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**PLANTATION EVALUATION IN INDONESIA:
A CLASSIFICATION TEMPLATE AND ANALYSIS
OF PROFITABILITY**

by

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ABSTRACT

The purposes of this study were to develop a template to reduce errors and time needed to classify plantations in Indonesia; and to analyze the correlation between the profit of the firm and plantation performance level.

This study uses dBase IV to develop the descriptive classification template and quantitative statistics (Discriminant Analysis) to evaluate the relationship between a firm's classification and profits. Data used were obtained from the Directorate General of Estate Crops, Indonesian Ministry of Agriculture in 1992.

The study found that processing the plantation classification data using the template increases data processing accuracy and is about 9 time faster than when classification is done manually. The study also found that several factors influence the profitability of the firm. The variable, knowledge of the leader, makes the highest share contribution to a firm's profit. Finally, this study recommends that the Directorate General of Estate Crops should review the weights currently assigned to variable in determining the plantation performance and use the template for processing the classification data in order to reduce data processing bias and the time required to classify plantations.

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I. INTRODUCTION

The plantation sub-sector plays an essential role in Indonesian economic development. Not only do its products, contribute to export earning, but also they are an important raw materials for domestic industry.

The role of exports as a source of export earning will become increasingly important as the stock of petroleum oil and timbers, currently the main sources of export earning, decreases in the future. In addition, the plantation sub sector also contributes to the economy by providing job opportunities, supporting the government's transmigration program and contributing to regional development.

Indonesian plantation policy is directed not only at increasing plantation production output, but also at improving management in the sub-sector. The concept of a plantation as a business is defined as

"a large scale production of commodity crops by a uniform system of planting, cultivation and often on site processing under a central management and with a trained laborer force, sometimes living in estate housing in a environment controlled by direction and training of its work force by the use of technology of detailed routine working and supervision" (Graham, 1984)

The success of the plantation business will depend on the systematic and regular applications of series of well defined management principles. To insure that this sector

continues to contribute to development, the quantity of production management must be maintained at a high level. Performance can be determined by comparison to a specific standard. Using this standard, the minimum requirement for plantation organization and management can be applied to monitor a firm's performance.

1.1. Problem Statement

Due to the importance of the plantation sub-sector and its projected increasing contribution to Indonesia's economic growth in the near future, there is a need to intensify extension support to this sub-sector. To better service this sub-sector, it is necessary to determine the parameters that indicate the performance level of each plantation. The Ministry of Agriculture has drawn up a classification for plantations. This classification is a performance rating, based on the performance of the plantation over a three consecutive years period. To quantify performance, a questionnaire is used to collect data decreed by the Ministry of Agriculture.

Following the Ministry of Agriculture's guidelines, the performance rating is determined by summing the scores for the following components: management, estate field, crops' processing, social service, and environmental impact (waste management). Each of these components consists of several sub-groups in the questionnaire.

Each plantation's score is calculated as a weighted summation of both the item group, and sub-group level. The first stage of analysis is carried out at the provincial level, and these results are then compared against the results of calculations carried out by the Directorate General of Estate for the same data. If discrepancies between those two rating was found, intensive consultation with provincial-level staff is necessity. Because the "scoring" assessment is carried out manually, it is exhaustive and time consuming.

In addition, during data processing the analyst must refer to multi-functions and tables of values that specify the appropriate value to assign to evaluate the plantations' performance. Errors in referring to these tables may result in inconsistencies in the classification and bias the plantations rating.

Thus, there is a need to develop a more efficient process for calculating management "score" in order to both reduce the time required and improve the accuracy of these calculations.

1.2. Objectives

The general objective of this study is to develop a procedure to speed up and increase the accuracy of the classification process; and to analyze the relationship between the profitability of the plantations and its

performance level (i.e. score). The specific objectives are to:

1. Develop a plantation classification template;
2. Assess the correlation between profit and each group of factors that affects plantation's performance rating.

1.3. Hypothesis

1). An automated data entry procedure, utilizing computer technology, will reduce data processing time and reduce human error associated with manual calculations.

2). Plantations that earn high profits have a high performance level for all factors included in the management scale.

1.4. Organization of the Thesis

This thesis consists of four chapters. Chapter One describes the need for the study; and presents the problem statements, objectives, and hypotheses to be tested. Chapter Two reviews the Indonesian plantation sub-sector, focusing on the historical background; role of plantation crops sub-sector; concept and characteristics; size and distribution of plantation enterprises, and government policies related to plantations.

Chapter Three presents the plantation classification in general, followed by a description of the plantation

classification process, a description of the automated plantation classification template, and analysis of the correlation between profit and performance level of each variable using Pearson's product-moment correlation and discriminant analysis.

Finally, Chapter Four summarizes the study, reviews the results, and provides limitations, and recommendations.

II. PLANTATION CROPS SUB-SECTOR

This chapter, describes the plantation crops sub-sector in Indonesia. The first section reviews general information about the plantation crops sub-sector, with the emphases on the historical background, the role of plantation crops sub-sector, and the characteristics of plantation enterprises. The second section briefly presents policy aspects.

2.1. Plantations in Indonesia

2.1.1. Historical Background.

The plantation system involves the production and marketing of plantation crops by the enterprises (Beckford, 1983). Historically, these systems were found chiefly in developing countries in the Caribbean, some parts of Africa, Fiji, and Malaya. Dominated by an expanding Europe, the plantation system were developed as a part of the colonial economic system of western countries (Beckford, 1983; Bernstein & Pitt, 1974; Courtenay, 1981).

The plantation system in Indonesia, as well as in other developing countries, goes back to the 1600s. In Indonesia, the development of plantations was close related to the Dutch colonial economic system. Almost all Indonesian plantations were owned and controlled (economic, social, and political instruments employed) by the Netherlands East Company and created to produce export crops. Plantations

were established as part of the Dutch colonial government's policy to maintain an export-oriented, low wage economy, which gave Dutch estates much of their competitive advantage in the world market for raw material. Initially, most plantations were established in Java. Then, in the late of 19th. century they expanded to other islands (Kartodirdjo & Suryo, 1991).

In 1830 the new governor, Van den Bosch, introduced the "cultuurstelsel" system in Java as one solution to Dutch financial pressure resulting from the loss of Belgium. This was basically a forced cultivation system which required the peasants to deliver specified crops (plantations crops) to Dutch's company (Bernstein, 1974; Courtenay, 1980).

After Independence in 1945, the "cultuurstelsel" system peasants became Indonesian smallholder. Moreover, in 1958 Indonesian government nationalized Dutch-owned enterprises, including plantation. At this time, over 542 Dutch plantations -- three quarters of foreigner's plantation enterprises -- were brought under Indonesia government ownership. These nationalized plantations were managed by "Perusahaan Perkebunan Negara", a government corporation, and are referred to as government plantation enterprises. Some of the remaining of foreigners' plantations became private plantation enterprises (Direktorat BUPP, 1981; Mackie, 1961; Mubyarto, 1992).

2.1.2. The Role of Plantation Crops Sub-sector

The plantation crops sub-sector has an important role in the Indonesian economy, although its contribution to gross domestic product (GDP) is relatively small.

The plantation crops sub-sector's share of GDP (1990) was only 3.47% at current market price (Table 1). Of this total, "plantation enterprises" contributed for about 26% and the other 74% came from "smallholders" (CBS, 1991). However, the plantation sub-sector has a greater economic and social than its contribution to GDP. Firstly, the plantation sub-sector ranks third in the production of export commodities; after petroleum oil and forestry (CBS, 1990). In addition, plantation crops are a renewable resources, while petroleum is a depletable resources. Thirdly, this sub-sector absorbs a relatively high percentage of employment, because it involves growing crops that are difficult to mechanize, especially tree crops.

Indonesian export commodities can be categorized into two main groups. The first group is petroleum and petroleum products, while the second group is agricultural commodities. During the 1970s, petroleum exports accounted for approximately 50% of export earnings; and then, increased to about 70% in the mid-1980s. However, by the end of oil boom period (1987), petroleum export earning had decreased to less than 50%. During this period, the share

of agricultural export earning decreased from 25.4% in 1973 to 9.9% in 1983, but in 1987, its share again increased to about 17.4%. Among agricultural commodities, plantation crops (estate crops) commodities contribute the highest share value to the total agricultural export earnings (Table 2.).

Table 1. Gross Domestic Product By Sector at current market price, selected years (percentage)

Sectors	1973	1983	1990
Agriculture	35.9	24.01	21.78
Food Crops	NA	15.00	13.18
Estate Crops	NA	3.62	3.47
Livestock	NA	2.38	2.31
Forestry	NA	1.35	0.98
Fisheries	NA	1.66	1.85
Mining and Quarrying	10.10	18.95	14.54
Manufacturing Industries	11.50	11.14	19.52
Electricity and Water Supply	0.60	0.71	0.64
Construction	4.50	6.24	5.48
Trade, Hotel and Restaurant	18.60	16.30	16.26
Transportation & Communicatio	7.40	5.40	5.58
Banking & Finance	1.90	2.77	4.00
Public and other services	9.50	14.48	12.20
TOTAL	100	100	100

Sources: CBS, selected years

NA = data not available

Table 2. Agricultural export value by sub-sector,
1983-1987 (US \$ million)

Sectors	1973	1983	1987
Agriculture			
Livestock	NA	23.7	46.7
Food Crops	3.8	33.0	123.3
Fisheries	78.9	257.0	475.5
Estate Crops	732.0	1,782.4	2,331.3
Percentage	22.8	8.4	13.6
Total Agriculture	814.7	2,096.1	2,976.8
Percentage	25.4	9.9	17.4
Petroleum & petroleum products	1,608.7	16,140.6	8,556.1
Percentage	50.1	76.3	49.9
Others	777.4	2,909.2	5,602.7
Percentage	24.2	13.8	32.7
Total Indonesia	3,210.8	21,145.9	17,135.6
Percentage	100	100	100

Source: CBS, selected years.

NA = data not available

In 1980 Indonesia had a total populations of 147 million people; which increased to 164 million people in 1985. Out of this total (in 1985), 64 million people or 41% were in the labor force (Table 3). This large number is a national asset that can be used to increase economic growth. On the other hand, it represents a problem that should be considered due to the difficulties of providing employment opportunities for an expanding population (Departemen Pertanian, 1990).

Table 3. Agricultural labor force, by sub-sector, Indonesia,
1980 and 1985 (thousand people).

Sub-sectors	1980	1985
Livestock	894	1,383
Fisheries	844	1,961
Estate Crops	2,247	3,447
Food Crops	27,797	28,047
Total Agriculture sector	31,782	34,837
Percentage	56.5	54.6
Other sector	19,409	27,620
Percentage	34.5	43.3
Job seeker	5,075	1,368
Percentage	9.0	2.1
Total Indonesia	56,266	63,861
Percentage	100	100

Source: Departemen Pertanian, 1990

The agricultural sector absorbed 56.5% of the total labor forces in 1980, but decreased to 54.6% in 1985 (Table 3). Since 1980, the plantation crops sub-sector has been the second most important agricultural sector (after food crops) for absorbing the labor forces.

2.1.3. Plantation Enterprises

In this section briefly discusses concepts and characteristics of plantations, followed by a discussion of the size and distribution of plantations in Indonesia.

2.1.3.1. Concepts and Characteristics

Plantations in Indonesia are large-scale agricultural enterprises with extensive land areas; which absorb a large capital investment; employ a large number of labors; produce commercial crops for export to world market; and are managed using business principles (Kartodirdjo & Suryo, 1991).

Although plantations are usually equated with large-scale methods of production, opinions differ on the minimum size necessary to qualify an undertaking as a plantation. Plantations are defined differently in various countries (ILO, 1989). In Malaysia, for instance, plantations are defined as agricultural holding with more than 40 hectares; which are planted to rubber, oil palm, or cocoa; and under a single legal ownership (Courtenay, 1981). In contrast, India applies the term "plantation" to any land of five hectares or more planted (or intended to be) to grow tea, coffee, rubber, chincona, or cardamom (ILO, 1989).

In Indonesia the term "plantation" refers to an enterprise (whether government or privately ownership) holding land, contiguous or non-contiguous, totaling 25 hectares or more which is planted to commercial crops such as rubber, cocoa, coffee, oil palm, coconut and sugarcane. In contrast, firms with a land of less than 25 hectares are categorized to "smallholder" plantations (Direktorat. BUPP, 1985).

National land policy limits private individuals from owning more than 25 hectares of land. Therefore, estate sector enterprises operating more than 25 hectares must have a legal land license known as a "hak guna usaha". This license authorizes an agricultural enterprise to cultivate a specific area of the land in the indicated commodity. Licenses are given for a specific period of time (25 - 35 years), depending on the type of commodity being cultivated. When the land license expires, it can be renewed if the government (i.e., Directorate General of Estate Crops) indicates that the land license holder shows an ability to use the land optimally. Otherwise, it may be transferred to another utilization or to another company (DitJen. Perkebunan, 1984).

The development of plantations requires a large initial capital investments and continued capital expenditure without any return for a period ranging from five to seven years after initial land clearing (Luna, 1963), depending on the commodity planted. For example, a rubber tree cannot be tapped for latex until after six or seven years, so does coconut to bear a fruit. In addition to the capital needed to establish a new estate, additional capital is required for development, rehabilitation, and modernization. Hence, plantation enterprises are forced to take certain measures to insure the success of its financial ventures. Trained and efficient managers, supervisors and field-men must be

hired and proper land management methods and techniques must be adopted. To insure that land is carefully utilized in an attempt to gain and maintain efficient and maximum production.

The level of investment in estate agriculture has tended to fluctuated with the level of profitability, which depends on the prices of plantation products. Since a significant proportion of total production is exported, plantation enterprises are particularly vulnerable to world price fluctuation.

The plantation crop sub-sector employs a large labor force, both in absolute terms and relative to other sectors. When workers dependents are also taken into account, the contribution of the sub sector to total national employment and incomes is substantial (Tiffen, 1990)

While large-scale plantations provide workers with stable employment, usually all year and some times for life, most employ seasonal workers, who often account for a substantial proportion of the work-force in peak periods. These laborers are generally drawn either from the surplus population on the plantations or from the surrounding rural areas where small farmer and agricultural workers are usually ready to supplement their earnings by seasonal work. The ratio of permanent to seasonal employment varies by the type of crop produced. For example rubber, oil palm and tea are more likely to generate year round employment because

of their production cycle is continues. In rubber cultivation, trees are tapped regularly throughout the year. Similarly, in tea cultivation where the tea plant is flushed continuously, plucking takes place throughout the year. Overall, in Indonesia the ratio of permanent to non-permanent workers on the large plantations is about two to one. However, for several commodities such as sugarcane, plantations employ ten times more non-permanent than permanent workers. (Sajhau & Mural, 1987; ILO, 1989)

While labor intensity declines as the size of holding increase, total labor requirements vary from crop-to-crop. In Indonesia, growing coffee requires a labor input of 1.83 ha/worker, while growing tea and rubber/palm oil requires 0.63 and 3.3 ha/worker, respectively (Goldthorpe, 1983).

Since plantations are relatively large-scale operations, they require well developed management. Graham and Floering (1984) endorse a view of plantations as essentially a management system based on industrial methods of production.

Furthermore, with the evolution of new technologies through research and development activities, training requirements have tended to increase in recent years, particularly for managers, supervisors and field-men (Luna, 1963).

A major responsibility of the management system is to plan and direct research, development, and training consistent with the objective of increasing efficiency.

In Indonesia, the hierarchy of plantation organization is divided into four levels -- administrators, staff, non-staff, and laborers. Each level has a distinct division of task and authority. While the labor may include skilled worker, they are not required to take managerial decision (Soetrismo, 1984).

2.1.3.2. Size and Distribution of Plantation Enterprises

Plantation crop production can be categorized in to two types of enterprises: plantation and smallholder. Smallholder enterprises are small-scale production units managed by farming families. The average holding is not more than two hectares per family. In contrast, plantations are large-scale production units, operated by corporate enterprise or other legal institutions authorized to use the land under the right of exploitation law. Plantations range from a few hundreds to several thousand hectares, depending on the conditions specified in its land license as discussed in the previous section.

Plantation development in Indonesia had expanded and contracted in response to the political situation since the Dutch colonialization period until Indonesians independence.

However, in 1967 new capital investment policies were enacted, such as the amendment of Act No. 1 of 1967, which regulates foreign investment and the amendment of Act No. 6 of 1968, which regulates domestic investment. After these new laws were enacted, the plantation sub-sector increased gradually (Dep. Information, 1990; Mubyarto, 1992.)

In 1963, the total plantation area was 1.3 million hectares. Over the next ten years (1963 - 1973), it increased about 16%. Over the period of 1973 - 1983 the area increased by 23%, and over the last ten years period (1983 - 1992) the increasing was 26%.

Table 4 shows that plantation enterprises are mainly located in Sumatera, followed by Java. The plantation area in each island (Table 4) has increased rapidly, except in Java where the area has decreased due to urbanization and urban development. However, in terms of new developments, in recent years Kalimantan has experienced the most rapid expansion, followed by Sumatera.

Table 4. The development of plantations area by islands,
Indonesia, 1963 - 1992

Islands	Area (1,000 Ha)			
	1963	1973	1983	1992*)
Sumatera	830.70	995.90	1,250.00	1,961.96
Java	463.60	616.10	608.60	505.42
Kalimantan	37.30	30.70	122.90	209.40
Sulawesi	16.60	26.30	116.90	181.65
Others	6.30	4.70	72.80	81.01
TOTAL	1,354.50	1,673.70	2,171.20	2,939.44

Source: BPS, Sensus Pertanian 1983

*) DitJen Perkebunan, Klasifikasi Perkebunan
Besar, 1993

The major commodities planted in Indonesian plantations are oil palm, rubber, coconut, sugar-cane, tea, cacao and coffee. Oil palm has the largest area planted, followed by rubber (Table 5). However, coconut area has experienced the highest annual increase rate averaging 13.0% over the period 1984 to 1989, followed by cacao (10.8%), oil palm (7.5%), and tea (3.7%). In contrast, the area planted of coffee has remained relatively constant, while the area planted of sugarcane and tobacco has declined annually by 1.9% and 2.3%, respectively, over the same period.

Table 5. The development of major plantation commodities' area planted, Indonesia, 1984 - 1989.

Commodity	Area (1,000 Ha)						1)
	1984	1985	1986	1987	1988	1989	
Oil palm	471	478	477	526	631	670	7.54
Rubber	475	491	507	488	468	522	2.06
Coconut	53	56	56	68	78	96	12.97
Sugarcane	105	114	87	94	101	91	-1.90
Tea	67	70	72	70	74	80	3.68
Cacao	39	41	40	57	59	62	10.75
Coffee	57	57	46	53	55	55	-2.33

Source: DitJen Perkebunan, Statistik 1989

Note : 1) Average percentage change per year (1984-1989).

In contrast to area planted, plantations production for those major commodities shown different annual rates of increase. Over the period of 1984 - 1989, the average sugarcane production experienced slow rates of increase (3.5%) due to competition for land utilization with other agricultural commodities, especially rice (Departemen Pertanian, 1990). Similarly, rubber production also has experienced a slow annual rate of increase (3.3%). On the other hand, coconut has the highest annual rate of increase (39.5%) in the same period (Table 6), followed by oil palm (9.6%), and coffee (9.5%).

Table 6. Production of major plantation commodities,
Indonesia, 1984 - 1989 (1,000 ton)

Commodity	1984	1985	1986	1987	1988	1989	1)
Oil palm	1,393	1,501	1,635	1,825	1,690	1,942	9.60
Rubber	329	335	350	335	393	400	3.27
Coconut	13	15	25	44	41	60	39.51
Sugarcane	413	449	447	432	459	462	3.47
Tea	102	97	100	101	110	123	6.19
Cacao	20	25	23	24	25	27	6.70
Coffee	24	23	28	21	24	28	9.48

Source: DitJen Perkebunan, Statistik 1989

Note : 1) Annual average percentage change (1984-1989).

2.2. Policy Aspects

National development policy gives high priority to agriculture. The goals of long term national development are to create a balanced economic structure, in which of agriculture complements the industrial sector. Generally, agriculture's major contribution to national development has been expressed in terms of guaranteeing food security for the population, creating job opportunities, complementing the non agricultural sector through providing industrial raw material, and producing export earning by exporting agricultural products.

In compliance with national development, plantation crops have an important role in national development,

especially in agricultural development. Therefore, plantation policies are directed to an increasing output, improving efficiency, and developing the plantation sub-sector.

Specific policies applied to the plantation estate enterprises are directed at arrangements, servicing, and motivating plantation enterprises to contribute to develop through providing facilities and financial capital. In addition, the strong plantation estate enterprises are encouraged to assist the weak one through several aspects that benefit both parts.

In order to implement those policies, the government has taken several actions, including developing a classification system for plantation enterprises. This classification system is designed to evaluate the performance of each plantation enterprises every three years including the enterprises' management, estate fields, crops' processing, social services and environmental impact. These results are used as a basis for deciding what follow up guidance is necessary to improve the management of plantation enterprises.

III. PLANTATION CLASSIFICATION

This chapter presents general information about plantation classification, the process for carrying it out, the template built to speed up classification, and analysis of the correlation between profit and the performance level of plantation estate enterprises.

3.1. Plantation Classification in General

In the attempt to develop the plantation estate enterprises, government uses the systems approach. Viewing the plantation estate enterprises as a system, means that we see all activities faced by each enterprise as a whole, from the production sub-system, to processing, through product marketing sub-system, including exports.

Successful plantation estate enterprise development basically depends on two things: the ability of its managers (as an actor in the system) to conceptualize and operate the system, and the readiness of government institutions to fulfill its function as a system's counselor (Direktorat BUPP, 1981).

Intensive and continuous guidance are needed to strengthen plantation estate enterprises and thereby improve the estate sub-sector. To monitor performance, government collects and analyzes a comprehensive set of data in order to evaluate the performance level of each plantation estate

enterprise. Data are collected to assess performance and condition of management at several levels including--the estate field, processing, social services, and environmental impact, over the preceding three-years period.

To obtain this information, the Directorate General of Estate Crops-"classifies"-(i.e. evaluates) plantations every three-years. Prior to 1990, classification was carried out every five years.

Plantation classification is carried out for all plantation estate enterprises exceeding 25 hectares, that have a land license (i.e. HGU-the right of exploitation law) required to cultivate this area, and are organized as legal corporate bodies.

