control, and coordinator of maturity analysis.
- 6) Check Sheet is created by felling and shipping division. It is authorized by coordinator of felling and shipping in field, SKW, and SKK of felling and shipping. Because of felling and shipping division is part of plants department so it should be authorized by Manager of Plants Department.



- 7) Felling Schedule is created by felling and shipping division. It is authorized by land owner, coordinator of felling and shipping in field, *SKW*, and *SKK* of felling and shipping. Because of felling and shipping division is part of Plants Department so it should be authorized by Manager of Plants Department.
- 8) Instruction Letter of Felling and Shipping is created by felling and shipping division. It is authorized by *SKK* of felling and shipping division and it should be authorized by Manager of plants department.
- 9) Proof of Weigh is created by weighing post. It is authorized by functionary and driver.
- 10) Planning of Cost Estimation is created by plants department and there is no authorization from Manager of plants department and related parties. It should be authorized by Manager of plants department and General Manager of PG Ngadiredjo because this document will be delivered to management office so it should be better if both of parties can authorize the document. Besides that, according to Mulyadi (2001:82) stated that one of basic principles that underlying in designing a form is write name and address of the company for communication with outside party.

From description above, the authorization system that is applied by PG Ngadiredjo Kras – Kediri in implementation of raw material inventory procedure is good but there are some documents which are required an authorization from manager of function which the function make and

conduct the activity. It is conducted to keep the accuracy and validity the information that is written in the form because of those forms is sent or used by other department or party to conduct the next step in raw material inventory procedure. Thus, authorization system will assure the resulted document become credible and it will become good input for accounting process. The documents that must be improved the authorization system are PEWLS should be authorized by Manager of quality control department, CASM should be authorized by chairman of KPTR, Check Sheet and Felling Schedule should be authorized by Manager of Plants Department, ILFS should be authorized by Manager of plants department, and PCE is authorized by Manager of Plants Department. That is conducted to assure a reliable document. Thus, authorization system will assure the resulted document become credible and it will become good input for accounting process.

- c. A healthy practice in conducting the duties and functions of each unit in the organization.

The distribution of functional responsibility and authorization system that have been applied will not carried out well if there is no creating some manners to assure healthy practice in its conducting. In creating a healthy practice in functional responsibility distribution and authorization system, PG Ngadiredjo has implemented some manners which those manners will assure in creating a healthy practice so that it can be said that PG

Ngadiredjo has implemented good manners in creating the healthy practice. The manners that is conducted by PG Ngadiredjo such as:

- 1) Once a month, some parties from management office in Surabaya (PTPN X) always conduct the surprised audit at PG Ngadiredjo Kras – Kediri. It is conducted to check and monitor the activities that are conducted by PG Ngadiredjo employee in doing each responsibility. Surprised audit with an irregular schedule will encourage employees perform the duties in accordance with predetermined rules. If there are some frauds that are conducted by one or more employee, it could be detected.
- 2) In conducting the all activities and making some documents during the implementation of raw material inventory procedure, it is conducted by more than one department based on each responsibility. There is relevance for every activity and document that is conducted and made in raw material inventory procedure. It means that, the next step can be conducted if there is a report or notification previously.
  - a) The measurement of land is conducted by quality control department will be realized of there are some data that is received from KPTR.
  - b) After plants department sent some required data, the maturity analysis will be conducted by quality control department. And then the result of maturity analysis will be distributed for sub division of plants department especially for felling and shipping



division to make some documents such check sheet, felling schedule, and instruction letter of felling and shipping.

- c) Some documents are made by felling and shipping division will be distributed to receiving post to check the received sugarcane.
  - d) After some of provisions have been checked, the received sugarcane will be weighed by weighing post. It will issue proof of weigh for related party in order to it can be a base to control the amount of received sugarcane by PG Ngadiredjo.
- 3) PG Ngadiredjo has implemented a taking for leave for every employee. It is conducted by company to avoid some fraud that is conducted by certain employee in order if there is a fraud, it will be known by employee who replace for the time being directly.
  - 4) In controlling the form that is made by related functions, the using of numbered form has been implemented. The numbered form is regarding with the number of contract and category for every land (*TS* or *TR*). Because of the sugar factory conduct the procedure of raw material inventory during milling season so the documents also are given the period of activity (i.e., MT 2013/2014). Thus, the saving of document is regarding the number of contract, category of land, and period of activity. So it will make easy for PG Ngadiredjo to control the existence and accuracy of document.

5) Quality and ability of employee is appropriate with the responsibility

Adequate level of education is required by company to be able carry out and complete the job. In the selection of employees, PG Ngadiredjo has implemented well. The selection was selected in accordance with the provisions and give the best test that appropriate with the job will be given to the applicant. The quality of employee at PG Ngadiredjo is already appropriate with its responsibility and the selection process also under the supervision of management office. Besides that, to deepen and increase the knowledge about PG Ngadiredjo and sugar factory, there is a training program for the employee in order to the employee has a deepest knowledge and understanding about the things related sugar factory sector