The output of this classification is uses by both the central and regional government as a basis for establishing guidance policies for plantation estate enterprise development. For instance, in deciding to issue a land license both for renewing the expired license or expanding the area, government first consider the performance level of the plantation enterprise. If a plantation enterprise has a low performance level (i.e. fifth class) its license would not be renewed for the same enterprise; and that area would be transferred to another plantation enterprise or be used for another purposes based on a Decree of Ministry of Agriculture (Menteri Pertanian, 1990). Plantation classification information is also used in providing labor

force and capital aid (credit). Since plantation estate enterprise are located in remote area, one of the problem faced by the enterprise is finding enough labors. For enterprises that have relative high performance levels, government tends to give assistance in providing that labor force through government programs (i.e. government transmigration). Moreover, government provides financial aid for the plantation estate enterprise that needs capital for field rehabilitation, replanting or new-planting. This aid can be as a credit subsidy (i.e. credit with low interest rate), given to the plantation estate enterprises that are classified into the third class and above (DitJen Perkebunan, 1987).

Data collected are categorized into four sub-systems, based on the component where the information is obtained. The first component is the management sub-system. This sub-system consists of information about overall enterprises management, which is grouped into several clusters, covering firm leaders' characteristics, financial management marketing management, firm planning and evaluation, and manpower.

Information about the characteristics of firm leaders, which consist of the board of directors, directors, and field managers, cover the knowledge level of the firm's leaders, including their formal education, non-formal education and experience. Logically, the better the level

of their knowledge, the higher the ability to manage their business.

Man-power information is collected about all employees in all offices (main and branches offices) and field labors. In this case, the main purpose of the evaluation is to evaluate the effectiveness of the enterprises in using its labors.

The second sub-system is the estate field. The information collected is designed to assess the condition of the field. It can be divided to several clusters, including land used, age crops composition, age crops begin production, crops' cultivation (including fertilizing, pest control and pest management, cover crops, and growth regulators), and yield.

The land used information is used to evaluate land utilization related to the land license given. The higher the land used for plantation purposes (i.e. plants, factory, housing, and offices), the better the performance rate of land used.

The age crops begin production is the age of the plants when they started to be productive. It reflects the quality of cultivation given to the crops. Although every commodity has a different age when it starts to be productive, an efficiently cultivated plantation start to produce at the age that is relatively close to the age standard.

The third sub-system is crop processing. In this sub-system, information is collected to assess the processing facilities, including the quality control facilities, raw material used, product output (which refers to the quality of the final product), and by-product and waste management practices applied in the corresponding plantation estate enterprises.

The raw material information is collected to determine where the products from the fields are processed. For example, the plantation estate enterprise may process its field products (raw material) in its own factory, in another factory (with or without contract), or it may be sold without any processing.

The last sub-system is designed to assess social services provided including social services provided for employees and their families (i.e. work facilities, and health facilities), extension, assistance for smallholders surrounding the plantation, and environmental impact (waste management).

The evaluation score for each sub-system will range from 1 to 100, depending on the situation in the field compared to the standard that has been determined. The enterprises classification score is calculated as the weighted sum of the sub-system score with each sub-system given a different weight. The sub-system weight is based on the government's assessment of the relative importance of

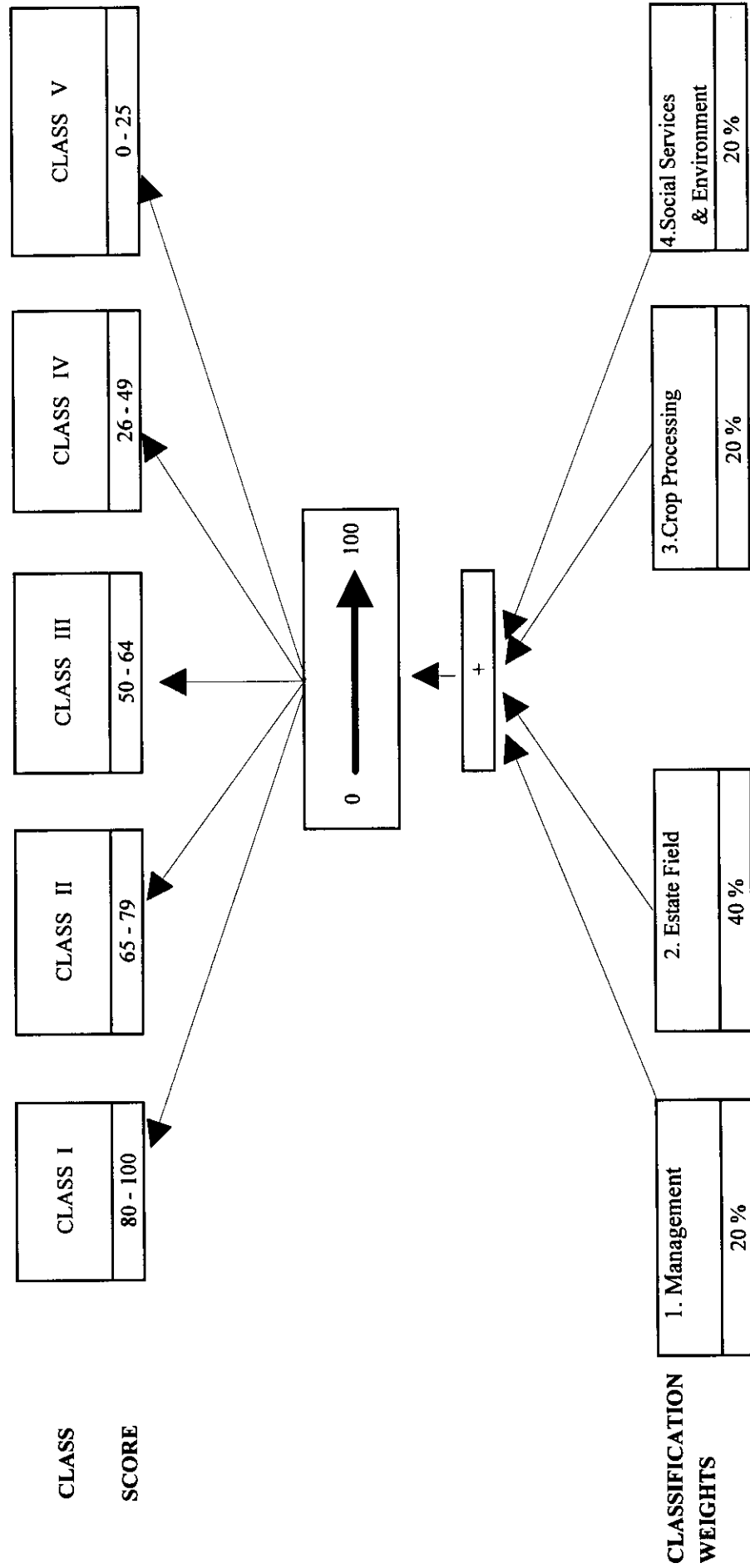
each sub-system to the overall efficiency of plantation estate enterprises. Since the field estate sub-system is considered most important, this sub-system account for 40% of the total score. The other three sub-systems have the same weight (20%) in the total score (Figure 1). The complete breakdown of the distribution of scores is presented in the Appendix I.

3.2. Plantation Classification Process

Plantation classification is carried out jointly by the Directorate General of Estate (central government) and the Province Plantation Office (regional government). The distribution of jobs are as follows. The central government prepares the questioner and provides data processing guidance; briefs the regional staff on the procedure for carrying out the census taking (survey), fills in the questionnaire and processes the data; analyzes the preliminary result of the classification analysis carried out by the regional government; provides feed back to the regional government regarding their preliminary result; discusses the final result of the plantation estate enterprises; and finally, determines the class level of each plantation estate enterprises and communicates those official result by letter to the Director General of Estate.

FIGURE 1

PLANTATION CLASSIFICATION ASSESSMENT CATEGORIES



The regional government is responsible for reproducing the classification questionnaire, carrying out the census taking at each enterprise, processing the data collected (based on the guidelines given by the central government), sending all of the computed questioners and the data processing results to the central government, informing each plantation enterprises regarding its temporary class level after it is corrected by the central government, and giving the plantation enterprises a chance to respond and give their suggestion and comments.

In addition to the job distribution reviewed above, based on the sequence of time, several steps are required in conducting the plantation classification. Classification begins with preliminary preparation activities, such as constructing the concepts required to measure plantation estate performance, establishing guidelines for data processing, and creating questionnaires. In this step, the basic theory of the plantation classification method is also discussed. An important objective is to insure that plantation classification provides guidance for plantation estate enterprise improvement and thereby contribute to the country's five-years development plan.

The next step is training all staffs -- who are going to conduct the census taking -- regarding the method of filling the questionnaires and processing data collected. After the census taking is carried out, these data are

processed at each corresponding province by the regional staff.

Data processing is guided by the procedure set by the Ministry of Agriculture. This process establishes a temporary class level for each plantation estate, which is then reexamined carefully by the central government before each plantation is informed of its score.

3.3. Plantation Classification Justification Template

The objective of building a template for plantation classification assessment is to improve the accuracy and efficiency of the classification process. Use of a template will reduce errors that might occur during data processing and will reduce the length of time required for data processing and determining a plantation's class level score.

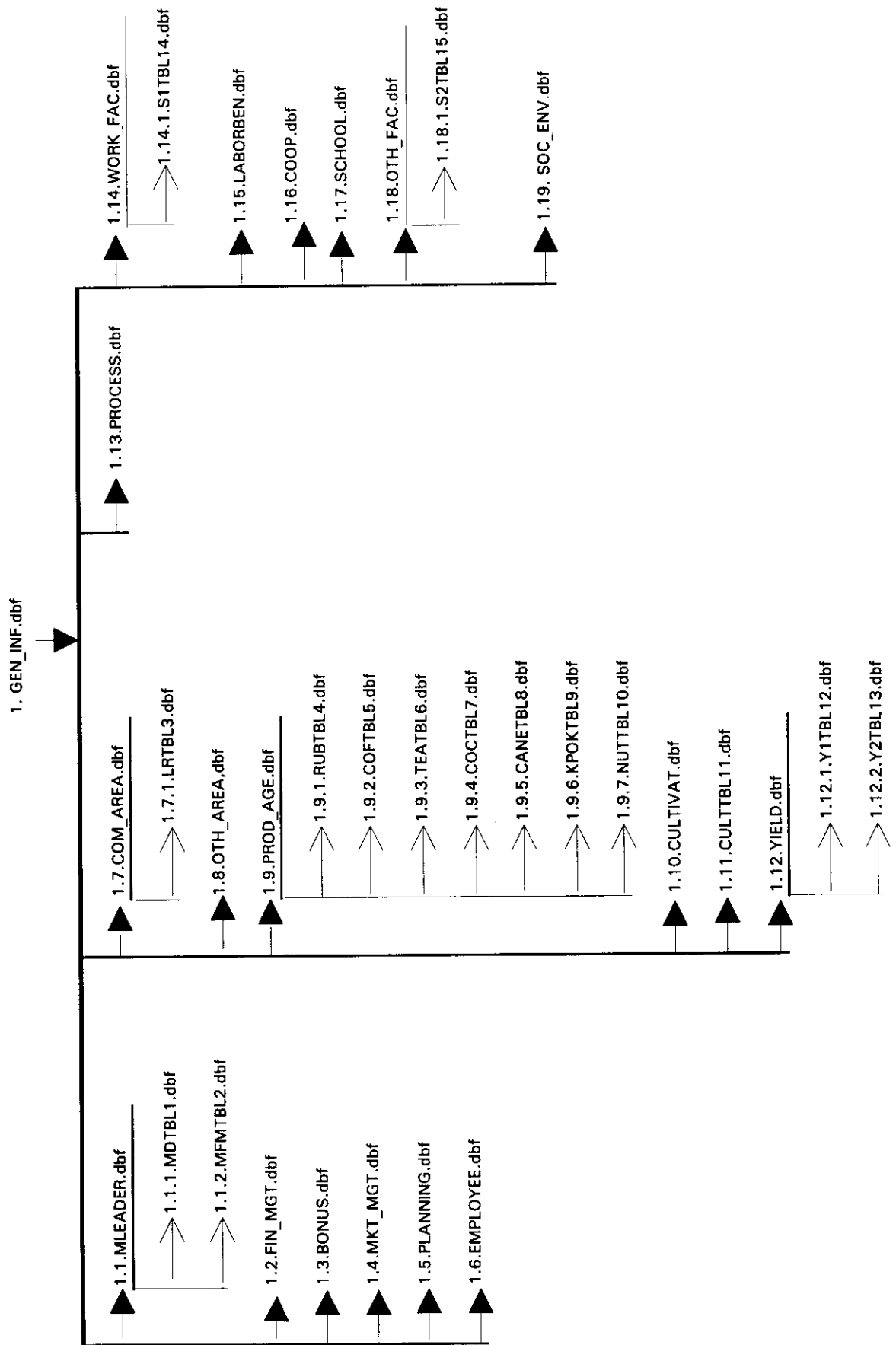
The template was built by using the dBase IV programming language. To handle all of the data collected in the questionnaire, the format of the original questionnaire used in the plantation classification was first simplified. Then, a template was created (Appendix II), which included 19 data base files, one for each type of data. To accommodate the standard score values used for evaluating the performance of each assessment variable, 15 additional data base files were created. Once created, these files filled are referred to for calculation scores

based on information provided in the questionnaires. These standard score data base files were created separately from the body of the program, (i.e. component standard for evaluating the knowledge of the leaders, component standard for evaluating the crops' age and its yield) to reduce the complexity of the template. On the other hand, standards that were not too complicated were entered directly into the body of the program. The data base files use a hierarchical structure where a primary data element has many secondary data elements linked to it at various level (Mandel, 1989). The complete structure of those data base files is presented in the Appendix III, while the chart for these data base files is presented in the Figure 2.

The plantation classification template consists of four sub-programs. The first program (main program) is used to select the menu in the template. In addition, this program also link to the other three sub-programs to the main program.

The second program is for data management input. This program is mainly used for inputting the data from the questionnaire, without making calculations or manipulating the data. The actual data is entered in the 19 data base files created before.

FIGURE 2
CHART FOR DATABASE



The third program calculates the rating score. This program evaluates the performance of every variable by comparing each plantation's score with the standard used (Appendix IV). This program generates the total score for each enterprises, which is used to determine the class level for this plantation enterprise.

The last part of the program is the output generator, which produces two type of report formats. The first one is the report that summarizes all the class level for the plantation, while the second one is the report that presents the score for each variable. The sample of these report formats are presented in the Table 7 and Table 8, respectively. The procedure for building the template can be summarized as in the Figure 3, while the complete program is in the Appendix V.

While this template produces the same result that would be obtained via current manual procedures, using the template will increase accuracy in determining the rating score for each component and reducing the time needed to do the data processing, since repeated calculation are no longer required. Based on the author experience, data processing manually took about four and one-half hours for finishing one enterprise, while plantation evaluation using this template only took about one-half hour.

Table 7. Sample of the report

CLASS PERFORMANCE OF PLANTATION
IN INDONESIA

=====					
!	!	!	!	Location	!
!	No	No. ID	! - Name of Plantation	!-----	! Class
!	!	!	! - Name of Company	! - Province	!
!	!	!	!	! - District	!
!-----					
!	1.	SMUT001	! Air Batu	!Sumatera Utara	! I
!	!	!	! PTP VI	!Asahan	!
!	!	!	!	!	!
!	2.	SMUT002	! Tanjung Maria	!Sumatera Utara	! I
!	!	!	! PT. Socfindo	!Deli Serdang	!
!	!	!	!	!	!
!	3.	JTIM001	! Sumber Ayu	!Jawa Timur	! II
!	!	!	! PTP XXIX	!Jember	!
!	!	!	!	!	!
!	4.	JTIM002	! Sumber Petung	!Jawa Timur	! II
!	!	!	! PT.Sumbersari	!Kediri	!
!	!	!	!	!	!
!	5.	JTIM003	! Sukosewu Secang	!Jawa Timur	! III
!	!	!	! PT.Secang Sukosewu	!Kediri	!
!	!	!	!	!	!
!-----					

Table 8. Sample of the back-up scores

CLASS PERFORMANCE OF PLANTATION IN
INDONESIA

=====

PLANTATION ID NUMBER : SMUT001
NAME OF PLANTATION : Air Batu
NAME OF COMPANY : PTP VI
L O C A T I O N :
- PROVINCE : Sumatera Utara
- DISTRICT : Asahan

PLANTATION'S SCORE ACHIEVEMENT

MANAGEMENT

Firm Leader Score : 14.01
Financial Mgt. Score : 19.33
Marketing Mgt. Score : 15.00
Planning & Evaluation Score : 7.00
Man Power Score : 5.00

Management Score (total * 20%) : 12.07

ESTATE FIELD

Land Used Score : 20.00
Crops' Age Composition Score : 10.50
Crops-Age Begin Productive : 10.00
Crops Cultivation Score : 15.00
Yield Score : 40.00

Estate Field Score (total * 40%) : 38.20

CROP PROCESSING

Processing Facilities Score : 39.67
Raw Material Score : 20.00
Product's Quality Score : 20.00
Quality Control Fac. Score : 9.92
By Product & Waste Mgt. Score: 5.00

Processing Score (total * 20%) : 18.92

SOCIAL SERVICES & ENVIRONMENTAL CONCERN

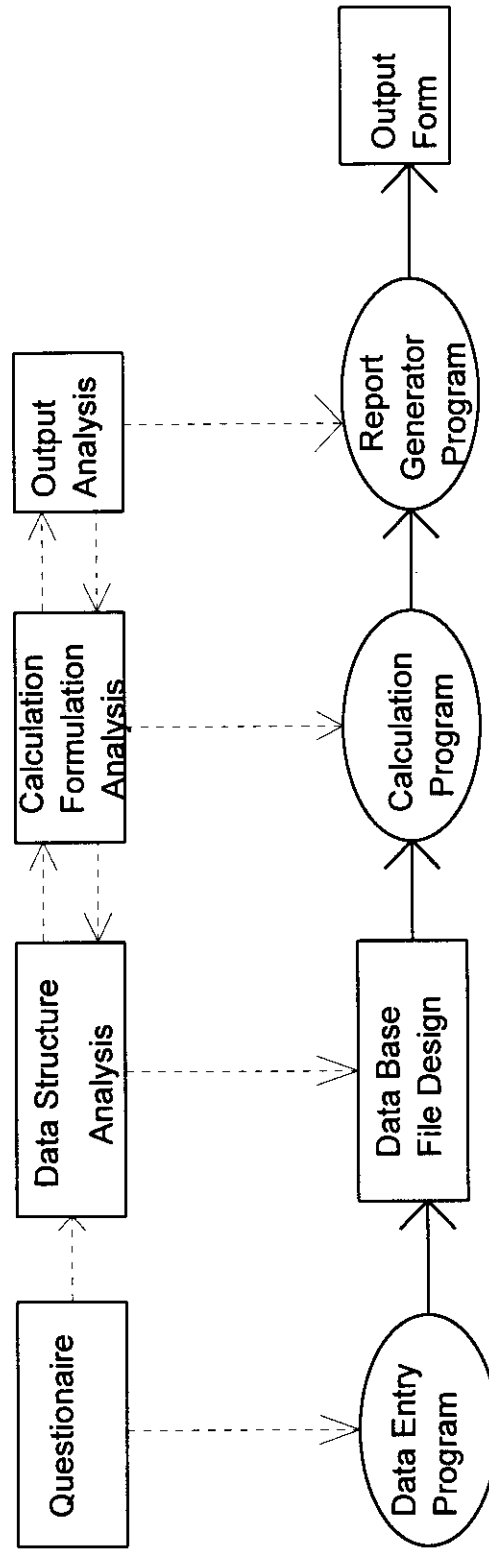
Labor Facilities Score : 54.50
Social Services Score : 0.00
Environmental Concern Score : 20.00

Social Serv Score (total * 20%) : 14.90

PLANTATION SCORE : 84.09

CLASS PERFORMANCE OF PLANTATION : I

FIGURE 3

METHODOLOGY: TEMPLATE PROCEDURE

3.4. Analyzing the Correlation between Profit and Performance Level

The objective of this analysis is to determine the relationship between performance level of each variable and a plantation's profits. For example, is the level of a leader's knowledge of the enterprise positively correlated with the profitability of the enterprise?. Thus, this analysis attempts to identify the key variables that explain an enterprise's profit. The analysis uses two statistical methods: Pearson's product moment correlation and discriminant analysis. The data used for this analysis were taken from the result of the plantation classification carried out by the Directorate General of Estate Crop (Indonesia) in 1992.

3.4.1. Pearson's Product-Moment Correlation

Before the data can be treated by higher statistical methods, the variable which are highly correlated with other variables must be normalized or deleted. To accomplish this task, Pearson's product-moment correlation coefficients of variables are computed. This coefficient is used to measure the strength of the relationship between two interval level variables. The value of a Pearson's product-moment correlation coefficient measures the strength of the linear relation, while its sign indicates the direction of the relationship. In addition, this statistic also indicates the proportion of variance in one variable that is shared by

the other, when the coefficient is squared (Bhattacharyya, 1977).

The problem of high inter-correlation discussed above is called multi-collinearity. The presence of high multi-collinearity among the data has the potential to cause misinterpretation of later results in statistical treatment (i.e. discriminant analysis) of the data (Ott, 1988). Without deleting or normalizing the correlated variables, the results would be somewhat ambiguous in that two or more variables would represent the same trend in the character of the population. For example, two variables have a Pearson's correlation (r) of .95, are almost perfectly correlated, and could be interchangeable in most situations. Consequently, only one of these variables may be included in the analysis because both variables are virtually identical. Thus, one of those variable must be deleted to avoid ambiguity. This analysis uses the criteria for extreme multi-collinearity to be correlation coefficients ranging from 0.8 to 1.0 (Nie, et. all, 1975).

A Pearson's correlation matrix was computed using the 21 variables listed in Table 9. Appendix VI shows the correlation between those variables. Reviewing these result shows that the variable "By-product and waste management" has a high correlation with "Quality control facilities" at 0.8171. So the variable "By-product and waste management"

is eliminated from the variable set used to estimate the discriminant analysis model.

Table 9. List of variables

No. variable	Name of variable	Definition of variable
X1	FED	Formal education of the leaders
X2	NFED	Non-formal education of the leaders
X3	EXP	Experience of the leaders
X4	FINMGT	Financial management
X5	MKTMGT	Marketing management
X6	P&E	Planning & evaluation
X7	MP	Man-power
X8	LU	Land used
X9	CAGECOM	Crops' age composition
X10	CBEGINP	Crops' age begin production
X11	CCULT	Crops' cultivation
X12	YLD	Yield
X13	PROCFAC	Processing facilities
X14	RAWM	Raw material
X15	PRODQ	Products' quality
X16	QCFAC	Quality control facilities
X17	BPWM	By-product & waste management
X18	SOCSESV	Social services
X19	EXTS	Extension for smallholders
X20	ASSTS	Assist smallholders
X21	WASTEMGT	Waste management

3.4.2. Discriminant Analysis

In order to analyze the relationship between profitability and performance level of each plantation enterprise, discriminant analysis was used. This is a statistical method that is used to analyze a specific class of statistical problem, focusing on the analysis of groups of populations (Eisenbeis and Avery, 1972).

In this study the plantation enterprises are differentiated by two levels of profits¹; those earning low levels of profit and those earning high levels of profits. The low profit group, based on the data collected, are the enterprises that can earn profits below 66% of the total cost per year, while the high level profit group earn profit above the 66% level. For this analysis, 35 plantation enterprises were used as a sample of observation. The sample when divided into 2 group, with 17 firms in the low profit group, and 18 firms in the high profit group.

The linear combination, or "discriminant functions" take the form:

$$D = b_1X_1 + b_2X_2 + \dots + b_mX_m$$

where :

D is a linear discriminant function with m variables. The b's are the ratio of the weighted between-group variance

¹Level of profit is calculated as: ((total sale-total cost)/total cost)*100%

to the pooled within-groups variance of D (Eisenbeis and Avery, 1972).

Discriminant analysis produces several statistical tests that are used to determine the effectiveness of the derived function in actual discrimination, including a test of the significant level (F test) and Wilk's Lambda.

First, after reviewing the correlation among variables, and deleting highly correlated variable, 20 classification variables were included in the model designed to determine the class performance level. Those variables were examined, using the overall F test, to identify the equality of different groups means for each variables in order to accept or reject the null hypothesis. Table 10 shows that all the variables are significant at the 5% level. Therefore, we reject the null hypothesis that the group means for these variables are equal, and retain all of these variables in the analysis.

As stated before, discriminant analysis also estimated the Wilk's lambda values. These values are used to provide an overall measure of between-group differences (Hand, 1981). Moreover, Wilk's Lambda is a measure of the relative discriminating power within the variables. Hence, this statistic can be used to distinguish which variables have the greatest difference in group means. To interpret the discriminating power with Wilk's Lambda, it should be remembered that it is an inverse measure. In other words,

the lower the lambda, the most discriminating power is present (Nie, et. all, 1975). The values of Wilk's Lambda found in this study (Table 10) indicate that the variable of "formal education of the leader" has the most discriminating power for the level of profit.

Table 10. The result of discriminant analysis

Variable	Wilk's Lambda	Rank	F Value	Significant
X1 (FED)	0.0670	1	224.00	0.0000
X2 (NFED)	0.5920	18	65.45	0.0000
X3 (EXP)	0.4062	15	105.88	0.0000
X4 (FINMGT)	0.2136	7	228.66	0.0000
X5 (MKTMTGT)	0.2904	11	198.32	0.0000
X6 (P&E)	0.1955	6	222.54	0.0000
X7 (MP)	0.3452	13	105.85	0.0000
X8 (LU)	0.0778	2	213.85	0.0000
X9 (CAGECOM)	0.3809	14	118.57	0.0000
X10 (CBEGINP)	0.1820	5	194.55	0.0000
X11 (CCULT)	0.2472	9	162.21	0.0000
X12 (YLD)	0.1611	4	256.00	0.0000
X13 (PROCFAC)	0.2889	10	145.52	0.0000
X14 (RAWM)	0.2433	8	218.42	0.0000
X15 (PRODQ)	0.5290	16	70.37	0.0000
X16 (QCFAC)	0.5577	17	74.04	0.0000
X18 (SOCSESV)	0.1500	3	340.79	0.0000
X19 (EXTS)	0.8268	19	5.30	0.0288
X20 (ASSTS)	0.8269	20	9.24	0.0049
X21 (WASTEMGT)	0.3407	12	120.40	0.0000

The objective of using discriminant analysis is to determine the linear functions for two groups, defined as follows: group 1 are the enterprises that earn profits equal to more than 66% of total cost per year, and group 2 are the enterprises that earn profits lower than 66% of total cost per year.

The discriminant coefficients show the contribution of the individual variable to the function. Similar in interpretation as correlation or regression coefficients, the value shows the relative discriminatory power that the variables adds to the discriminant function.

Based on the two groups classification and the characteristics of the selected variables, the estimated linear discriminant function is :

$$\begin{aligned}
 D = & 2.7420X_1 - 1.3282X_2 - 2.2379X_3 + 1.8350X_4 + \\
 & 1.2492X_5 - 1.0617X_6 - 0.3337X_7 - 1.5942X_8 - \\
 & 0.5901X_9 + 0.8638X_{10} + 2.1544X_{11} - 1.0749X_{12} + \\
 & 1.8621X_{13} + 1.4384X_{14} + 0.3116X_{15} - 3.8016X_{16} + \\
 & 0.7788X_{18} - 2.2511X_{19} + 2.9761X_{20} - 0.3721X_{21}
 \end{aligned}$$

Based on the value of Wilk's Lambda and the linear discriminant function coefficients of each variable, these results show that "formal education of the leaders" is the most important variable in the whole discriminant function; followed by "crops' cultivation", "processing facilities",

"financial management", "raw material", and "marketing management", in order of importance.

In the currently used plantation classification assessment system, the management sub-system is given a 20% contribution (weight) to the total score (see Figure 1), while "Formal education of the leaders" variable counted for 12% in the management sub-system. In other words, "Formal education of the leaders" variable only accounts for a 2.4% share on the total score in plantation classification. However, based on the result of the discriminant analysis stated above, the "Formal education of the leaders" variable makes the most important contribution in determining the level of profits.

To measure the variability in the discriminant space that is attributable to the group differences, the total discriminant power can be used (Tatsuoka, 1970). This study found that the value of total discriminant power is 64.48 %. This means that 64.48% of the variability in the discriminant space is relevant to group differentiation. Hence, this percentage may be used as a measure of the total discriminatory power residing in the discriminant function.

IV. SUMMARY AND RECOMMENDATIONS

4.1. Summary

The role of the plantation estate sub-sector remains important in the Indonesian economy, especially in generating export earnings. Thus, intensive extension and effective guidance is necessary to improve this sub-sector. In Indonesia a guidance policies needed to improve the plantation sub-sector are based on analysis of the performance level of each plantation estate enterprise. A firm's performance level is measured through plantation classification which is carried out every three years. A plantation's performance level is determined by summing the score for the following components: management, estate field, crops' processing, social service, and environmental impact. To determine a firm's total score, the score of each component is weighted, based on the its relative importance to the efficiency of the plantation's overall performance. Since, the process of plantation classification requires many calculations and is carried out manually, errors are likely and the process is very time consuming.

Since plantation performance level is used as a basis to decide what type of guidance is needed to improve plantation enterprises, the main objective of this study is to develop a procedure to improve the accuracy and

efficiency of the plantation estate classification process. In addition, this study also attempts to analyze the correlation between the performance level of the enterprise and its profitability.

The procedure developed for plantation classification uses a template which was built by using the dBase IV programming language. The finding shows that processing these data using this template gives the same results as would be obtained through current manual procedures. However, using the template increases the accuracy in choosing the rating score for each component and reduce the time needed to do data processing.

Moreover, by applying the discriminant analysis, this study also found that the variables "formal education of the leaders", makes the most important contribution in determining the level of the profit. In other words, the level of the formal education of the enterprise's leaders is positively correlated with the profitability of the enterprise. The other variables that also were found to be key explanatory variables are "crops' cultivation", "processing facilities", financial management", "raw material", and "marketing management".

4.2. Recommendations

To solve the time-consuming problem of processing the data for plantation classification and to increase the accuracy of determining the score of each variable, it is recommended that the Ministry of Agricultural use the template built in this study.

In addition, considering the result from the discriminant analysis used to evaluate the correlation between performance level of variable and enterprise's profitability, the weight given to each variable might need to be reviewed and possibly changed to better reflect their contribution to a firm's profitability.

4.3. Limitation

The template is built, based on the Ministry Of Agriculture guidelines provided for plantation classification in 1992/1993. Thus, this template will need to be adjusted in the future if these guidelines are changed.

Second, due to the limitation of the data provided, the discriminant analysis in this study treated all firms similarly. But, because firm producing different type of commodity and with different cultivated area will have a different opportunities for making profits.

4.4. Future Research

Based on the limitation above, this template needs to be improved for the convenience of the users. The user interface need to be improved. So that, users who do not have a knowledge of the basic computer software used for this template will be able to run the template.

Moreover, further the discriminant analysis, using more cases such as grouping firms based on the type of commodity planted or the size of plantation, might be carried out to determine factors that affect the profitability of firms cultivating different commodities or a different cultivated areas.

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APPENDIX I
(Breakdown of evaluated Variables)

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
	1.1.2. Non-Formal Education (Training)	1b	1.1.2.1. Board of Directors - Board of Director-1 - Board of Director-2 - Board of Director-3 - Board of Director-.. - Board of Director-n Average 1.1.2.1	(MFNB1 + + MFNBn)/n	MFNB1	
			MFNB2			
			MFNB3			
			MFNB..			
			MFNBn			
			MFNB			
		2b	1.1.2.2. Directors - Director-1 - Director-2 - Director-3 - Director-.. - Director-n Average 1.1.2.2	(MFND1 + + MFNDn)/n	MFND1	
			MFND2			
			MFND3			
			MFND..			
			MFNDn			
		MFND				
			1.1.2.3. Field Managers - Field manager-1 - Field Manager-2 - Field Manager-3 - Field Manager-.. - Field Manager-n Average 1.1.2.3	(MFN1 + + MFNn)/n	MFNF1	
			MFNF2			
			MFNF3			
	MFNF..					
	Average 1.1.2 Non-Formal Edu. Score			(MFNB + MFND + MFNF)/3	MFNFn	MFNA * 8 %
					MFNF	
					MNFA MFN	

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
	1.1.3. Experiences (10)	1c	1.1.3.1. Board of Directors - Board of Director-1 - Board of Director-2 - Board of Director-3 - Board of Director-.. - Board of Director-n Average 1.1.3.1 1.1.3.2. Directors - Director-1 - Director-2 - Director-3 - Director-.. - Director-n Average 1.1.3.2	$(MFEB1 + + MFEBn)/n$	MFEB1 MFEB2 MFEB3 MFEB.. MFEBn MFEB	
	Average 1.1.3 Experiences Score	2c	1.1.3.3. Field Managers - Field manager-1 - Field Manager-2 - Field Manager-3 - Field Manager-.. - Field Manager-n Average 1.1.3.3	$(MFEF1 + + MFEFn)/n$ $(MFEB + MFED + MFEF)/3$	MFEF1 MFEF2 MFEF3 MFEF.. MFEFn MFEF MFEA MFE	MFEA * 10 %

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
1.2. Financial Management (20)	1.2.1. Accounting (12)	3a	1.2.1.1. Acc. Record 1.2.1.2. Balance sheet 1.2.1.3. Audit Total	(MFAR + MFAB + MFAA)	MFAR MFAB MFAA MFAT MFA	MFAT * 12 %
	Acc.Score					
	1.2.2. Bonus (8)	3b	1.2.2.1. Year 19.... 1.2.2.2. Year 19.... 1.2.2.3. Year 19.... Average 1.2.2. (Bo)	(MFBY1 + + MFBY3)/3	MFBY1 MFBY2 MFBY3 MFBY MFB	
	Bonus Score					
1.3. Marketing Management (15)	1.3.1 Commodity - Commodity1 - Commodity2 - Commodity.. - Commodityn	4	Total Cost per unit Sales Price per unit	Total Cost per unit ----- * 100 % Sales Price	MMRC1 MMRC2 MMRC3 MMRC.. MMRCn	MMRC * 15 %
	Average 1.3.1 Marketing Score			(MMRC1 + + MMRCn)/n	MMRC MMR	

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
1.4. Planning & Evaluation (10)	1.4.1. Planning	5	1.4.1.1. Land Used	MPPL + MPPC + MPPP + MPPM	MPPL	
			1.4.1.2. Crops Cultivation		MPPC	
			1.4.1.3. Crops Processing		MPPP	
			1.4.1.4. Marketing Total		MPPM	
	1.4.2. Evaluation		1.4.2.1. Land Used	MPEL + MPEC + MPEP + MPEP	MPEL	
			1.4.2.2. Crops Cultivation		MPEC	
			1.4.2.3. Crops Processing		MPEP	
			1.4.2.4. Marketing Total		MPEM	
1.5. Man Power (25)	Total Plan & Eval Score	6		MPE	MPE	MPT * 10 %
				MPP + MPE	MPT MP	
				# of employee ----- * 100 % Ha comm * Labor Ratio	MMR	
				# of employee (Hac1 + LR1) + .. + (Acn + LRn) * 100 %	MMR	
Man Power Score			1.5.1.1. Mono-crop			
			1.5.1.2. Multi-crops			
				(MFF + MFN + MFE) + (MFA + MFB) + MMR + MP + MM	MM	MMR * 25 %
TOTAL MANAGEMENT					MT	
MANAGEMENT SCORE					M	TM * 20 %

2. SUB-SYSTEM: ESTATE FIELD

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
2.1. Land Used (20)		7		$\frac{\{ \text{Planted Area (Ha)} + \text{(Factory and Other facilities area)} \}}{\text{Total available area}} * 100 \%$	ELU	
Land Used Score					EL	ELU * 20 %
2.2. Crops' age Composition (15)	2.2.1. Commodity.....	8	2.2.1.1. Immature Crops	$\frac{\{ \text{Immature Crop Area} / \text{(Immature crops ratio * commodity planted area)} \}}{100 \%$	EAC1I	
			2.2.1.2. Mature Crops	$\frac{\{ \text{Mature Crops Area} / \text{(Mature crops ratio * commodity planted area)} \}}{100 \%$	EAC1M	
			2.2.1.3. Post Mature Crops	$\frac{\{ \text{Post Mature Crops Area} / \text{(Post mature crops ratio * commodity planted area)} \}}{100 \%$	EAC1P	
			2.2.1.4. Non-productive Crops	$\frac{\{ \text{Non-prod. Crops Area} / \text{(Non-prod. crops ratio * commodity planted area)} \}}{100 \%$	EAC1N	
			Average	$\frac{\{ \text{EAC1I} + \text{EAC1M} + \text{EAC1P} + \text{EAC1N} \}}{4}$	EAC1A	
	Com1 Score				EAC1	$\frac{\{ \text{comm.planted area} / \text{total planted area} \}}{15 \%$

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
	2.2.2. Commodity.....	8	2.2.2.1. Immature Crops	{Immature Crop Area / (Immature crops ratio * commodity planted area)} * 100 %	EAC2I	
			2.2.2.2. Mature Crops	{Mature Crops Area/ (Mature crops ratio * commodity planted area)} * 100 %	EAC2M	
			2.2.2.3. Post Mature Crops	{Post Mature Crops Area/ {Post mature crops ratio commodity planted area} * 100 %	EAC2P	
			2.2.2.4. Non-productive Crops	{Non-prod. Crops Area/ (Non-prod. crops ratio commodity planted area)} * 100 %	EAC2N	
	Com2 Score		Average	(EAC2I + EAC2M + EAC2P + EAC2N) / 4	EAC2A	
					EAC2	{comm.planted area / total planted area} * (EAC2A * 15 %)
	2.2.n. Commodity.....	8	2.2.n.1. Immature Crops	{Immature Crop Area / (Immature crops ratio * commodity planted area)} * 100 %	EACnI	

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
Crops-age Comp. Score	Com... Score		2.2.n.2. Mature Crops	{Mature Crops Area/ (Mature crops ratio * commodity planted area) * 100 %	EACnM	
			2.2.n.3. Post Mature Crops	{Post Mature Crops Area/ {Post mature crops ratio * comm. planted area} * 100 %	EACnP	
			2.2.n.4. Non-productive Crops	{Non-prod. Crops Area/ (Non-prod. crops ratio * comm. planted area) * 100 %	EACnN	
			Average	(EACnI + EACnM + EACnP + EACnN) / 4	EACnA	{comm.planted area / total planted area} * (EACnA * 15 %)
2.3. Crops' age begins Productive (10)	2.3.1. Commodity.....	9	EAC1 + EAC2 + + EACn		EA	
					EPC1	{comm.planted area / total planted area} * (Prodtv * 10%)

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
Prod. age Score 2.4. Crops Cultivation (15)	2.3... Commodity.....	10			EPC..	(comm.planted area / total planted area) * (Prodtv * 10%)
	2.3.n. Commodity.....				EPCn	(comm.planted area / total planted area) * (Prodtv * 10%)
				EPC1 + EPC2 + + EPCn	EP	
	2.4.1. Commodity.....		2.4.1.1. Recommendation 2.4.1.2. Fertilizing 2.4.1.3. Pest Control 2.4.1.4. Pest Management 2.4.1.5. Cover Crops 2.4.1.6. Growth Regulator	(R*1%)*(Comm/Plted Area) (F*4%)*(Comm/Plted Area) (P*2%)*(Comm/Plted Area) (Pm*3%)*(Comm/Plted Area) (C*3%)*(Comm/Plted Area) (G*2%)*(Comm/Plted Area) REC + FER + PC + PM + CC + GR	REC FER PC PM CC GR CULT1	
	Comm1 score					
	2.4.2. Commodity.....n.		2.4.1.1. Recommendation 2.4.1.2. Fertilizing 2.4.1.3. Pest Control 2.4.1.4. Pest Management 2.4.1.5. Cover Crops 2.4.1.6. Growth Regulator	(R*1%)*(Comm/Plted Area) (F*4%)*(Comm/Plted Area) (P*2%)*(Comm/Plted Area) (Pm*3%)*(Comm/Plted Area) (C*3%)*(Comm/Plted Area) (G*2%)*(Comm/Plted Area) REC + FER + PC + PM + CC + GR	REC FER PC PM CC GR CULT.n	
	Comm.n score					
				REC + FER + PC + PM + CC + GR		
				CULT1 + CULT.n	EC	
Crops Cultivation Score						

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
2.5. YIELD (40)	2.5.1 Commodity.....	11	Yield	(Yield/Strandad Yield) * 100	EDC1P EDC1	(EDC1P * 40 %) (Comm area / total planted area)
	2.5.2 Commodity.....	11	Yield	(Yield/Strandad Yield) * 100	EDC2P EDC2	(EDC2P * 40 %) (Comm area / total planted area)
	2.5.1 Commodity.....n.		Yield	(Yield/Strandad Yield) * 100	EDCnP EDC.n	(EDCnP * 40 %) (Comm area / total planted area)
Yield Score				(EDC1 + EDC2 + ... + EDCn) / n	ED	
ESTATE FIELD SCORE				EL + EA + EP + EC + ED	E	

3. SUB-SYSTEM: CROP PROCESSING

GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
SUB-GROUPS 3.1. Processing Facilities (40)	3.1.1. Commodity 1	12a	3.1.1.1. Machine's Age		pfa1	
		12b	3.1.1.2. Machine's Condition		pfm1	
		12c	3.1.1.3. Ratio Machinery Capacity to its Licence capacity	(machinery capacity/ licence capacity) * 100 %	pfcl	
		12d	3.1.1.4. Ratio Capacity Used to Machinery Capacity	(capacity used/machinery capacity) * 100 %	pfu1	
	Score comm 1			(pfcl + pfa1 + pfu1 + pfm1) / 4	PFC1	
		12a	3.1.2.1. Machine's Age		pfa2	
		12b	3.1.2.2. Machine's Condition		pfm2	
		12c	3.1.2.3. Ratio Machinery Capacity to its Licence capacity	(machinery capacity/ licence capacity) * 100 %	pfcl	
	Score comm 2	12d	3.1.2.4. Ratio Capacity Used to Machinery Capacity	(capacity used/machinery capacity) * 100 %	pfu2	
				(pfcl + pfa2 + pfu2 + pfm2) / 4	PFC2	

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
Score	3.1.n. Commodity .n	12a	3.1.n.1. Machine's Age		pfa.n	
		12b	3.1.n.2. Machine's Condition		pfm.n	
		12c	3.1.n.3. Ratio Machinery Capacity to its Licence capacity	(machinery capacity/ licence capacity) * 100 %	pfu.n	
		12d	3.1.n.4. Ratio Capacity Used to Machinery Capacity	(capacity used/machinery capacity) * 100 %		
	Score comm ..			(pfc.n + pfa.n + pfu.n + pfm.n)/4	PFC.n	
				(PFC1 + + PFC.n)/n	PFC	
					PF	PFC * 40 %
	3.2. Raw Material (20)		3.2.1.1. Owned Processed	%tage processed * 100	PRC101	
			3.2.1.2. Other with Contract	%tage processed * 90	PRC102	
			3.2.1.3. Other without Contract	%tage processed * 40	PRC103	
			3.2.1.4. Sold without Process	%tage processed * 0	PRC104	
Score Comm 1				PRC101 + PRC102 + PRC103 + PRC104	PRC101	
				(Comm Area/Planted area) * PRC101 * 20	PRC1	

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
Score (20)	3.2.2. Commodity 2		3.2.2.1. Owned Processed 3.2.2.2. Other with Contract 3.2.2.3. Other without Contact 3.2.2.4. Sold without Process	%tage processed * 100 %tage processed * 90 %tage processed * 40 %tage processed * 0	PRC201 PRC202 PRC203 PRC204	
	Score Comm 2			PRC201 + PRC202 + PRC203 + PRC204 (Comm Area/Planted area) * PRC202 * 20 %	PRC202 PRC2	
	3.2.n. Commodity n		3.2.n.1. Owned Processed 3.2.n.2. Other with Contract 3.2.n.3. Other without Contact 3.2.n.4. Sold without Process	%tage processed * 100 %tage processed * 90 %tage processed * 40 %tage processed * 0	PRCnO1 PRCnO2 PRCnO3 PRCnO4	
	Score Comm n			PRCnO1 + PRCnO2 + PRCnO3 + PRCnO4 (Comm Area/Planted area) * PRCnOn * 20 %	PRCnOn PRCn	
				(PRC1 + PRC2 + + PRCn)	PR	
	3.3.1. Quality of Products	13	3.3.1.1. Commodity1 3.3.1.2. Commodity2 3.3.1.... Commodity.. 3.3.1.n. Commodity n	(Comm area/planted area) * Score of Percentage Quality Std Produced	PPQC1 PPQC2 PPQC.. PPQC.n	
	Score			PPQC1 + + PPQC.n	PPP	
					PP	PPP * 20 %

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
3.4. Quality Control Facilities (10)	3.4.1. Machine's Age	14a	3.4.1.1. Commodity 1 3.4.1.2. Commodity 2 3.4.1.n. Commodity n	(Comm area/planted area) * PQAC1F}	PQAC1F	
					PQAC1	
					PQAC2 PQACn	
	Score			(PQAC1 + + PQACn)	PQA	
Score	3.4.2. Machine's Condition	14b	3.4.2.1. Commodity 1 3.4.2.2. Commodity 2 3.4.2.n. Commodity n	(Comm area/planted area) * PQCC1F}	PQCC1F	PQQ * 10 %
					PQCC1	
					PQCC2 PQCCn	
	Score			(PQCC1 + + PQCCn) (PQA + PQC)/2	PQC	
					PQQ	
					PQ	

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
3.5. By Product Process & Waste Management (10)	3.5.1. Commodity 1		3.5.1.1. By product Process	%tage * 100	PMC1B1	
			3.5.1.1.1. Owned Process	%tage * 80	PMC1B2	
			3.5.1.1.2. Other Processing	%tage * 60		
			3.5.1.1.3. Sell Without Pro	%tage * 0		
	Score		3.5.1.1.4. Not Process/sell			
			Score	PMC1B1 + PMC1B2	PMC1B	
			3.5.1.2. Waste Management	%tage * 100	PMC1W1	
			3.5.1.2.1. With Mgt	%tage * 20	PMC1W2	
			3.5.1.2.2. Without Mgt			
			Score	PMC1W1 + PMC1W2 (PMC1B + PMC1W)/2	PMC1W PMC1BW	
	3.5.2. Commodity 2		(Comm area/planted area)	* PMC1BW * 10 %	PMC1	
			3.5.2.1. By product Process	%tage * 100	PMC2B1	
			3.5.2.1.1. Owned Process	%tage * 80	PMC2B2	
			3.5.2.1.2. Other Processing	%tage * 60		
	Score		3.5.2.1.3. Sell Without Pro	%tage * 0		
			3.5.2.1.4. Not Process/sell		PMC2B	
			Score	PMC2B1 + PMC2B2		
			3.5.2.2. Waste Management	%tage * 100	PMC2W1	
	Score		3.5.2.2.1. With Mgt	%tage * 20	PMC2W2	
			3.5.2.2.2. Without Mgt			
	Score		Score	PMC2W1 + PMC2W2 (PMC2B + PMC2W)/2	PMC2W PMC2BW	

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
Score	3.5.n. Commodity n	Score	3.5.n.1. By product Process 3.5.1.1.1. Owned Process 3.5.1.1.2. Other Processing 3.5.1.1.3. Sell Without Pro 3.5.n.1.4. Not Process/sell Score 3.5.n.2. Waste Management 3.5.n.2.1. With Mgt 3.5.n.2.2. Without Mgt Score	(Comm area/planted area) * PMC2BW * 10 %	PMC2	
				%tage * 100	PMCnB1	
				%tage * 80	PMCnB2	
				%tage * 60		
				%tage * 0		
				PMCnB1 + PMCnB2	PMCnB	
				%tage * 100	PMCnW1	
				%tage * 20	PMCnW2	
				PMCnW1 + PMCnW2	PMCnW	
Score		Score	3.5.n.2. Waste Management 3.5.n.2.1. With Mgt 3.5.n.2.2. Without Mgt Score	(PMCnB + PMCnW)/2	PMCnBW	
				(Comm area/planted area) * PMCnBW * 10 %	PMCn	
				PMC1 + + PMCn	PM	
				PF + PR + PP + PQ + PM	PT	
					P	PT * 20 %
PROCESSING SCORE						

4. SUB-SYSTEM: SOCIAL SERVICES & ENVIRONMENT

GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
SUB-GROUPS						
4.1. Labor Facilities (60)	4.1.1. Work Safety	15a	4.1.1.1. Fire Extinguisher 4.1.1.2. Uniform 4.1.1.3. Footwear 4.1.1.4. Masker 4.1.1.5. First Aid Box 4.1.1.6. Gloves 4.1.1.7. Work Hat		SSKE SSKU SSKF SSKM SSKA SSKG SSKH	
			Score	SSKE + SSKU + SSKF + SSKM = SSKA + SSKG + SSKH	SSK	
	4.1.2. Health Facilities	15b	4.1.2.1. Hospital 4.1.2.2. Clinic 4.1.2.3. Medical Doctor 4.1.2.4. Nurse		SSFH SSFC SSFM SSFN	
			Score	SSFH + SSFC + SSFM + SSFN	SSF	
	4.1.3. Wage	15c	4.1.3.1. Salary 4.1.3.2. Rice		SSRS SSRR	
			Score	SSRS + SSRR	SSR	
	4.1.4. Insurance	15d			SSI	
	4.1.5. Housing	15e	4.1.5.1. Staff 4.1.5.2. Employee		SSHS SSHE	
			Score	SSHS + SSHE	SSH	

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
Score	4.1.6. Ind. Labor Union (SPSI)	15f				SSOL
	4.1.7. Cooperative	15g	4.1.7.1. Consumption 4.1.7.2. Credit Coop 4.1.7.3. # of members		SSOP SSOR SSOM	
			Score	SSOP + SSOR + SSOM	SSO	
	4.1.8. School	15h	4.1.6.1. Facilities 4.1.6.1.1. Kindergarten 4.1.6.1.2. Primary School 4.1.6.2. Teachers		SSSK SSSP SSST	
				SSSK + SSSP + SSST	SSS	
	4.1.9. Entertainment Facility	15i	4.1.9.1. Sport Facilities 4.1.9.2. Cinema Facilities 4.1.9.3. Art Facilities		SSES SSEC SSEA	
				SSES + S SEC + SSEA	SSE	
	4.1.10. ChildCare Facilities	15j			SSC	
	4.1.11. House of Worship	15k			SSC	
				SSK + SSF + SSR + SSI + SSH + SSOL + SSO + SSS + SSE + SSC + SSW	SS	

GROUPS ----- SUB-GROUPS	ITEMS	STANDARD USED	VARIABLES	FORMULA USED	SCORE	WEIGHTED SCORE
4.2. Social Services (20)	4.2.1. Extension for Smallholder	16	4.2.1.1. Management		SEM	
			4.2.1.2. Crops Cultivation		SEC	
			4.2.1.3. Crops Processing		SEP	
			4.2.1.4. Marketing		SEE	
			4.2.1.5. Field Demonstration		SAF	
4.3. Environmental Concern (20)	4.2.2. Assist Smallholder	17		SEM + SEC + SEP + SEE + SAF	SE	
			4.2.2.1. Processing		SAP	
			4.2.2.2. Marketing		SAM	
			4.2.2.3. Nursery Provided	SEM + SEC + SEP + SEE	SNP	
			4.2.2.4. Seed Provided		SSP	
Social Services Score	4.4. Waste Management	18		SAP + SAM + SNP + SSP	SA	
			4.4.1. In Factory Area		SWI	
			4.4.2. Out Factory Area		SWO	
				SWI + SWO	SW	
				SS + SE + SA + SW	Sx	
PLANTATION SCORE					S	Sx * 20 %
				M + E + P + S		

APPENDIX II
(QUESTIONNAIRE USED FOR TEMPLATE)

INDONESIA
MINISTRY OF AGRICULTURE

QUESTIONNAIRE OF PLANTATION CLASIFICATION

19..

Plantation ID Number :

Name of Plantation :

Name of Company :

Located

Province :

District :

1. MANAGEMENT

1.1. Firm Leaders

Type of Leaders	Name of Leaders	Formal education	Non-formal education		Experiences	
			Type	Duration	Type	Duration

1.2. Financial Management

1.2.1. Accounting

Does the firm make:

- Accounting record ? : Yes / No
- Balance sheet ? : Yes / No

Is the accounting record audited ? : Yes / No

1.2.2. Firm's policy on bonus provided

Year	Yes / No	Amount of Bonus (One/Two/Three/Four month salary/ies)
19..		
19..		
19..		
19..		
19..		

1.3. Marketing management

Commodity	Total cost (Rp/kg)	Sale price (Rp/kg)

1.4. Planning and evaluation

1.4.1. Planning

Does the firm make planning? Yes/No

If yes fill table below

Planning	Type of Planning	
	Semester	Yearly
Land used		
Crops cultivation		
Crops processing		
Marketing		

1.4.2. Evaluation

Does the firm do evaluation ? Yes/No

If yes fill table below

Evaluation on	Type of Evaluation	
	Semester	Yearly
Land used		
Crops cultivation		
Crops processing		
Marketing		

1.5. Man-Power

Total employees (in all unit): people.

2. ESTATE FIELD

2.1. Land used

2.1.1. Planted area

Commodity	Area (ha)			
	Immature	Mature	Post mature	Non-productive

2.1.2. Other area

Type of land use	Area (ha)
Factory and other facilities	
Un-used land	

2.2. Age crop begins production

Commodity	Age productive (years)

2.4. Crops' Cultivation

2.4.1. Commodity : _____

2.4.1.1. Fertilizer

[illegible]

2.5. Yield

Commodity	Yield per Kg

3 CROPS PROCESSING

3.1 Commodity: _____

3.1.1 Machine Facilities

Unit	Machine 1	Machine 2	Machine ..
Criteria			
Age (Years)			
Condition			
License Capacity (Kg/Hrs)			
Potential Capacity (Kg/Hrs)			
Use Capacity (Kg/Hrs)			

3.1.2. Processing

Items	Criteria	Performance (%)
Raw Material	Owned Processing	
	Other Processing with Contract	
	Other Processing without Contract	
	Sold Raw Material	
Quality Product	
	
	
	

3.1.3. Quality Control

	Unit	Machine 1	Machine 2	Machine ..
Criteria				
Age (Years)				
Condition				

3.1.4. By Product and Waste Management

Items	Criteria	Performance (%)
By Product	Owned Processing	
	Other Processing with Contract	
	Sold without Processing	
	Not Processed (throw away)	
Waste	With Management	
	Without Management	

4. SOCIAL SERVICES AND ENVIRONMENTAL CONCERN

4.1. Work Facilities

Type	Item	Availability (Yes/No)
Work Safety	Uniform	
	Footwear	
	Masker	
	Gloves	
	Work hat	
	First aid box	
	Fire extinguisher	
Health Facility	Hospital	
	Clinic	
	Medical Doctor	
	Nurse	

4.1. Labor Benefit

Type	Item	Given
Wage	Salary% of Gov't Standard
	Rice% of Gov't Standard
Insurance	% of total employee
Housing	Staff% of total staff
	Non Staff% of total staff
Labor Union	% of total employee

4.3. Other Benefit

Type	Provided	Availability
Cooperative	Consumption% of total employee
	Credit% of total employee
	Mixed% of total employee
Schools	Kindergarten	Permanent
		Semi Permanent
	Primary School	Permanent
		Semi Permanent
Entertainment	Teacher	Available
		Non-available
Entertainment	Sport Facilities	Yes/No
	Art Facilities	Yes/No
	Cinema Facilities	Yes/No
Child care		Available
		Non-available
House of worship		Permanent
		Semi permanent
		Non-available

4.4. Social and Environmental Concern

Type	Services	Items	Availability (Yes/No)
Social	Extension to smallholder	Management Crops cultivation Crops Processing Marketing Field demonstration	
	Assist Smallholder	Precessing Marketing Nursery provided Seed provided	
Environment	Waste Management	In factory Out factory	

APPENDIX III
(Structure for Database)

STRUCTURE FOR DATABASE

1. GEN_INF.dbf (General Information)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	NAMEP	Character	25		N
3	COMPANY	Character	25		N
4	PROVINCE	Character	20		N
5	DISTRICT	Character	20		N

1.1. MLEADER.DBF (Firm Leaders)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	LEADER	Character	20		N
3	NAMEL	Character	20		N
4	KNOWLEGDE	Character	20		N
5	LEVELK	Character	25		N

1.1.1. MDTBL1.dbf (Score Table for Firm Leader)

Field	Field Name	Type	Width	Dec	Index
1	LEVELK	Character	25		N
2	SCOREL	Numeric	2		N

1.1.2. MFMTBL2.dbf (Score Table for Firm Leader)

Field	Field Name	Type	Width	Dec	Index
1	LEVELK	Character	25		N
2	SCOREL	Numeric	2		N

1.2. FIN_MGT.dbf (Financial Management)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	ACC_RECORD	Character	3		N
3	B_SHEET	Character	3		N
4	AUDIT	Character	3		N

1.3. BONUS.dbf

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	BON_YEAR	Numeric	4		N
3	B_AMOUNT	Numeric	3	1	N

1.4. MKT_MGT.dbf (Marketing Management)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	COMMODITY	Character	9		N
3	COST_KG_RP	Numeric	9	2	N
4	SALE_KG_RP	Numeric	9	2	N

1.5. PLANNING.dbf (Planning & Evaluation)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	PLAN_EVAL	Character	10		N
3	ACTIVITY	Character	17		N
4	IMPLEMENT	Character	17		N

1.6. EMPLOYEE.dbf

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	EMPLOYEE	Numeric	5		N

1.7. COM_AREA.dbf (Commodity Area--->Land Used)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	COMMODITY	Character	9		N
3	COMM_AGE	Character	20		N
4	COM_AGE_HA	Numeric	9	2	N

1.7.1. LRTBL3.dbf (Labor Ratio per Ha per Commodity)

Field	Field Name	Type	Width	Dec	Index
1	COMMODITY	Character	9		N
2	RATIO_HA	Numeric	3	1	N

1.8. OTH_AREA.dbf (Other Area--->Land Used)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	FACILITIES	Numeric	9	2	N
3	UNUSED_LAN	Numeric	9	2	N

1.9. PROD_AGE.dbf (Commodity's Age Begin Productive)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	COMMODITY	Character	9		N
3	AGE_PROD	Numeric	2		N

1.9.1. RUBTBL4.dbf (Table for Crops' Age Begin Productive)

Field	Field Name	Type	Width	Dec	Index
1	AGE_PROD	Numeric	2		N
2	SCORE	Numeric	3		N

1.9.2. COFTBL5.dbf (Table for Crops' Age Begin Productive)

Field	Field Name	Type	Width	Dec	Index
1	AGE_PROD	Numeric	2		N
2	SCORE	Numeric	3		N

1.9.3. TEATBL6.dbf (Table for Crops' Age Begin Productive)

Field	Field Name	Type	Width	Dec	Index
1	AGE_PROD	Numeric	2		N
2	SCORE	Numeric	3		N

1.9.4. COCTBL7.dbf (Table for Crops' Age Begin Productive)

Field	Field Name	Type	Width	Dec	Index
1	AGE_PROD	Numeric	2		N
2	SCORE	Numeric	3		N

1.9.5. CANETBL8.dbf (Table for Crops' Age Begin Productive)

Field	Field Name	Type	Width	Dec	Index
1	AGE_PROD	Numeric	2		N
2	SCORE	Numeric	3		N

1.9.6. KPOKTBL9.dbf (Table for Crops' Age Begin Productive)

Field	Field Name	Type	Width	Dec	Index
1	AGE_PROD	Numeric	2		N
2	SCORE	Numeric	3		N

1.9.7. NUTTBL10.dbf (Table for Crops' Age Begin Productive)

Field	Field Name	Type	Width	Dec	Index
1	AGE_PROD	Numeric	2		N
2	SCORE	Numeric	3		N

1.10. CULTIVAT.dbf (Crops Cultivation)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	COMMODITY	Character	9		N
3	CULTIVATE	Character	17		N
4	ACTIVITY	Character	27		N

1.10.1. CULTTBL11.dbf (Cultivation Standard)

Field	Field Name	Type	Width	Dec	Index
1	ACTIVITY	Character	27		N
2	SCORE	Numeric	3		N

1.11. YIELD.dbf

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	COMMODITY	Character	9		N
3	TYPE	Character	13		N
4	YIELD_KG	Numeric	9		N

1.11.1. Y1TBL12.dbf (Standard Yield Table)

Field	Field Name	Type	Width	Dec	Index
1	COMMODITY	Character	9		N
2	YIELD_STD	Numeric	6		N

1.11.2. Y2TBL13.dbf (Standard Yield Table)

Field	Field Name	Type	Width	Dec	Index
1	TYPE	Character	13		N
2	YIELD_STD	Numeric	6		N

1.12. PROCESS.dbf (Crops Processing)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	COMMODITY	Character	9		N
3	ITEM_PROC	Character	18		N
4	UNIT_ITEM	Character	13		N
5	CRITERIA	Character	33		N
6	GRADE	Numeric	9	2	N

1.13. WORK_FAC.dbf (Work Facilities)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	WORK_FAC	Character	17		N
3	AVAIL	Character	20		N

1.13.1. S1TBL14.dbf (Score Table for Work facilities)

Field	Field Name	Type	Width	Dec	Index
1	AVAIL	Character	20		N
2	SCORE	Numeric	6	2	N

1.14. LABORBEN.dbf (Labor Benefit)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	LABORBEN	Character	11		N
3	CRITERIA	Character	9		N
4	GIVEN	Numeric	6	2	N

1.15. COOP.dbf (Cooperative)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	COOPERATIV	Character	20		N
3	MEMBERS	Numeric	6	2	N

1.16. SCHOOL.dbf

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	SCHOOLS	Character	14		N
3	AVAIL	Character	20		N

1.17. OTH_FAC.dbf (Other Facilities)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	FACILITIES	Character	20		N
3	AVAIL	Character	20		N

1.17.1. S2TBL15.dbf (Score Table for Other facilities)

Field	Field Name	Type	Width	Dec	Index
1	AVAIL	Character	20		N
2	SCORE	Numeric	1		N

1.18. SOC_ENV.dbf (Social Services & Environmental Impact)

Field	Field Name	Type	Width	Dec	Index
1	PLANT_ID	Character	7		N
2	ACTIVITY	Character	22		N
3	TYPE	Character	24		N
4	AVAIL	Character	22		N

APPENDIX IV
(Standard Used)

STANDARD USED**1. Firm Leader for Board Directors and Directors**

Type of Education	Score
1a . Formal Education	
Elementary School	30
Junior High School	40
Agricultural Junior High school	45
Senior High school	50
Agricultural Senior High School	55
Three Years College	60
Agricultural Three years College	65
> = Bachelor (Sarjana Umum)	70
> = Bachelor of Agriculture (Sarjana Pertanian)	75
1b. Non-Formal Education (Training)	
Management (in LPP)	
< 30 days	20
> = 30 days	40
Management (in non-LPP)	
< 30 days	10
> = 30 days	20
Marketing	
< 30 days	10
> = 30 days	20
Finance	
< 30 days	10
> = 30 days	20
Technical Cultivation	
< 30 days	5
> = 30 days	10
Crop Processing	
< 30 days	5
> = 30 days	10
Warehouse	
< 30 days	5
> = 30 days	10
1c. Experiences	
Plantation	
1-3 years	25
4-6 years	35
> 6 years	50
Other Agriculture	
1-3 years	15
4-6 years	25
> 6 years	30
Non Agriculture	
1-3 years	5
4-6 years	10
> 6 years	20

2. Firm Leader for Field Managers

Type of Education	Score
2a . Formal Education	
Elementary School	30
Junior High School	40
Agricultural Junior High school	50
Senior High school	50
Agricultural Senior High School	60
Three Years College	60
Agricultural Three years College	70
> = Bachelor (Sarjana Umum)	70
> = Bachelor of Agriculture (Sarjana Pertanian)	80
2b. Non-Formal Education (Training)	
Management (in LPP)	
< 30 days	10
> = 30 days	20
Management (in non-LPP)	
< 30 days	5
> = 30 days	10
Marketing	
< 30 days	5
> = 30 days	10
Finance	
< 30 days	5
> = 30 days	10
Technical Cultivation	
< 30 days	10
> = 30 days	20
Crop Processing	
< 30 days	10
> = 30 days	20
Warehouse	
< 30 days	10
> = 30 days	20
2c. Experiences	
Plantation	
1-3 years	25
4-6 years	35
> 6 years	50
Other Agriculture	
1-3 years	15
4-6 years	25
> 6 years	30
Non Agriculture	
1-3 years	5
4-6 years	10
> 6 years	20

3. Financial Management

Type of Financial Management	Score
3a. Accounting	
Accounting Record	
Recorded	30
Not-Recorded	0
Balance sheet	
Recorded	30
Not-Recorded	0
Audit	
Audit	40
Not-Audit	0
3b. Bonus	
Not-Given	0
Given	
1 month-salary	25
2 month-salaries	50
3 month- salaries	75
4 month- salaries	100

4. Marketing Management

Ratio Cost per unit per commodity/Sales Price	Score
Total Cost per unit/Sales Price * 100 % =	
< = 70 %	100
71 - 79 %	75
80 - 89 %	50
> 90 %	0

5. Planning & Evaluation

Planning & Evaluation	Score
5a. Planning	
Land Used	
No-Planning	0
Yearly	10
Five Years	10
Crops Cultivation	
No-Planning	0
Yearly	5
Five Years	5
Crops Processing	
No-Planning	0
Yearly	5
Five Years	5
Marketing	
No-Planning	0
Yearly	5
Five Years	5

Planning & Evaluation		Score
5b. Evaluation		
Land Used		
No-Evaluation		0
Semester Evaluation		10
Yearly Evaluation		10
Crops Cultivation		
No-Evaluation		0
Semester Evaluation		5
Yearly Evaluation		5
Crops Processing		
No-Evaluation		0
Semester Evaluation		5
Yearly Evaluation		5
Marketing		
No-Evaluation		0
Semester Evaluation		5
Yearly Evaluation		5

6. Employment

6a. Labor-Force ratio per Ha per Commodity

Commodity	Ratio Labor-Force per Ha
Rubber	0.5
Coconut	0.4
Oil Palm	0.5
Coffee	0.9
Cocoa	0.8
Tobacco	4
Clove	0.7
Tea	1.4
Sugarcane	2
Cotton	2.6
Pepper	0.5
Kapok	0.3
Nutmeg	0.4
cashew	0.4

6b. Employment Ratio

Ratio of Employment Used	Score
80 - 100 % or 101 - 120 %	100
60 - 78 % or 121 - 140 %	80
40 - 59 % or 141 - 160 %	60
20 - 39 % or 161 - 180 %	40
< 20 % or > 180 %	20

7. Land Used

Land Used	Score
(Planted Area + Factory + Other facilities) * 100	
80 - 100 %	100
65 - 79 %	80
50 - 64 %	60
25 - 49 %	40
0 - 24 %	20

8. Crop's Age Composition**8a. Crop's age Ratio**

Crops' Age	Ratio (%)
1. For Tea, and Coffee,	
- Immature Crops	10
- Mature Crops	50
- Post Mature Crops	35
- Non-productive Crops	5
2. For other Commodities	
- Immature Crops	30
- Mature Crops	50
- Post Mature Crops	15
- Non-productive Crops	5

8b. Composition of Crops' Age

Composition	Score
(Crops' Age Area/Standard Composition) * 100	
8b1. Immature & Mature Crops	
80 - 100	100
65 - 79	80
50 - 64	60
25 - 49	40
0 - 24	20
8b2. Post Mature & Non Productive Crops	
0 - 24	100
25 - 49	80
50 - 64	60
65 - 79	40
80 - 100	20

Composition	Score
8b3. Crops' Age Without Composition	
- Immature Crops	50
- Mature Crops	70
- Post Mature Crops	20
- Non-productive Crops	10

9. Crops' age Begins Productive

Crops' age Begins Productive	Score
Rubber, and Clove	
< = 6 years	100
> 6 - < = 7 years	80
> 7 - < = 8 years	60
> 8 - < = 9 years	40
> 9 years	20
Coffee, Oil Palm, and Pepper	
< = 4 years	100
> 4 - < = 5 years	80
> 5 - < = 6 years	60
> 6 - < = 7 years	40
> 7 years	20
Coconut,	
< = 7 years	100
> 7 - < = 8 years	80
> 8 - < = 9 years	60
> 9 - < = 10 years	40
> 10 years	20
Tea, and Cocoa	
< = 3 years	100
> 3 - < = 4 years	80
> 4 - < = 5 years	60
> 5 - < = 6 years	40
> 6 years	20
Sugar cane	
< = 12 months	20
> 12 - < = 13 months	100
> 13 - < = 14 months	80
> 14 - < = 15 months	40
> 15 months	20
Kapok, and Cashew	
< = 5 years	100
> 5 - < = 6 years	80
> 6 - < = 7 years	60
> 7 - < = 8 years	40
> 8 years	20
Cotton	
< = 7 months	100
> 7 - < = 8 months	80
> 8 - < = 9 months	60
> 9 - < = 10 months	40
> 10 months	20

Crops' age Begins Productive		Score
Nutmeg		
	< = 8 years	100
	> 8 - < = 9 years	80
	> 9 - < = 10 years	60
	> 10 - < = 11 years	40
	> 11 years	20
Tobacco		
	< = 4 months	100
	> 4 - < = 5 months	80
	> 5 - < = 6 months	60
	> 6 - < = 7 months	40
	> 7 months	20

10. Crops Cultivation

Crops Cultivation		Score
Recommendation from Research Institute		
	- Available	100
	- Un_Available	0
Cultivation		
	- Refer to Recommendation	100
	- Not refer to Recommendation	60
	- Without Cultivation	0

11. Yield

11a. Standard Yield

Commodity	Yield per Ha per year
Rubber	1,200 kg drc
Coffee	
- Robusta	800 kg coffee beans
- Arabica	400 kg coffee beans
Oil Palm	20,000 kg ffb
Coconut	1,500 kg copra
Hybrid Coconut	2,500 kg copra
Tea	1,500 kg dry tea
Clove	160 kg dry clove
Cocoa	750 kg dry bean
Pepper	600 kg dry pepper
Kapok	
- fibers	300 kg
- beans	500 kg
Nutmeg	
- beans	100 kg
- mace	10 kg

Commodity	Yield per Ha per year
Tobacco	
- Deli	700 kg dry leaves
- Vorst	1,000 kg dry leaves
- Virginia	800 kg dry leaves
- Besuki	1,600 kg dry leaves
Cotton	800 kg
Sugarcane	
- Irrigated Land	100,000 kg fresh
- Un-irrigated Land	70,000 kg fresh
Cashew	400 kg beans
Vanilla	175 kg dry
	875 kg wet

11b. Crops' Yield

Crops' Yield	Score
(Crops' Yield/Standard Yield)*100	
> = 90 %	100
70 - 89 %	80
50 - 69 %	60
30 - 49 %	40
< 30 %	20

12. Processing Facilities

12a.. Machine's Age

Machine's Age (Years)	Score
1. Coconut, Clove, Cotton Kapok, Nutmeg, Cashew	100
2. Other Commodity	
< 5	100
5 - 10	90
11 - 15	75
16 - 20	50
< 20	15

12b. Machine Condition

Condition	Score
1. Coconut, Clove, Cotton Kapok, Nutmeg, Cashew	100
2. Other Commodity	
Good	100
Slightly Ruined, can be repaired	75
Completely Ruined	0

12c. Ratio Machinery Capacity to Licence Capacity

Ratio	Score
1. Coconut, Clove, Cotton Kapok, Nutmeg, Cashew	100
2. Other Commodity	
> 150 %	60
131 - 150 %	80
90 - 130 %	100
71 - 89 %	80
51 - 70 %	60
31 - 50 %	40
< 30 %	20

12d. Ratio Capacity Used to Machine Capacity

Ratio	Score
1. Coconut, Clove, Cotton Kapok, Nutmeg, Cashew	100
2. Other Commodity	
> 80 %	100
60 - 79 %	75
40 - 59 %	50
20 - 39 %	25
< 20 %	0

13. Production Composition

Production Composition of Commodity (Quality I)		Score
Rubber (Sheet I, SIR 3/5/10/20, Crepe)		
> = 90 %		100
70 - 89 %		75
50 - 69 %		50
30 - 49 %		25
< 30 %		0
Coffee (Quality I & II)		
> = 65 %		100
50 - 64 %		75
35 - 49 %		50
20 - 34 %		25
5 - 19 %		10
< 5 %		0
Oil Palm (CPO)		
> = 80 %		100
60 - 79 %		75
40 - 59 %		50
20 - 39 %		25
< 20 %		0
Cocoa (Quality I)		
> = 80 %		100
60 - 79 %		75
40 - 59 %		50
20 - 39 %		25
< 20 %		0
Sugar cane (Refined Sugar)		
> = 80 %		100
60 - 79 %		75
40 - 59 %		50
20 - 39 %		25
< 20 %		0
Production Composition of Commodity (Quality I)		Score
Tobacco (Krosok I)		
> = 80 %		100
60 - 79 %		75
40 - 59 %		50
20 - 39 %		25
< 20 %		0
Pepper (Quality I)		
> = 80 %		100
60 - 79 %		75
40 - 59 %		50
20 - 39 %		25
< 20 %		0
Other Commodity (without Composition)		100

14. Quality Control**14a.. Machine's Age**

Machine's Age (Years)	Score
< 5	100
5 - 10	80
11 - 15	60
16 - 20	40
> 20	15

14b. Machine Condition

Condition	Score
Good	100
Slightly Ruined, can be repaired	75
Completely Ruined	0

15. Labor Facilities**15a. Work Safety**

Items	Available Score	Unavailable Score
Fire Extinguisher	2	0
Uniform	1	0
Footwear	1	0
Mask	1	0
Fist aid Box	1	0
Gloves	1	0
Work Hat	1	0

15b. Health Facilities

Items	Available Score	Unavailable Score
Hospital	3	0
Clinic	1	0
Medical Doctor	3	0
Nurse	1	0

15c. Wage

%tage from Standard	Salary Score	Rice Score
> 90	4	4
71 - 90	3	3
51 - 70	2	2
31 - 50	1	1
< 30	0.5	0.5

15d. Insurance

%tage employee has Insurance	Score
> 90	8
70 - 90	6
51 - 70	4
31 - 50	2
< 30	1

15e. Housing

%tage employee has Housing	Score
Staff	
90 - 100	4
71 - 90	3
51 - 70	2
31 - 50	1
< 30	0.5
Employee	
90 - 100	4
71 - 90	3
51 - 70	2
31 - 50	1
< 30	0.5

15f. Labor Union

Facilities	Score
- Available	
- > 50 % as members	2
- < 50 % as members	1
- Unavailable	0

15g. Cooperative Facilities

Items	Score
- Facilities	
- Consumption	0.5
- Credit Coop	0.5
- Mixed	1
- Does not Have	0
- Members	
- > 50 %	1
- < 50 %	0.5

15h. School Facilities

Facilities	Score
Kindergarten	
- Available	
= Permanent	1
= semi Permanent	0.5
- Unavailable	0
Primary School	
- Available	
= Permanent	1
= semi Permanent	0.5
- Unavailable	0
Teacher	
- Available	2
- Unavailable	0

15i. Entertainment Facilities

Facilities	Available Score	Unavailable Score
Sport	2	0
Cinema	1	0
Art	1	0

15j. Child Care Facilities

Facilities	Score
Available	4
Unavailable	0

15k. House of Worship

Facilities	Score
- Available	
= Permanent	4
= semi Permanent	2
- Unavailable	0

16. Extension for Smallholder

Extension	Available Score	Unavailable Score
Management	4	0
Crops Cultivation	2	0
Crops Processing	2	0
Marketing	2	0
Field Demonstration	2	0

17. Assist Smallholder

Items	Available Score	Unavailable Score
Collect, Processing, & Marketing		
- Collecting	2	0
- Processing	1	0
- Marketing	1	0
- Nursery Provided	4	0
- Seed Provided	2	0

18. Environmental Impact

Waste Management	Available Score	Unavailable Score
In Factory Area	10	0
Out Factory Area	10	0

APPENDIX V
(Plantation Classification Program)

PLANTATION CLASSIFICATION PROGRAM

1. MAIN MENU PROGRAM

```
CLEAR ALL
CLEAR
SET TALK OFF
SET CURSOR ON
SET STATUS OFF

PUBLIC Choice

DEFINE POPUP Main_Menu from 10,30
DEFINE BAR 1 of Main_Menu prompt "Data Input";
    MESSAGE "Procedure of Entering the Data"
DEFINE BAR 2 of Main_Menu prompt "Data Calculation";
    MESSAGE "Procedure of Calculating Recorded Data"
DEFINE BAR 3 of Main_Menu prompt "Print Result";
    MESSAGE "Procedure to Print the Result"
DEFINE BAR 4 of Main_Menu prompt "QUIT";
    MESSAGE "Exit from the System"
ON SELECTION POPUP Main_Menu DO Menu_Handler

STORE 1 to Choice
@ 2,22 SAY "PLANTATION CLASSIFICATION TEMPLATE"
@ 3,22 say "===== "
@ 7,23 say "-----<<<<  MAIN MENU  >>>>-----"
ACTIVATE POPUP Main_Menu
DO CASE
    CASE Choice=1
        DO Clean_up
        DO Input
    CASE Choice=2
        DO Clean_up
        DO Calc
    CASE Choice=3
        DO Clean_up
        DO Product
    CASE Choice=4
        DO Clean_up
    OTHERWISE
ENDCASE
```

```
SET TALK ON
SET STATUS ON
QUIT
RETURN
```

```
PROCEDURE Menu_Handler
    Choice = BAR()
    DEACTIVATE POPUP
    RELEASE POPUP
RETURN
```

```
PROCEDURE Clean_up
    CLEAR ALL
    CLEAR
RETURN
```

2. DATA MANAGEMENT INPUT PROGRAM

```
CLEAR ALL
DO Public_Working_Variable
DO Set_Working_Area
STORE SPACE (15) TO next_choice

SELECT 1
STORE .T. TO Loop_General_Information
DO WHILE Loop_General_Information=.T.
    DO Screen_General_Inf

        DO Management_Input
        DO Estate_Field_Input
        DO Crops_Processing_Input
        DO Social_Services_Input

        DO Add_Plantation_or_Exit
ENDDO
CLEAR
CLEAR ALL
DO Class
RETURN
```

```
PROCEDURE Public_Working_Variable
  PUBLIC M_Plant_id,M_NameP,M_Leader,M_Name1,M_Plan_Eval
  PUBLIC M_Commodity,M_Crops,M_Plant,M_Item,M_Unit
  PUBLIC S_Work_Fac,S_Labor_Ben,S_Fac,S_Acts
  PUBLIC S_Service_Type
RETURN
```

```
PROCEDURE Set_Working_Area
```

```
  SELECT 1
  USE Gen_Inf
    GOTO BOTTOM
  APPEND BLANK
  SELECT 2
  USE Mleader
    GOTO BOTTOM
  APPEND BLANK
  SELECT 3
  USE Fin_Mgt
    GOTO BOTTOM
  APPEND BLANK
  SELECT 4
  USE Bonus
    GOTO BOTTOM
  APPEND BLANK
  SELECT 5
  USE Mkt_Mgt
    GOTO BOTTOM
  APPEND BLANK
  SELECT 6
  USE Planning
    GOTO BOTTOM
  APPEND BLANK
  SELECT 7
  USE Employee
    GOTO BOTTOM
  APPEND BLANK
  SELECT 8
  USE Com_Area
    GOTO BOTTOM
  APPEND BLANK
  SELECT 9
  USE Oth_Area
    GOTO BOTTOM
  APPEND BLANK
```



```
SELECT 10
USE Prod_Age
    GOTO BOTTOM
    APPEND BLANK
SELECT 11
USE Cultivat
    GOTO BOTTOM
    APPEND BLANK
SELECT 12
USE Yield
    GOTO BOTTOM
    APPEND BLANK
SELECT 13
USE Process
    GOTO BOTTOM
    APPEND BLANK
SELECT 14
USE Work_Fac
    GOTO BOTTOM
    APPEND BLANK
SELECT 15
USE Laborben
    GOTO BOTTOM
    APPEND BLANK
SELECT 16
USE Coop
    GOTO BOTTOM
    APPEND BLANK
SELECT 17
USE School
    GOTO BOTTOM
    APPEND BLANK
SELECT 18
USE Oth_Fac
    GOTO BOTTOM
    APPEND BLANK
SELECT 19
USE Soc_Env
    GOTO BOTTOM
    APPEND BLANK
RETURN
```

```

PROCEDURE Forward
  IF RECNO()=RECCOUNT()
    APPEND BLANK
  ELSE
    SKIP
  ENDIF
RETURN

```

```

PROCEDURE Management_Input
  DO Firm_Leader_Input
  DO Financial_Mgt_Input
  DO Marketing_Mgt_Input

  DO Planning_and_Evaluation_Input
  DO Employee_Input
RETURN

```

```

PROCEDURE Firm_Leader_Input
  SELECT 2
  STORE .T. TO Loop_Leaders_of_Firm
  DO WHILE Loop_Leaders_of_Firm=.T.
    REPLACE Plant_id WITH M_Plant_id
    DO Screen_Leaders_Types
    STORE .T. TO Loop_Knowledge_of_Leaders
    DO WHILE Loop_Knowledge_of_Leaders=.T.
      DO Screen_Knowledge
      @ 20,23 SAY "NEXT ACTION : "
      @ 20,41 GET next_choice PICTURE "XXXXXXXXXXXXX";
      FUNCTION "M Add Knowledge,Add Leader,;
              Next Data";
      MESSAGE "Press SPACE to view NEXT ACTION;
              and Press ENTER to select"

      READ
      DO CASE
        CASE next_choice="Add Knowledge"
          DO forward
          REPLACE Plant_id WITH M_Plant_id
          REPLACE Leader WITH M_Leader
          REPLACE Name1 WITH M_Name1
        CASE next_choice="Add Leader"
          DO forward
          STORE .F. TO Loop_Knowledge_of_Leaders
        CASE next_choice="Next Data"
          STORE .F. TO Loop_Knowledge_of_Leaders

```

```

                STORE .F. TO Loop_Leaders_of_Firm
            OTHERWISE
        ENDCASE
    ENDDO
ENDDO
STORE SPACE(15) TO next_choice
RETURN

```

```

PROCEDURE Financial_Mgt_Input
    SELECT 3
    REPLACE Plant_id WITH M_Plant_id
    DO Screen_Fin

    SELECT 4
    STORE .T. TO Loop_Bonus
    DO WHILE Loop_Bonus =.T.
        REPLACE Plant_id WITH M_Plant_id
        DO Screen_Bonus
        @ 20,23 SAY "NEXT ACTION : "
        @ 20,41 GET next_choice PICTURE "XXXXXXXXXX";
            FUNCTION "M Add Bonus,Next Data      ";
            MESSAGE "Press SPACE to view NEXT ACTION;
                and Press ENTER to select"

        READ
        DO CASE
            CASE next_choice="Add Bonus"
                DO forward
            CASE next_choice="Next Data"
                STORE .F. TO Loop_Bonus
            OTHERWISE
        ENDCASE
    ENDDO
    STORE SPACE(15) TO next_choice
RETURN

```

```

PROCEDURE Marketing_Mgt_Input
    SELECT 5
    STORE .T. TO Loop_Marketing
    DO WHILE Loop_Marketing =.T.
        REPLACE Plant_id WITH M_Plant_id
        DO Screen_Mkt_Mgt
        @ 20,23 SAY "NEXT ACTION : "

```

```

@ 20,41 GET next_choice PICTURE "XXXXXXXXXXXXXXXXX";
      FUNCTION "M Add Commodity,Next Data  ";
      MESSAGE "Press SPACE to view NEXT ACTION;
              and Press ENTER to select"

READ
DO CASE
  CASE next_choice="Add Commodity"
    DO forward
  CASE next_choice="Next Data"
    STORE .F. TO Loop_Marketing
  OTHERWISE
  ENDCASE
ENDDO
STORE SPACE(15) TO next_choice
RETURN

PROCEDURE Planning_and_Evaluation_Input
SELECT 6
STORE .T. TO Loop_Planning_and_Evaluation
DO WHILE Loop_Planning_and_Evaluation=.T.
  REPLACE Plant_id WITH M_Plant_id
  DO Screen_Plannings_Types
  STORE .T. TO Loop_Activities_of_Planning
  DO WHILE Loop_Activities_of_Planning=.T.
    DO Screen_Activities
    @ 20,23 SAY "NEXT ACTION : "
    @ 20,41 GET next_choice PICTURE "XXXXXXXXXXXXXXXXX";
      FUNCTION "M Add Activity,Add Type,
              Next Data";
      MESSAGE "Press SPACE to view NEXT ACTION;
              and Press ENTER to select"

    READ
    DO CASE
      CASE next_choice="Add Activity"
        DO forward
        REPLACE Plant_id WITH M_Plant_id
        REPLACE Plan_Eval WITH M_Plan_Eval
      CASE next_choice="Add Type"
        DO forward
        STORE .F. TO Loop_Activities_of_Planning

```

```

        CASE next_choice="Next Data"
            STORE .F. TO Loop_Activities_of_Planning
            STORE .F. TO Loop_Planning_and_Evaluation
        OTHERWISE
            ENDCASE
        ENDDO
    ENDDO
    STORE SPACE(15) TO next_choice
RETURN

PROCEDURE Employee_Input
    SELECT 7
    REPLACE Plant_id WITH M_Plant_id
    DO Screen_Employee
RETURN

PROCEDURE Estate_Field_Input
    DO Land_Used_Input
    DO CropsAge_Productive_Input
    DO Cultivation_Input
    DO Yield_Input
RETURN

PROCEDURE Land_Used_Input
    SELECT 8
    STORE .T. TO Loop_Commodity_Area
    DO WHILE Loop_Commodity_Area=.T.
        REPLACE Plant_id WITH M_Plant_id
        DO Screen_Commodity_Area
        STORE .T. TO Loop_Age_Com_Classification
        DO WHILE Loop_Age_Com_Classification=.T.
            DO Screen_Age_of_Commodity
            @ 20,23 SAY "NEXT ACTION : "
            @ 20,41 GET next_choice PICTURE "XXXXXXXXXXXXXXXXX";
            FUNCTION "M Add Age Group,Add Commodity,Next Data";
            MESSAGE "Press SPACE to view NEXT ACTION and Press;
                    ENTER to select"
            READ
        DO CASE
            CASE next_choice="Add Age Group"
                DO forward
                REPLACE Plant_id WITH M_Plant_id
                REPLACE Commodity WITH M_Commodity

```

```

        CASE next_choice="Add Commodity"
            DO forward
            STORE .F. TO Loop_Age_Com_Classification
        CASE next_choice="Next Data"
            STORE .F. TO Loop_Age_Com_Classification
            STORE .F. TO Loop_Commodity_Area
        OTHERWISE
            ENDCASE
        ENDDO
    ENDDO
    STORE SPACE(15) TO next_choice
    SELECT 9
    REPLACE Plant_id WITH M_Plant_id
    DO Screen_Non_Commodity_Area
    RETURN

```

```

PROCEDURE CropsAge_Productive_Input
    SELECT 10
    STORE .T. TO Loop_Age_Begin_Prod
    DO WHILE Loop_Age_Begin_Prod=.T.
        REPLACE Plant_id WITH M_Plant_id
        DO Screen_Begin_Productive
        @ 20,23 SAY "NEXT ACTION : "
        @ 20,41 GET next_choice PICTURE "XXXXXXXXXXXXXXXXX";
            FUNCTION "M Add Commodity,Next Data";
            MESSAGE "Press SPACE to view NEXT ACTION;
                    and Press ENTER to select"

        READ
        DO CASE
            CASE next_choice="Add Commodity"
                DO forward
            CASE next_choice="Next Data"
                STORE .F. TO Loop_Age_Begin_Prod
            OTHERWISE
                ENDCASE
        ENDDO
        STORE SPACE(15) TO next_choice
    RETURN

```

```

PROCEDURE Cultivation_Input
    SELECT 11
    STORE .T. TO Loop_Commodity_Cultivation
    DO WHILE Loop_Commodity_Cultivation=.T.
        REPLACE Plant_id WITH M_Plant_id

```

```

DO Screen_Crops
STORE .T. TO Loop_Cultivation
DO WHILE Loop_Cultivation=.T.
  DO Screen_Cultivation
  @ 20,23 SAY "NEXT ACTION : "
  @ 20,41 GET next_choice PICTURE "XXXXXXXXXXXXXXXXX";
    FUNCTION "M Add Cultivation,Add Commodity,;
      Next Data";
    MESSAGE "Press SPACE to view NEXT ACTION;
      and Press ENTER to select"

  READ
  DO CASE
    CASE next_choice="Add Cultivation"
      DO forward
      REPLACE Plant_id WITH M_Plant_id
      REPLACE Commodity WITH M_Crops
    CASE next_choice="Add Commodity"
      DO forward
      STORE .F. TO Loop_Cultivation
    CASE next_choice="Next Data"
      STORE .F. TO Loop_Cultivation
      STORE .F. TO Loop_Commodity_Cultivation
    OTHERWISE
  ENDCASE
ENDDO
ENDDO
STORE SPACE(15) TO next_choice
RETURN

```

```

PROCEDURE Yield_Input
SELECT 12
STORE .T. TO Loop_Yield_of_Commodity
DO WHILE Loop_Yield_of_Commodity=.T.
  REPLACE Plant_id WITH M_Plant_id
  DO Screen_Yield

  @ 20,23 SAY "NEXT ACTION : "
  @ 20,41 GET next_choice PICTURE "XXXXXXXXXXXXXXXXX";
    FUNCTION "M Add Commodity,Next Data ";
    MESSAGE "Press SPACE to view NEXT ACTION;
      and Press ENTER to select"

  READ

```

```

DO CASE
  CASE next_choice="Add Commodity"
    DO forward
  CASE next_choice="Next Data"
    STORE .F. TO Loop_Yield_of_Commodity
  OTHERWISE
  ENDCASE
ENDDO
STORE SPACE(15) TO next_choice
RETURN

```

```

PROCEDURE Crops_Processing_Input
SELECT 13
STORE .T. TO Loop_Processed_Commodity
DO WHILE Loop_Processed_Commodity=.T.
  REPLACE Plant_Id WITH M_Plant_Id
  DO Screen_Processed_Commodity
  DO CASE
    CASE Commodity="Clove" .OR. Commodity="Kapok".OR.;
      Commodity="Nutmeg"
      DO No_Processing
    CASE Commodity="Cotton" .OR. Commodity="Coconut";
      .OR. Commodity="Cashew"
      DO No_Processing
    OTHERWISE
      DO With_Processing
  ENDCASE
ENDDO
STORE SPACE(15) TO next_choice
RETURN

```

```

PROCEDURE No_Processing
CLEAR
@ 10,28 SAY "Commodity  :"
@ 10,43 SAY M_Plant
@ 12,28 SAY "Does not need Processing"
@ 20,23 SAY "NEXT ACTION : "
@ 20,41 GET next_choice PICTURE "XXXXXXXXXXXXXXXXX";
      FUNCTION "M Add Commodity,Next Data      ";
      MESSAGE "Press SPACE to view NEXT ACTION;
              and Press ENTER to select"

READ

```



```

DO CASE
  CASE next_choice = "Add Commodity"
    DO Forward
  CASE next_choice = "Next Data"
    STORE .F. TO Loop_Processed_Commodity
  OTHERWISE
  ENDCASE
RETURN

PROCEDURE With_Processing
  STORE .T. TO Loop_Items_of_Processing
  DO WHILE Loop_Items_of_Processing=.T.
    DO Screen_Items_of_Processing
    STORE .T. TO Loop_Unit_of_Items
    DO WHILE Loop_Unit_of_Items=.T.
      DO Screen_Unit
      STORE .T. TO Loop_Criteria_of_Unit
      DO WHILE Loop_Criteria_of_Unit=.T.
        DO Criteria_Screen
        @ 20,23 SAY "NEXT ACTION : "
        @ 20,41 GET next_choice PICTURE "XXXXXXXXXXXXXX";
        FUNCTION "M Add Criteria,Add Unit,Add
                  Items,Add Commodity,Next Data";
        MESSAGE "Press SPACE to view NEXT ACTION;
                  and Press ENTER to select"

      READ
      DO CASE
        CASE next_choice = "Add Criteria"
          DO Forward
          REPLACE Plant_Id WITH M_Plant_Id
          REPLACE Commodity WITH M_Plant
          REPLACE Item_Proc WITH M_Item
          REPLACE Unit_Item WITH M_Unit
        CASE next_choice = "Add Unit"
          DO Forward
          REPLACE Plant_Id WITH M_Plant_Id
          REPLACE Commodity WITH M_Plant
          REPLACE Item_Proc WITH M_Item
          STORE .F. TO Loop_Criteria_of_Unit
        CASE next_choice = "Add Items"
          DO Forward
          REPLACE Plant_Id WITH M_Plant_Id
          REPLACE Commodity WITH M_Plant
          STORE .F. TO Loop_Criteria_of_Unit
      ENDCASE
    ENDDO
  ENDDO

```

```

        STORE .F. TO Loop_Unit_of_Items
    CASE next_choice = "Add Commodity"
        DO Forward
        STORE .F. TO Loop_Criteria_of_Unit
        STORE .F. TO Loop_Unit_of_Items
        STORE .F. TO Loop_Items_of_Processing
    CASE next_choice = "Next Data"
        STORE .F. TO Loop_Criteria_of_Unit
        STORE .F. TO Loop_Unit_of_Items
        STORE .F. TO Loop_Items_of_Processing
        STORE .F. TO Loop_Processed_Commodity
    OTHERWISE
        ENDCASE
    ENDDO
ENDDO
ENDDO
RETURN

```

```

PROCEDURE Social_Services_Input
    DO Labor_Facilities_Input
    DO Social_Environmental_Input
RETURN

```

```

PROCEDURE Labor_Facilities_Input
    DO Works_Facilities_Input
    DO Labor_Benefit_Input
    DO Other_Facilities_Input
RETURN

```

```

PROCEDURE Works_Facilities_Input
    SELECT 14
    STORE .T. TO Loop_Works_Facilities
    DO WHILE Loop_Works_Facilities=.T.
        REPLACE Plant_Id With M_Plant_Id
        DO Screen_Works_Facilities
        IF Work_Fac = "Un-Available"
            STORE .F. TO Loop_Works_Facilities
        ELSE
            STORE .T. TO Loop_WF_Availability
            DO WHILE Loop_WF_Availability=.T.
                DO Screen_WF_Availability
                @ 20,23 SAY "NEXT ACTION : "
            ENDWHILE
        ENDIF
    ENDWHILE

```

```

@ 20,41 GET next_choice PICTURE "XXXXXXXXXXXXX";
      FUNCTION "M Add Availabilty,Add Facilities,
              Next Data";
      MESSAGE "Press SPACE to view NEXT ACTION;
              and Press ENTER to select"

READ
DO CASE
    CASE next_choice = "Add Availabilty"
        DO Forward
        REPLACE Plant_Id WITH M_Plant_Id
        REPLACE Work_Fac WITH S_Work_Fac
    CASE next_choice = "Add Facilities"
        DO Forward
        REPLACE Plant_Id WITH M_Plant_Id
        STORE .F. TO Loop_WF_Availability
    CASE next_choice = "Next Data"
        STORE .F. TO Loop_WF_Availability
        STORE .F. TO Loop_Works_Facilities
    OTHERWISE
        ENDCASE
    ENDDO
ENDIF
ENDDO
STORE SPACE (15) TO next_choice
RETURN

```

```

PROCEDURE Labor_Benefit_Input
SELECT 15
STORE .T. TO Loop_Labor_Benefit
DO WHILE Loop_Labor_Benefit=.T.
    REPLACE Plant_Id With M_Plant_Id
    DO Screen_Labor_Benefit
    STORE .T. TO Loop_Benefit_Criteria
    DO WHILE Loop_Benefit_Criteria=.T.
        DO Screen_LB_Criteria
        @ 20,23 SAY "NEXT ACTION : "
        @ 20,41 GET next_choice PICTURE "XXXXXXXXXXXXX";
            FUNCTION "M Add Criteria,Add Type,;
                    Next Data";
            MESSAGE "Press SPACE to view NEXT ACTION;
                    and Press ENTER to select"

        READ
    
```

```

DO CASE
  CASE next_choice = "Add Criteria"
    DO Forward
    REPLACE Plant_Id WITH M_Plant_Id
    REPLACE Labor_Ben WITH S_Labor_Ben
  CASE next_choice = "Add Type"
    DO Forward
    STORE .F. TO Loop_Benefit_Criteria
  CASE next_choice = "Next Data"
    STORE .F. TO Loop_Benefit_Criteria
    STORE .F. TO Loop_Labor_Benefit
  OTHERWISE
  ENDCASE
ENDDO      && end for Loop_Benefit_Criteria
ENDDO      && end for Loop_Labor_Benefit
STORE SPACE (15) TO next_choice
RETURN

```

PROCEDURE Other_Facilities_Input

```

SELECT 16
REPLACE Plant_Id With M_Plant_Id
DO Scr_Cooperative

```

```

SELECT 17
STORE .T. TO Loop_School
DO WHILE Loop_School=.T.
  REPLACE Plant_Id WITH M_Plant_Id
  DO Screen_School
  IF Schools = "Un-Available"
    STORE .F. TO Loop_School
  ELSE
    @ 20,23 SAY "NEXT ACTION : "
    @ 20,41 GET next_choice PICTURE "XXXXXXXXXXXXXX";
    FUNCTION "M Add Provided,Next Data";
    MESSAGE "Press SPACE to view NEXT ACTION;
            and Press ENTER to select"
  READ
  DO CASE
    CASE next_choice = "Add Provided"
      DO Forward

```

```

        CASE next_choice = "Next Data"
            STORE .F. TO Loop_School
        OTHERWISE
            ENDCASE
        ENDIF
    ENDDO
    STORE SPACE (15) TO next_choice

    SELECT 18
    STORE .T. TO Loop_Type_Oth_Fac
    DO WHILE Loop_Type_Oth_Fac=.T.
        REPLACE Plant_Id With M_Plant_Id
        DO Screen_Other_Facilities
        IF Facilities = "Un-Available"
            STORE .F. TO Loop_Type_Oth_Fac
        ELSE
            STORE .T. TO Loop_Facilities_Given
            DO WHILE Loop_Facilities_Given=.T.
                DO Screen_Fac_Given
                @ 20,23 SAY "NEXT ACTION : "
                @ 20,41 GET next_choice PICTURE "XXXXXXXXX";
                FUNCTION "M Add Fac_Given,Add;
                    Facilities,Next Data";
                MESSAGE "Press SPACE to view NEXT ACTION;
                    and Press ENTER to select"
                READ
            DO CASE
                CASE next_choice = "Add Fac_Given"
                    DO Forward
                    REPLACE Plant_Id WITH M_Plant_Id
                    REPLACE Facilities WITH S_Fac
                CASE next_choice = "Add Facilities"
                    DO Forward
                    STORE .F. TO Loop_Facilities_Given
                CASE next_choice = "Next Data"
                    STORE .F. TO Loop_Facilities_Given
                    STORE .F. TO Loop_Type_Oth_Fac
                OTHERWISE
            ENDCASE
        ENDDO
    ENDIF
    ENDDO
    STORE SPACE (15) TO next_choice
    RETURN

```

```

PROCEDURE Social_Environmental_Input
  SELECT 19
  STORE .T. TO Loop_Soc_Env_Act
  DO WHILE Loop_Soc_Env_Act=.T.
    REPLACE Plant_Id WITH M_Plant_Id
    DO Screen_SE_Activity
    IF Activity = "Not exist"
      STORE .F. TO Loop_Soc_Env_Act
    ELSE
      STORE .T. TO Loop_Type_of_Soc_Act
      DO WHILE Loop_Type_of_Soc_Act=.T.
        DO Scr_Act_Type_of_SE
        STORE .T. TO Loop_Availability_of_Soc
        DO WHILE Loop_Availability_of_Soc=.T.
          DO Scr_Availability_of_SE
          @ 20,23 SAY "NEXT ACTION : "
          @ 20,41 GET next_choice PICTURE "XXXXXXX";
          FUNCTION "M Add Availabilty,Add;
                  Criteria, Add Type,Next;
                  Data";
          MESSAGE "Press SPACE to view NEXT;
                  ACTION and Press ENTER to;
                  select"
        READ
        DO CASE
          CASE next_choice = "Add Availabilty"
            DO Forward
            REPLACE Plant_Id WITH M_Plant_Id
            REPLACE Activity WITH S_Acts
            REPLACE Type WITH S_Service_type
          CASE next_choice = "Add Criteria"
            DO Forward
            REPLACE Plant_Id WITH M_Plant_Id
            REPLACE Activity WITH S_Acts
            STORE .F. TO;
              Loop_Availability_of_Soc
          CASE next_choice ="Add Type"
            DO Forward
            STORE .F. TO;
              Loop_Availability_of_Soc
            STORE .F. TO Loop_Type_of_Soc_Act

```

```

        CASE next_choice = "Next Data"
            STORE .F. TO;
                Loop_Availability_of_Soc
            STORE .F. TO Loop_Type_of_Soc_Act
            STORE .F. TO Loop_Soc_Env_Act
        OTHERWISE
            ENDCASE
        ENDDO
    ENDDO
ENDIF
ENDDO
STORE SPACE (15) TO next_choice
RETURN

```

```

PROCEDURE Add_Plantation_or_Exit
    CLEAR
    @ 12,23 SAY "NEXT ACTION : "
    @ 12,41 GET next_choice PICTURE "XXXXXXXXXXXXXXXXX";
        FUNCTION "M Add Plantation,Exit";
        MESSAGE "Press SPACE to view NEXT ACTION;
            and Press ENTER to select"

    READ
    DO CASE
        CASE next_choice="Add Plantation"
            DO forward
            SELECT 18
            DO forward
            SELECT 17
            DO forward
            SELECT 16
            DO forward
            SELECT 15
            DO forward
            SELECT 14
            DO forward
            SELECT 13
            DO forward
            SELECT 12
            DO forward
            SELECT 11
            DO forward
            SELECT 10
            DO forward
            SELECT 9

```

```

        DO forward
        SELECT 8
        DO forward
        SELECT 7
        DO forward
        SELECT 6
        DO forward
        SELECT 5
        DO forward
        SELECT 4
        DO forward
        SELECT 3
        DO forward
        SELECT 2
        DO forward
        SELECT 1
        DO forward
    CASE next_choice="Exit"
        STORE .F. TO Loop_General_Information
    OTHERWISE
ENDCASE
RETURN

```

```

PROCEDURE Screen_General_Inf
    CLEAR
    @ 3,25 SAY "PLANTATION CLASSIFICATION"
    @ 4,25 SAY "-----"
    @ 7,16 SAY "Plantation ID Number :"
    @ 7,39 GET Plant_id PICTURE "XXXXXXX"
    @ 9,16 SAY "Name of Plantation   :"
    @ 9,39 GET Namep PICTURE "XXXXXXXXXXXXXXXXXXXXXXXXXXXX"
    @ 11,16 SAY "Name of Company       :"
    @ 11,39 GET Company PICTURE "XXXXXXXXXXXXXXXXXXXXXXXXXXXX"
    @ 13,16 SAY "Location "
    @ 14,21 SAY "Province           : "
    @ 14,39 GET Province PICTURE "XXXXXXXXXXXXXXXXXXXXXXXXXXXX"
    @ 15,21 SAY "District             : "
    @ 15,39 GET District PICTURE "XXXXXXXXXXXXXXXXXXXXXXXXXXXX"
    READ
    STORE Plant_id TO M_Plant_id
    STORE Namep TO M_Namep
RETURN

```


PROCEDURE Screen_Leaders_Types

```

CLEAR
@ 3,27 SAY "L E A D E R S H I P"
@ 4,27 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_id
@ 7,22 SAY "Name of Plantation   :"
@ 7,45 SAY M_Namep
@ 10,16 Say "Type of Leader   :"
@ 10,32 GET Leader PICTURE "XXXXXXXXXXXXXXXXXXXXX";
      FUNCTION "M Board of Directore,;
      Directore,Field Manager";
      MESSAGE "Press SPACE to view TYPE OF;
      LEADER and Press ENTER to;
      select"

@ 12,16 SAY "Name of Leader   :"
@ 12,32 GET Name1 PICTURE "XXXXXXXXXXXXXXXXXXXXX"
READ
STORE Leader TO M_Leader
STORE Name1 TO M_Name1
RETURN

```

PROCEDURE Screen_Knowledge

```

CLEAR
@ 3,27 SAY " K N O W L E D G E "
@ 4,27 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_id
@ 7,22 SAY "Name of Plantation   :"
@ 7,45 SAY M_Namep
@ 10,16 SAY "Leader               :"
@ 10,35 SAY M_Leader
@ 11,16 SAY "Name                 :"
@ 11,35 SAY M_Name1
@ 13,16 SAY "Type of Knowledge:"
@ 13,35 GET Knowledge PICTURE "XXXXXXXXXXXXXXXXXXXXX";
      FUNCTION "M Formal Education,Non-Formal;
      Education,Experience";
      MESSAGE "Press SPACE to view TYPE OF;
      KNOWLEDGE and Press ENTER to
      select"

READ
@ 14,16 SAY "Level               :"

```

```

DO CASE
  CASE Knowledge="Formal Education"
    @ 14,35 GET Levelk PICTURE "XXXXXXXXXXXXXXXXXXXXX";
    FUNCTION "M Elementary School,Junior High;
      School, Agric. Junior High;
      School, Senior High School,;
      Agric. Senior High School,Three;
      Years College,Agric. 3 Years;
      College,>=Bachelor, >=Bachelor;
      of Agriculture";
    MESSAGE "Press SPACE to view LEVEL and;
      Press ENTER to select"

  CASE Knowledge="Non-Formal Education"
    @ 14,35 GET Levelk PICTURE "XXXXXXXXXXXXXXXXXXXXX";
    FUNCTION "M Mgt-LPP <30, Mgt-LPP >=30,;
      Mgt-non-LPP <30, Mgt-non-LPP;
      >=30,Mkt <30,Mkt >=30,Fin <30,;
      Fin >=30,Cultivation <30,;
      Cultivation>=30,Processing<30,;
      Processing>=30,Warehouse <30,;
      Warehouse >=30";
    MESSAGE "Press SPACE to view LEVEL and;
      Press ENTER to select"

    @ 14,61 SAY "days"

  OTHERWISE      && Knowledge="Experience"
    @ 14,35 GET Levelk PICTURE "XXXXXXXXXXXXXXXXXXXXX";
    FUNCTION "M Plantation <3,Plantation 3-6,;
      Plantation >6,Other Agriculture;
      <3,Other Agriculture 3-6,Other;
      Agriculture >6,;Non-agriculture;
      <3,Non-agriculture 3-6,Non-;
      agriculture >6";
    MESSAGE "Press SPACE to view LEVEL and;
      Press ENTER to select"

    @ 14,61 SAY "years"

  ENDCASE
  READ
  RETURN

```

PROCEDURE Screen_Fin

```

CLEAR
@ 3,27 SAY "FINANCIAL MANAGEMENT"
@ 4,27 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_id
@ 7,22 SAY "Name of Plantation  :"
@ 7,45 SAY M_Namep
@ 10,18 SAY "Does the Firm Record Accounting  :"
@ 10,54 GET Acc_Record PICTURE "XXX";
      FUNCTION "M Yes, No";
      MESSAGE "Press SPACE to view the Choice;
              and Press ENTER to select"
@ 12,18 SAY "Does the Firm make Balance Sheet  :"
@ 12,54 GET B_Sheet PICTURE "XXX";
      FUNCTION "M Yes,No";
      MESSAGE "Press SPACE to view the Choice;
              and Press ENTER to select"
@ 14,18 SAY "Does Accounting Record be Audited  :"
@ 14,54 GET Audit PICTURE "XXX";
      FUNCTION "M Yes,No";
      MESSAGE "Press SPACE to view the Choice;
              and Press ENTER to select"

READ
RETURN

```

PROCEDURE Screen_Bonus

```

CLEAR
@ 3,32 SAY "B O N U S"
@ 4,32 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_id
@ 7,22 SAY "Name of Plantation  :"
@ 7,45 SAY M_Namep
@ 10,16 SAY "Bonus Given in Year  :"
@ 10,38 GET Bon_Year
@ 12,16 SAY "Amount Bonus Given  :"
@ 12,38 GET B_Amount
@ 12,42 SAY "times month-salary"

READ
RETURN

```

PROCEDURE Screen_Mkt_Mgt

```

CLEAR
@ 3,27 SAY "MARKETING MANAGEMENT"
@ 4,27 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_id
@ 7,22 SAY "Name of Plantation  :"
@ 7,45 SAY M_Namep
@ 10,22 SAY "Commodity          :"
@ 10,45 GET Commodity PICTURE "XXXXXXXXXX";
        FUNCTION "M Rubber,Coffee,Cocoa,Oil
                Palm,Coconut,Tobacco,Clove,Tea,;
                Sugarcane,Cotton,Pepper,Kapok,;
                Nutmeg,Cashew  ";
        MESSAGE "Press SPACE to view the Choice;
                and Press ENTER to select"

@ 12,22 SAY "Total Cost per Kg    : Rp"
@ 12,48 GET Cost_Kg_Rp
@ 14,22 Say "Sales Price per Kg   : Rp"
@ 14,48 GET Sale_Kg_Rp
READ
RETURN

```

PROCEDURE Screen_Plannings_Types

```

CLEAR
@ 3,27 SAY "PLANNING & EVALUATION"
@ 4,27 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_id
@ 7,22 SAY "Name of Plantation  :"
@ 7,45 SAY M_Namep
@ 10,22 SAY "Type              :"
@ 10,39 GET Plan_Eval PICTURE "XXXXXXXXXX";
        FUNCTION "M Planning,Evaluation";
        MESSAGE "Press SPACE to view the Choice;
                and Press ENTER to select"

READ
STORE Plan_Eval TO M_Plan_Eval
RETURN

```

PROCEDURE Screen_Activities

```

CLEAR
@ 3,27 SAY "PLANNING & EVALUATION"
@ 4,27 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_id
@ 7,22 SAY "Name of Plantation  :"
@ 7,45 SAY M_Namep
@ 10,22 SAY "Type                :"
@ 10,39 SAY M_Plan_Eval
@ 12,22 SAY "Activity            :"
@ 12,39 GET Activity PICTURE "XXXXXXXXXXXXXXXXXXXX";
      FUNCTION "M Land Used,Crops Cultivation,;
              Crops Processing,Marketing";
      MESSAGE "Press SPACE to view the Choice;
              and Press ENTER to select"

@ 13,22 SAY "Implementation  :"
DO CASE
  CASE M_Plan_Eval="Planning"
    @ 13,39 GET Implement PICTURE"XXXXXXXXXXXXXXXXXXXX";
      FUNCTION "M Yearly,5 Years,Yearly & 5;
              Years";
      MESSAGE "Press SPACE to view the Choice;
              and Press ENTER to select"

  CASE M_Plan_Eval="Evaluation"
    @ 13,39 GET Implement PICTURE"XXXXXXXXXXXXXXXXXXXX";
      FUNCTION "M Semester,Yearly,Semester &
              Yearly";
      MESSAGE "Press SPACE to view the Choice;
              and Press ENTER to select"

  OTHERWISE
  ENDCASE
  READ
RETURN

```

PROCEDURE Screen_Employee

```

CLEAR
@ 3,32 SAY "E M P L O Y E E"
@ 4,32 SAY "-----"
@ 6,25 SAY "Plantation ID Number :"
@ 6,48 SAY M_Plant_id
@ 7,25 SAY "Name of Plantation  :"
@ 7,48 SAY M_Namep
@ 12,25 SAY "Number of Employee  :"

```

```

@ 12,48 GET Employee
READ
RETURN

```

PROCEDURE Screen_Commodity_Area

```

CLEAR
@ 3,27 SAY " L A N D   U S E D"
@ 4,27 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_id
@ 7,22 SAY "Name of Plantation   :"
@ 7,45 SAY M_Namep
@ 10,22 SAY "Commodity           :"
@ 10,45 GET Commodity PICTURE "XXXXXXXXXX";
      FUNCTION "M Rubber,Coffee,Cocoa,Oil
                Palm,Coconut,Tobacco,Clove,Tea,;
                Sugarcane,Cotton,Pepper,Kapok,;
                Nutmeg,Cashew";
      MESSAGE "Press SPACE to view the Choice;
                and Press ENTER to select"

READ
STORE Commodity TO M_Commodity
RETURN

```

PROCEDURE Screen_Age_of_Commodity

```

CLEAR
@ 3,27 SAY " L A N D   U S E D"
@ 4,27 SAY "-----"
@ 6,22 SAY "Plantation ID Number  :"
@ 6,46 SAY M_Plant_id
@ 7,22 SAY "Name of Plantation    :"
@ 7,46 SAY M_Namep
@ 10,22 SAY "Commodity           :"
@ 10,46 SAY M_Commodity
@ 12,16 SAY "Commodity's Age Group      :"
@ 12,46 GET Comm_Age PICTURE "XXXXXXXXXXXXXXXXXXXX";
      FUNCTION "M Immature Crops,Mature Crops,;
                Post Mature Crops,;
                Non_Productive Crops";
      MESSAGE "Press SPACE to view the Choice and
                Press ENTER to select"

READ
STORE Comm_Age TO M_Age_Comm
@ 13,16 SAY "Area of"

```

```

@ 13,24 SAY M_Age_Comm
@ 13,44 SAY ":"
@ 13,46 GET Com_Age_Ha
@ 13,56 SAY "Ha"
READ
STORE SPACE (20) TO M_Age_Comm
RETURN

```

PROCEDURE Screen_Non_Commodity_Area

```

CLEAR
@ 3,27 SAY " L A N D   U S E D"
@ 4,27 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_id
@ 7,22 SAY "Name of Plantation  :"
@ 7,45 SAY M_Namep
@ 10,16 SAY "Factory & Other Facilities Area :"
@ 10,50 GET Facilities
@ 10,60 SAY "Ha"
@ 12,16 SAY "Un_Used Land                :"
@ 12,50 GET Unused_Land
@ 12,60 SAY "Ha"
READ
RETURN

```

PROCEDURE Screen_Begin_Productive

```

CLEAR
@ 3,22 SAY "COMMODITY'S AGE BEGIN PRODUCTIVE"
@ 4,22 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_id
@ 7,22 SAY "Name of Plantation  :"
@ 7,45 SAY M_Namep
@ 10,22 SAY "Commodity                :"
@ 10,45 GET Commodity PICTURE "XXXXXXXXXX";
      FUNCTION "M Rubber,Coffee,Cocoa,Oil Palm,;
              Coconut,Tobacco,Clove,Tea,;
              Sugarcane,Cotton,Pepper,Kapok,;N
              utmeg,Cashew  ";
      MESSAGE "Press SPACE to view the Choice;
              and Press ENTER to select"

READ

```

```

@ 12,22 SAY "Age Begin Productive :"
@ 12,45 GET Age_Prod
DO CASE
    CASE Commodity="Sugarcane".OR.Commodity="Cotton" .OR.;
        Commodity="Tobacco" .OR.; Commodity="Rosella"
        @ 12,48 SAY "Months"
    OTHERWISE    && Other Commodities
        @ 12,48 SAY "Years"
ENDCASE
READ
RETURN

```

PROCEDURE Screen_Crops

```

CLEAR
@ 3,27 SAY " C U L T I V A T I O N"
@ 4,27 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_id
@ 7,22 SAY "Name of Plantation  :"
@ 7,45 SAY M_Namep
@ 10,22 SAY "Commodity          :"
@ 10,45 GET Commodity PICTURE "XXXXXXXXXX";
        FUNCTION "M Rubber,Coffee,Cocoa,Oil Palm,;
                Coconut,Tobacco,Clove,Tea,;
                Sugarcane,Cotton,Pepper,Kapok,;
                Nutmeg,Cashew  ";
        MESSAGE "Press SPACE to view the Choice;
                and Press ENTER to select"

READ
STORE Commodity TO M_Crops
RETURN

```

PROCEDURE Screen_Cultivation

```

CLEAR
@ 3,27 SAY " C U L T I V A T I O N"
@ 4,27 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_id
@ 7,22 SAY "Name of Plantation  :"
@ 7,45 SAY M_Namep
@ 10,22 SAY "Commodity          :"
@ 10,45 SAY M_Crops
@ 12,22 SAY "Cultivation        :"

```



```

@ 12,45 GET Cultivate PICTURE "XXXXXXXXXXXXXXXXXX";
      FUNCTION "M Recommendation,Fertilizer,;
                Pest Control,Pest Management,;
                Cover Crops,Growth Regulator";
      MESSAGE "Press SPACE to view the Choice;
                and Press ENTER to select"

READ
DO CASE
  CASE Cultivate = "Recommendation"
    @ 13,45 GET Activity Picture "XXXXXXXXXXXXXX";
    FUNCTION "M Available, Un_Available";
    MESSAGE "Press SPACE to view the Choice;
              and Press ENTER to select"

  OTHERWISE
    @ 13,22 SAY "Implication          :";
    @ 13,45 GET Activity PICTURE "XXXXXXXXXXXXXXXXXX";
    FUNCTION "M Refer to Recommendation, Not;
              refer to Recommendation";
    MESSAGE "Press SPACE to view the Choice;
              and Press ENTER to select"

  ENDCASE
  READ
RETURN

PROCEDURE Screen_Yield
  CLEAR
  @ 3,29 SAY " Y I E L D"
  @ 4,29 SAY "-----"
  @ 6,22 SAY "Plantation ID Number :";
  @ 6,45 SAY M_Plant_id
  @ 7,22 SAY "Name of Plantation   :";
  @ 7,45 SAY M_Namep
  @ 10,22 SAY "Commodity Produced   :";
  @ 10,45 GET Commodity PICTURE "XXXXXXXXXX";
      FUNCTION "M Rubber,Coffee,Cocoa,Oil Palm,;
                Coconut,Clove,Tea,Tobacco,;
                Kapok, Nutmeg, Cashew, Cotton,;
                Pepper,Sugarcane";
      MESSAGE "Press SPACE to view the Choice;
                and Press ENTER to select"

  READ
  DO CASE
    CASE Commodity = "Coffee"
      @ 11,22 SAY "Type of Commodity   :";

```

```

    @ 11,45 GET Type PICTURE "XXXXXXXXXXXXX";
        FUNCTION "M Robusta,Arabica ";
        MESSAGE "Press SPACE to view the Choice;
                and Press ENTER to select"

CASE Commodity = "Tobacco"
    @ 11,22 SAY "Type of Commodity      :"
    @ 11,45 GET Type PICTURE "XXXXXXXXXXXXX";
        FUNCTION "M Deli,Vorst,Virginia,Besuki";
        MESSAGE "Press SPACE to view the Choice;
                and Press ENTER to select"

CASE Commodity = "Sugarcane"
    @ 11,22 SAY "Type of Commodity      :"
    @ 11,45 GET Type PICTURE "XXXXXXXXXXXXX";
        FUNCTION "M Irrigated,Un_irrigated";
        MESSAGE "Press SPACE to view the Choice;
                and Press ENTER to select"

CASE Commodity = "Coconut"
    @ 11,22 SAY "Type of Commodity      :"
    @ 11,45 GET Type PICTURE "XXXXXXXXXXXXX";
        FUNCTION "M Hybrid,Tall";
        MESSAGE "Press SPACE to view the Choice;
                and Press ENTER to select"

    OTHERWISE
ENDCASE
@ 12,22 SAY "Yield per Ha      :"
@ 12,45 GET Yield_Kg
@ 12,55 SAY "Kg"
READ
RETURN

PROCEDURE Screen_Processed_Commodity
    CLEAR
    @ 3,27 SAY "CROPS PROCESSING"
    @ 4,27 SAY "-----"
    @ 6,22 SAY "Plantation ID Number :"
    @ 6,45 SAY M_Plant_Id
    @ 7,22 SAY "Name of Plantation  :"
    @ 7,45 SAY M_Namep
    @ 10,22 SAY "Commodity      :"

```

```

@ 10,45 GET Commodity PICTURE "XXXXXXXXXX";
      FUNCTION "M Rubber,Coffee,Cocoa,Oil Palm,;
              Coconut,Tobacco,Clove,Tea,;
              Sugarcane,Cotton,Pepper,Kapok,;
              Nutmeg,Cashew  ";
      MESSAGE "Press SPACE to View the Choice;
              and Press ENTER to Select"

READ
STORE Commodity TO M_Plant
RETURN

```

PROCEDURE Screen_Items_of_Processing

```

CLEAR
@ 3,27 SAY "CROPS PROCESSING"
@ 4,27 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_Id
@ 7,22 SAY "Name of Plantation  :"
@ 7,45 SAY M_Namep
@ 10,22 SAY "Commodity          :"
@ 10,45 SAY M_Plant
@ 12,16 SAY "Items of Processing  :"

@ 12,39 GET Item_Proc PICTURE "XXXXXXXXXXXXXXXXXX";
      FUNCTION "M Machine Facilities,;
              Processing, Quality Control, Others";
      MESSAGE "Press SPACE to View the Choice;
              and Press ENTER to Select"

READ
STORE Item_Proc TO M_Item
RETURN

```

PROCEDURE Screen_Unit

```

CLEAR
@ 3,27 SAY "CROPS PROCESSING"
@ 4,27 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_Id
@ 7,22 SAY "Name of Plantation  :"
@ 7,45 SAY M_Namep
@ 10,22 SAY "Commodity          :"
@ 10,45 SAY M_Plant

```

```

@ 12,16 SAY "Items of Processing  :"
@ 12,39 SAY M_Item
@ 14,16 SAY "Unit of Items          :"
DO CASE
  CASE M_Item = "Machine Facilities"
    @ 14,39 GET Unit_Item PICTURE "XXXXXXXXXXXXXXXXX";
    FUNCTION "M Machine1,Machine 2,Machine 3";
    MESSAGE "Press SPACE to View the Choice;
            and Press ENTER to Select"
  CASE M_Item = "Processing"
    @ 14,39 GET Unit_Item PICTURE "XXXXXXXXXXXXXXXXX";
    FUNCTION "M Raw Materials,Products";
    MESSAGE "Press SPACE to View the Choice;
            and Press ENTER to Select"
  CASE M_Item = "Quality Control"
    @ 14,39 GET Unit_Item PICTURE "XXXXXXXXXXXXXXXXX";
    FUNCTION "M QC Machine 1,QC Machine 2, ; QC
            Machine 3 ";
    MESSAGE "Press SPACE to View the Choice;
            and Press ENTER to Select"
  CASE M_Item = "Others"
    @ 14,39 GET Unit_Item PICTURE "XXXXXXXXXXXXXXXXX";
    FUNCTION "M By Products,Waste";
    MESSAGE "Press SPACE to View the Choice;
            and Press ENTER to Select"

  OTHERWISE
ENDCASE
READ
STORE Unit_Item TO M_Unit
RETURN

```

```

PROCEDURE Criteria_Screen
  CLEAR
  @ 3,27 SAY "CROPS PROCESSING"
  @ 4,27 SAY "-----"
  @ 6,22 SAY "Plantation ID Number  :"
  @ 6,45 SAY M_Plant_Id
  @ 7,22 SAY "Name of Plantation    :"
  @ 7,45 SAY M_Namep
  @ 10,22 SAY "Commodity              :"
  @ 10,45 SAY M_Plant
  @ 12,16 SAY "Items of Processing  :"
  @ 12,39 SAY M_Item
  @ 13,16 SAY "Unit of Items          :"

```

```

@ 13,39 SAY M_Unit
@ 14,16 SAY "Criteria of Unit      :"
DO CASE
  CASE M_Unit="Machine 1".OR.M_Unit="Machine 2".OR.;
    M_Unit="Machine 3"
    @ 14,39 GET Criteria PICTURE"XXXXXXXXXXXXXXXXX";
      FUNCTION "M Age of the Machine,Condition;
        of the Machine,Licensed;
        Capacity, Potential Capacity;;
        Used Capacity";
      MESSAGE "Press SPACE to View the Choice;
        and Press ENTER to Select"
  CASE M_Unit="Raw Materials"
    @ 14,39 GET Criteria PICTURE"XXXXXXXXXXXXXXXXX";
      FUNCTION "M Owned Processing,Other;
        Processing with Contract;; Other
        Processing without;
        Contract,Sold Raw Materials";
      MESSAGE "Press SPACE to View the Choice;
        and Press ENTER to Select"
  CASE M_Unit="Products"
    @ 14,39 SAY "Quality"
    DO CASE
      CASE Commodity="Rubber"
        @ 14,47 GET Criteria PICTURE"XXXXXXXXXX";
          FUNCTION "M Sheet I,SIR 3,SIR 5,SIR 10;;
            SIR 20,Crepe,Other Quality";
          MESSAGE "Press SPACE to View the Choice;
            and Press ENTER to Select"
      CASE Commodity="Coffee".OR.Commodity="Pepper"
        @ 14,47 GET Criteria PICTURE"XXXXXXXXXX";
          FUNCTION "M I,II,Other Quality ";
          MESSAGE "Press SPACE to View the Choice;
            and Press ENTER to Select"
      CASE Commodity="Oil Palm"
        @ 14,47 GET Criteria PICTURE"XXXXXXXXXXXX";
          FUNCTION "M CPO,Other Quality";
          MESSAGE "Press SPACE to View the Choice;
            and Press ENTER to Select"
      CASE Commodity="Cocoa"
        @ 14,47 GET Criteria PICTURE"XXXXXXXXXXXX";
          FUNCTION "M I,Other Quality";
          MESSAGE "Press SPACE to View the Choice;
            andPress ENTER to Select"

```

```

CASE Commodity="Sugarcane"
  @ 14,47 GET Criteria PICTURE"XXXXXXXXXXXXX";
  FUNCTION"M Refined Sugar,Other Quality";
  MESSAGE "Press SPACE to View the Choice;
           and Press ENTER to Select"
CASE Commodity="Tobacco"
  @ 14,47 GET Criteria PICTURE"XXXXXXXXXXXXX";
  FUNCTION "M Krosok I,Other Quality";
  MESSAGE "Press SPACE to View the Choice;
           and Press ENTER to Select"
OTHERWISE
  STORE "Without Composition" to Criteria
ENDCASE
CASE M_Unit="QC Machine 1".OR.M_Unit="QC Machine 2";
.OR. M_Unit="QC Machine 3"
  @ 14,39 GET Criteria PICTURE"XXXXXXXXXXXXXXXXXXXXX";
  FUNCTION "M Age of the Machine,Condition;
           of the Machine";
  MESSAGE "Press SPACE to View the Choice;
           and Press ENTER to Select"
CASE M_Unit="By Products"
  @ 14,39 GET Criteria PICTURE"XXXXXXXXXXXXXXXXXXXXX";
  FUNCTION "M Owned Processing,Other;
           Processing,Sell Non_Processed";
  MESSAGE "Press SPACE to View the Choice;
           and Press ENTER to Select"
CASE M_Unit="Waste"
  @ 14,39 GET Criteria PICTURE"XXXXXXXXXXXXXXXXXXXXX";
  FUNCTION"M With Management,Without;
           Management";
  MESSAGE "Press SPACE to View the Choice;
           and Press ENTER to Select"
OTHERWISE
ENDCASE
READ
STORE Criteria to M_Criteria
@ 15,39 GET Grade
DO CASE
  CASE M_Criteria = "Age of the Machine"
    @ 15,49 SAY "Years"
  CASE M_Criteria = "Condition of the Machine"
    @ 17,16 SAY "(1=Good, 2=Slightly
                Ruined,3=Completely Ruined)"

```

```

CASE M_Criteria="Licensed Capacity" .OR.;
  M_Criteria="Potential Capacity" .OR.;
  M_Criteria="Used Capacity"
  @ 15,49 SAY "Kg per Hour"
CASE M_Criteria="Without Composition"
  OTHERWISE
    @ 15,49 SAY "%"
ENDCASE
READ
RETURN

PROCEDURE Screen_Works_Facilities
  CLEAR
  @ 3,27 SAY "WORKS FACILITIES"
  @ 4,27 SAY "-----"
  @ 6,22 SAY "Plantation ID Number :"
  @ 6,45 SAY M_Plant_Id
  @ 7,22 SAY "Name of Plantation   :"
  @ 7,45 SAY M_Namep
  @ 10,22 SAY "Type of Facilities   :"
  @ 10,45 GET Work_Fac PICTURE "XXXXXXXXXXXXXXXXXX";
      FUNCTION "M Work Safety,Health;
              Facilities,Un-Available";
      MESSAGE "Press SPACE to View the Choice;
              and Press ENTER to Select"

  READ
  STORE Work_Fac TO S_Work_Fac
  RETURN

```

```

PROCEDURE Screen_WF_Availability
  CLEAR
  @ 3,27 SAY "WORKS FACILITIES"
  @ 4,27 SAY "-----"
  @ 6,22 SAY "Plantation ID Number :"
  @ 6,45 SAY M_Plant_Id
  @ 7,22 SAY "Name of Plantation   :"
  @ 7,45 SAY M_Namep
  @ 10,22 SAY "Type of Facilities   :"
  @ 10,45 SAY S_Work_Fac
  @ 12,22 SAY "Availability         :"

```

```

DO CASE
  CASE S_Work_Fac = "Work Safety"
    @ 12,45 GET Avail PICTURE "XXXXXXXXXXXXXXXXXX";
    FUNCTION "M Uniform, Footwear, Masker, ;
              Gloves, Work hat, First aid ;
              box, Fire extinguisher";
    MESSAGE "Press SPACE to View the Choice;
              and Press ENTER to Select"
  CASE S_Work_Fac = "Health Facilities"
    @ 12,45 GET Avail PICTURE "XXXXXXXXXXXXXXXXXX";
    FUNCTION "M Hospital, Clinic, Medical;
              Doctor, Nurse";
    MESSAGE "Press SPACE to View the Choice;
              and Press ENTER to Select"

  OTHERWISE
  ENDCASE
  READ
  RETURN

PROCEDURE Screen_Labor_Benefit
  CLEAR
  @ 3,27 SAY " LABOR BENEFIT"
  @ 4,27 SAY "-----"
  @ 6,22 SAY "Plantation ID Number :"
  @ 6,45 SAY M_Plant_Id
  @ 7,22 SAY "Name of Plantation  :"
  @ 7,45 SAY M_Namep
  @ 10,22 SAY "Type of Benefit      :"
  @ 10,45 GET Labor_Ben PICTURE "XXXXXXXXXXXX";
    FUNCTION "M Wage, Insurance, Housing, Labor;
              Union";
    MESSAGE "Press SPACE to View the Choice;
              and Press ENTER to Select"

  READ
  STORE Labor_Ben TO S_Labor_Ben
  RETURN

PROCEDURE Screen_LB_Criteria
  CLEAR
  @ 3,27 SAY " LABOR BENEFIT"
  @ 4,27 SAY "-----"
  @ 6,22 SAY "Plantation ID Number :"
  @ 6,45 SAY M_Plant_Id
  @ 7,22 SAY "Name of Plantation  :"

```



```

@ 7,45 SAY M_Namep
@ 10,22 SAY "Type of Benefit      :"
@ 10,45 SAY S_Labor_Ben
DO CASE
  CASE S_Labor_Ben = "Wage"
    @ 12,22 SAY "Criteria of Benefit  :"
    @ 12,45 GET Criteria PICTURE "XXXXXXXXXX";
      FUNCTION "M Salary,Rice";
      MESSAGE "Press SPACE to View the Choice;
              and Press ENTER to Select"
    @ 13,22 SAY "Given                  :"
    @ 13,45 GET Given
    @ 13,52 SAY "% to Government's Standard"
  CASE S_Labor_Ben = "Housing"
    @ 12,22 SAY "Criteria - Housing to:"
    @ 12,45 GET Criteria PICTURE "XXXXXXXXXX";
      FUNCTION "M Staff,Non-Staff ";
      MESSAGE "Press SPACE to View the Choice;
              and Press ENTER to Select"

READ
DO CASE
  CASE Criteria = "Staff"
    @ 13,22 SAY "Given                  :"
    @ 13,45 GET Given
    @ 13,52 SAY "% to number of Staff"
  CASE Criteria = "Non-Staff"
    @ 13,22 SAY "Given                  :"
    @ 13,45 GET Given
    @ 13,52 SAY "% to number of Non-Staff"
  OTHERWISE
ENDCASE
OTHERWISE
  STORE SPACE (9) TO Criteria
    @ 12,22 SAY "Given                  :"
    @ 12,45 GET Given
    @ 12,52 SAY "% to number of employee"
  ENDCASE
READ
RETURN

PROCEDURE Scr_Cooperative
  CLEAR
  @ 3,27 SAY "OTHER FACILITIES"
  @ 4,27 SAY "-----"

```

```

@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_Id
@ 7,22 SAY "Name of Plantation  :"
@ 7,45 SAY M_Namep
@ 10,22 SAY "Type of Facilities   : Cooperative"
@ 12,22 SAY "Type of Cooperative  :"
@ 12,45 GET Cooperativ PICTURE "XXXXXXXXXXXXXXXXXXXX";
      FUNCTION "M Consumption,Credit, Mixed,; Un-
      Available";
      MESSAGE "Press SPACE to View the Choice;
      and Press ENTER to Select"

READ
IF .NOT. Cooperativ = "Un-Available"
  @ 14,22 SAY "Members              :"
  @ 14,45 GET Members
  @ 14,52 SAY "% to number of employee"
  READ
ENDIF
RETURN

PROCEDURE Screen_School
  CLEAR
  @ 3,27 SAY "OTHER FACILITIES"
  @ 4,27 SAY "-----"
  @ 6,22 SAY "Plantation ID Number :"
  @ 6,45 SAY M_Plant_Id
  @ 7,22 SAY "Name of Plantation  :"
  @ 7,45 SAY M_Namep
  @ 10,22 SAY "Type of Facilities   : Schools"
  @ 12,22 SAY "Provided              :"
  @ 12,45 GET Schools PICTURE "XXXXXXXXXXXXXXXXXXXX";
      FUNCTION "M Kindergarten,Primary School,;
      Teacher,Un-Available";
      MESSAGE "Press SPACE to View the Choice;
      and Press ENTER to Select"

  READ
  DO CASE
    CASE Schools="Kindergarten".OR.Schools="Primary School"
      @ 14,22 SAY "Availablity              :"
      @ 14,45 GET Avail PICTURE "XXXXXXXXXXXXXXXXXXXX";
          FUNCTION "M Permanent,Semi-permanent ";
          MESSAGE "Press SPACE to View the Choice;
          and Press ENTER to Select"

```

```

CASE Schools = "Teacher"
    @ 14,22 SAY "Availablity          :"
    @ 14,45 GET Avail PICTURE "XXXXXXXXXXXXXXXXXX";
        FUNCTION "M Available,Non-available";
        MESSAGE "Press SPACE to View the Choice;
                and Press ENTER to Select"

    OTHERWISE
ENDCASE
READ
RETURN

```

```

PROCEDURE Screen_Other_Facilities
    CLEAR
    @ 3,27 SAY "OTHER FACILITIES"
    @ 4,27 SAY "-----"
    @ 6,22 SAY "Plantation ID Number :"
    @ 6,45 SAY M_Plant_Id
    @ 7,22 SAY "Name of Plantation  :"
    @ 7,45 SAY M_Namep
    @ 9,22 SAY "Type of Facilities  :"
    @ 9,45 GET Facilities PICTURE "XXXXXXXXXXXXXXXXXXXX";
        FUNCTION "M Entertainment,Child care,;
                House of worship,Un-Available";
        MESSAGE "Press SPACE to View the Choice;
                and Press ENTER to Select"

    READ
    STORE Facilities TO S_Fac
RETURN

```

```

PROCEDURE Screen_Fac_Given
    CLEAR
    @ 3,27 SAY "OTHER FACILITIES"
    @ 4,27 SAY "-----"
    @ 6,22 SAY "Plantation ID Number :"
    @ 6,45 SAY M_Plant_Id
    @ 7,22 SAY "Name of Plantation  :"
    @ 7,45 SAY M_Namep
    @ 10,22 SAY "Type of Facilities  :"
    @ 10,45 SAY S_Fac
    DO CASE
        CASE Facilities = "Entertainment"
            @ 12,22 SAY "Entertainment Given  :"

```

```

@ 12,45 GET Avail PICTURE "XXXXXXXXXXXXXXXXXX";
      FUNCTION "M Sport facilities,Art;
                facilities,Cinema facilities ";
      MESSAGE "Press SPACE to View the Choice;
                and Press ENTER to Select"
CASE Facilities = "Child care"
  @ 12,22 SAY "Child care provided  :"
  @ 12,45 GET Avail PICTURE "XXXXXXXXXXXXXXXXXX";
      FUNCTION "M Available,Non-available  ";
      MESSAGE "Press SPACE to View the Choice;
                and Press ENTER to Select"
CASE Facilities = "House of worship"
  @ 12,22 SAY "Provided                :"
  @ 12,45 GET Avail PICTURE "XXXXXXXXXXXXXXXXXX";
      FUNCTION "M Permanent,Semi-permanent  ";
      MESSAGE "Press SPACE to View the Choice;
                and Press ENTER to Select"

      OTHERWISE
      ENDCASE
      READ
      RETURN

```

```

PROCEDURE Screen_SE_Activity
  CLEAR
  @ 3,22 SAY "SOCIAL SERVICES AND ENVIRONMENTAL CONCERN"
  @ 4,22 SAY "-----"
  @ 6,22 SAY "Plantation ID Number  :"
  @ 6,45 SAY M_Plant_Id
  @ 7,22 SAY "Name of Plantation    :"
  @ 7,45 SAY M_Namep
  @ 10,22 SAY "Type of Activity      :"
  @ 10,45 GET Activity PICTURE "XXXXXXXXXXXXXXXXXXXXXXXXXX";
      FUNCTION "M Social services,Environmental;
                concern,Not exist";
      MESSAGE "Press SPACE to View the Choice;
                and Press ENTER to Select"

      READ
      STORE Activity TO S_Acts
      RETURN

```

```

PROCEDURE Scr_Act_Type_of_SE
  IF Activity="Social services"
    CLEAR
    @ 3,22 SAY "SOCIAL SERVICES AND ENVIRONMENTAL CONCERN"

```

```

@ 4,22 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_Id
@ 7,22 SAY "Name of Plantation  :"
@ 7,45 SAY M_Namep
@ 10,22 SAY "Type of Activity      :"
@ 10,45 SAY S_Acts
@ 12,22 SAY "Type of Services      :"
@ 12,45 GET Type PICTURE "XXXXXXXXXXXXXXXXXXXXXXX";
        FUNCTION "M Extension to smallholder,;
                Assist smallholder  ";
        MESSAGE "Press SPACE to View the Choice;
                and Press ENTER to Select"

READ

ELSE
    REPLACE Type WITH "Waste management"
ENDIF
STORE Type TO S_Service_Type
RETURN

PROCEDURE Scr_Availability_of_SE
CLEAR
@ 3,22 SAY "SOCIAL SERVICES AND ENVIRONMENTAL CONCERN"
@ 4,22 SAY "-----"
@ 6,22 SAY "Plantation ID Number :"
@ 6,45 SAY M_Plant_Id
@ 7,22 SAY "Name of Plantation  :"
@ 7,45 SAY M_Namep
@ 10,22 SAY "Type of Activity      :"
@ 10,45 SAY S_Acts
@ 12,22 SAY "Criteria              :"
@ 12,45 SAY S_Service_Type
@ 14,22 SAY "Availability          :"
DO CASE
    CASE Type="Extension to smallholder"
        @ 14,45 GET Avail PICTURE "XXXXXXXXXXXXXXXXXXXXXXX";
        FUNCTION "M Management,Crops cultivation,;
                Crops processing, Marketing,;
                Field demonstration";
        MESSAGE "Press SPACE to View the Choice;
                and Press ENTER to Select"

```

```

CASE Type="Assist smallholder"
  @ 14,45 GET Avail PICTURE "XXXXXXXXXXXXXXXXXXXX";
    FUNCTION "M Processing,Marketing,Nursery;
      provided,Seed provided";
    MESSAGE "Press SPACE to View the Choice;
      and Press ENTER to Select"
CASE Type="Waste management"
  @ 14,45 GET Avail PICTURE "XXXXXXXXXXXXXXXXXXXX";
    FUNCTION "M In factory,Out factory";
    MESSAGE "Press SPACE to View the Choice;
      and Press ENTER to Select"

  OTHERWISE
ENDCASE
READ
RETURN

```

3. CALCULATION PROGRAM

```

CLEAR ALL
CLEAR
SET CURSOR OFF
@ 10,32 SAY "Wait Please"
DO Public_Working_Variable
DO Set_Working_Area
STORE 1 TO Recno_Em
STORE 1 TO Recno_Plt
STORE 1 TO Recno_CrA
STORE 1 TO Recno_Pro
SELECT 1
DO Reset_Working_Variable
STORE .T. TO Loop_Leaders_of_Firm
DO WHILE Loop_Leaders_of_Firm=.T.
  IF Plant_Id = M_Plant_Id
    DO Name_of_Leader_Summation
    DO Leaders_Score_Summation
    IF RECNO()=RECCOUNT()
      DO Management_Calc
      DO Estate_Field_Calc
      DO Processing_Calc
      DO Social_Services_Calc
      DO Class_Calc
      DO Saving_result
      STORE .F. TO Loop_Leaders_of_Firm
    
```

```

        ELSE
            SKIP
        ENDIF
    ELSE
        DO Management_Calc
        DO Estate_Field_Calc
        DO Processing_Calc
        DO Social_Services_Calc
        DO Class_Calc
        DO Saving_result
        IF Recno()=Reccount()
            APPEND BLANK
        ENDIF
        SELECT 1
        DO Reset_Working_Variable
    ENDIF
ENDDO
CLEAR
CLEAR ALL
DO CLASS
RETURN

PROCEDURE Public_Working_Variable
    PUBLIC M_Plant_Id, M_Namel, M_Name_Leader_Sum,;
    PUBLIC M_Sum_of_Formal, M_Sum_of_NonFormal,;
    PUBLIC M_Sum_of_Exp, M_Leader_Score_Calc,;
    PUBLIC M_Fin_Sum_Score, M_Bonus_Sum_Score,;
    PUBLIC M_Finmgt_Score_Calc,M_Commodity, M_Com_Sumation,;
    PUBLIC M_Mkt_Score_Sum, M_Mktmgt_Score_Calc,;
    PUBLIC M_Activity_Plan_Score_Sum, M_PlanEval_Score_Calc
    PUBLIC M_Labor_Needed,M_Man_Power_Calc,M_Management_Calc
    PUBLIC M_Planted_Area,M_Land_Used_Calc, M_Im_Crops_Area,;
    PUBLIC M_M_Crops_Area,M_PM_Crops_Area,; M_NP_Crops_Area
    PUBLIC M_Immature, M_Mature, M_Post_Mature,;
    PUBLIC M_Non_Productive, M_Plant, M_Crops_Area,;
    PUBLIC M_Group_Age_Sum,; M_Comp_of_Crops_Age_Calc
    PUBLIC M_Age_Prod_Calc,M_Cultivation_Calc,M_Yield_Calc
    PUBLIC M_Estate_Field_Calc, P_Land_Comm,
    PUBLIC P_Facilities_Score, P_Raw_materal_Score,;
    PUBLIC P_Product_Score, P_Control_Score, P_Others_Score,;
    PUBLIC P_WO_Processing,; P_Trees, P_Type_of_Trees_Sum,;
    PUBLIC P_M_Fac_Score, P_Machine,; P_Sum_of_Machine
    PUBLIC P_Age,P_Condition, P_License, P_Machine_Cap,;
    PUBLIC P_Potential, P_Used_Cap, QC_Machine,;

```

```
PUBLIC P_QC_Machine_Sum, P_Comm, P_Qlty_Ctl_Score,;  
PUBLIC P_Tot_Fac_Score,; P_QC_Tot_Score, P_CP_Calc  
PUBLIC SE_Score,S_Labor_Ben_Score,SE_Calc,Performance  
RETURN
```

```
PROCEDURE Set_Working_Area
```

```
  SELECT 1  
  USE mleader  
    GO TOP  
  SELECT 2  
  USE mdtbl1  
  SELECT 3  
  USE mfmtbl2  
  SELECT 4  
  USE fin_mgt  
    GO TOP  
  SELECT 5  
  USE bonus  
    GO TOP  
  SELECT 6  
  USE mkt_mgt  
    GO TOP  
  SELECT 7  
  USE planning  
    GO TOP  
  SELECT 8  
  USE employee  
    GO TOP  
  SELECT 9  
  USE com_area  
    GO TOP  
  SELECT 10  
  USE lrtbl3  
  SELECT 11  
  USE oth_area  
    GO TOP  
  SELECT 12  
  USE prod_age  
    GO TOP  
  SELECT 13  
  USE rubtbl4  
  SELECT 14  
  USE coftbl5  
  SELECT 15
```



```
USE teatbl6
SELECT 16
USE coctbl7
SELECT 17
USE canetbl8
SELECT 18
USE kpoktbl9
SELECT 19
USE nuttbl10
SELECT 20
USE cultivat
    GO TOP
SELECT 21
USE culttbl11
SELECT 22
USE yield
    GO TOP
SELECT 23
USE y1tbl12
SELECT 24
USE y2tbl13
SELECT 25
USE Process
    GO TOP
SELECT 26
USE Work_Fac
    GO TOP
SELECT 27
USE s1tbl14
SELECT 28
USE Laborben
    GO TOP
SELECT 29
USE Coop
    GO TOP
SELECT 30
USE School
    GO TOP
SELECT 31
USE Oth_Fac
    GO TOP
SELECT 32
USE s2tbl15
SELECT 33
```

```
USE Soc_Env
GO TOP
SELECT 34
USE Gen_Inf
GO TOP
SELECT 35
USE temp
GOTO TOP
Append Blank
RETURN
```

```
PROCEDURE Reset_Working_Variable
STORE Plant_Id TO M_Plant_Id
STORE SPACE(20) TO M_Name1
STORE 0 TO M_Name_Leader_Sum
STORE 0 TO M_Sum_of_Formal
STORE 0 TO M_Sum_of_NonFormal
STORE 0 TO M_Sum_of_Exp
STORE 0 TO M_Fin_Sum_Score
STORE 0 TO M_Bonus_Sum_Score
STORE SPACE(9) TO M_Commodity
STORE 0 TO M_Com_Sumation
STORE 0 TO M_Mkt_Score_Sum
STORE 0 TO M_Activity_Plan_Score_Sum
STORE 0 TO M_Labor_Needed
STORE 0 TO M_Planted_Area
STORE 0 TO M_Comp_of_Crops_Age_Calc
STORE 0 TO M_Age_Prod_Calc
STORE 0 TO M_Cultivation_Calc
STORE 0 TO M_Yield_Calc
STORE 0 TO P_Land_Comm
STORE 0 TO P_Raw_materal_Score
STORE 0 TO P_Product_Score
STORE 0 TO P_Others_Score
STORE 0 TO P_Type_of_Trees_Sum
STORE 0 TO P_M_Fac_Score
STORE 0 TO P_Tot_Fac_Score
STORE 0 TO P_Qlty_Ctl_Score
STORE 0 TO P_QC_Tot_Score
STORE SPACE(9) TO P_Trees
STORE 0 TO SE_Score
STORE 0 TO S_Env_Score
STORE 0 TO S_Soc_Score
RETURN
```

```
PROCEDURE Name_of_Leader_Summation
```

```
  IF .NOT. (Name1 = M_Name1)
```

```
    M_Name_Leader_Sum = M_Name_Leader_Sum + 1
```

```
    STORE Name1 TO M_Name1
```

```
  ENDIF
```

```
RETURN
```

```
PROCEDURE Leaders_Score_Summation
```

```
  IF leader = "Field Manager"
```

```
    M_Score1 = LOOKUP(mfmtbl2->score1,levelk,;  
                      mfmtbl2->levelk)
```

```
  ELSE      && leader = Board of Director and Director
```

```
    M_Score1 = LOOKUP(mdtbl1->score1,levelk,mdtbl1-  
                      >levelk)
```

```
  ENDIF
```

```
DO CASE
```

```
  CASE Knowledge="Formal Education"
```

```
    M_Sum_of_Formal = M_Sum_of_Formal + m_score1
```

```
  CASE Knowledge="Non-Formal Education"
```

```
    M_Sum_of_NonFormal = M_Sum_of_NonFormal + m_score1
```

```
  CASE Knowledge="Experience"
```

```
    M_Sum_of_Exp = M_Sum_of_Exp + m_score1
```

```
  OTHERWISE
```

```
ENDCASE
```

```
RETURN
```

```
PROCEDURE Management_Calc
```

```
  DO Firm_Leader_Score_Calc
```

```
  DO Financial_Mgt_Score_Calc
```

```
  DO Marketing_Mgt_Score_Calc
```

```
  DO Plan_and_Evaluation_Score_Calc
```

```
  DO Employee_Calc
```

```
  DO MGT_SUM_CALC
```

```
RETURN
```

```
PROCEDURE Firm_Leader_score_Calc
```

```
  M_Leader_Score_Calc = M_Sum_of_Formal/M_Name_Leader_Sum *;  
                        .12 + M_Sum_of_NonFormal/M_Name_Leader_Sum *;  
                        .08 + M_Sum_of_Exp/M_Name_Leader_Sum * 0.1
```

```
RETURN
```

```

PROCEDURE Financial_Mgt_Score_Calc
  SELECT 4
  IF Plant_Id = M_Plant_Id
    DO Fin_Score_Summation
    IF .NOT. (RECNO()=RECCOUNT())
      SKIP
    ENDIF
  ELSE
    STORE .F. TO Loop_Leaders_of_Firm
  ENDIF
  SELECT 5
  STORE .T. TO Loop_Bonus
  DO WHILE Loop_Bonus=.T.
    IF Plant_Id = M_Plant_Id
      DO Bonus_Score_Summation
      IF RECNO()=RECCOUNT()
        DO FinMgt_Score_Calc
        STORE .F. TO Loop_Bonus
      ENDIF
      SKIP
    ELSE
      DO FinMgt_Score_Calc
      STORE .F. TO Loop_Bonus
    ENDIF
  ENDDO
  RETURN

```

```

PROCEDURE Fin_Score_Summation
  IF Acc_record="Yes"
    STORE 30 TO M_Acc_Score
  ELSE
    STORE 0 TO M_Acc_Score
  ENDIF
  IF B_sheet="Yes"
    STORE 30 TO M_Bs_Score
  ELSE
    STORE 0 TO M_Bs_Score
  ENDIF
  IF Audit="Yes"
    STORE 40 TO M_Audit_Score
  ELSE
    STORE 0 TO M_Audit_Score
  ENDIF

```

```

M_Fin_Sum_Score= M_Acc_Score + M_Bs_Score + M_Audit_Score
RETURN

```

```

PROCEDURE Bonus_Score_Summation

```

```

  IF Bon_Year >=1988 .AND. Bon_Year <=1990

```

```

    DO CASE

```

```

      CASE B_Amount <=1

```

```

        STORE 25 TO M_Bon_score

```

```

      CASE B_Amount >1 .AND. B_Amount <=2

```

```

        STORE 50 TO M_Bon_score

```

```

      CASE B_Amount >2 .AND. B_Amount <=3

```

```

        STORE 75 TO M_Bon_score

```

```

      CASE B_Amount >3

```

```

        STORE 100 TO M_Bon_score

```

```

    OTHERWISE

```

```

      ENDCASE

```

```

  ELSE

```

```

    STORE 0 TO M_Bon_score

```

```

  ENDIF

```

```

  M_Bonus_Sum_Score = M_Bonus_Sum_Score + M_Bon_score

```

```

RETURN

```

```

PROCEDURE FinMgt_Score_Calc

```

```

  M_Finmgt_Score_Calc = M_Fin_Sum_Score*0.12 +;

```

```

    (M_Bonus_Sum_Score/3) *0.08

```

```

RETURN

```

```

PROCEDURE Marketing_Mgt_Score_calc

```

```

  SELECT 6

```

```

  STORE .T. TO Loop_Marketing

```

```

  DO WHILE Loop_Marketing=.T.

```

```

    IF Plant_Id = M_Plant_Id

```

```

      DO Commodity_Summation

```

```

      DO Mkt_Score_Summation

```

```

      IF RECNO()=RECCOUNT()

```

```

        DO MktMgt_Score_Calc

```

```

        STORE .F. TO Loop_Marketing

```

```

      ENDIF

```

```

    SKIP

```

```

  ELSE

```

```

    DO MktMgt_Score_Calc

```

```

    STORE .F. TO Loop_Marketing

```

```

  ENDIF

```

```

ENDDO

```

```

RETURN

```

PROCEDURE Commodity_Summatation

```

IF .NOT. (Commodity = M_Commodity)
  M_Com_Sumatation = M_Com_Sumatation + 1
  STORE Commodity TO M_Commodity
ENDIF
RETURN

```

PROCEDURE Mkt_Score_Summatation

```

M_Comm_Rev = (Cost_Kg_Rp/Sale_Kg_Rp) * 100
DO CASE
  CASE M_Comm_Rev <=70
    STORE 100 TO M_Comm_Score
  CASE M_Comm_Rev >70 .AND. M_Comm_Rev <80
    STORE 75 TO M_Comm_Score
  CASE M_Comm_Rev >=70 .AND. M_Comm_Rev <90
    STORE 50 TO M_Comm_Score
  CASE M_Comm_Rev >=90
    STORE 0 TO M_Comm_Score
  OTHERWISE
  ENDCASE
M_Mkt_Score_Sum = M_Mkt_Score_Sum + M_Comm_Score
RETURN

```

PROCEDURE MktMgt_score_Calc

```

M_Mktmgt_Score_Calc = (M_Mkt_Score_Sum/M_Com_Sumatation); *
0.15
RETURN

```

PROCEDURE Plan_and_Evaluation_Score_Calc

```

SELECT 7
STORE .T. TO Loop_Planning_and_Evaluation
DO WHILE Loop_Planning_and_Evaluation=.T.
  IF Plant_Id = M_Plant_Id
    DO Activity_Planning_Score_Sum
    IF RECNO()=RECCOUNT()
    DO PlanEval_Score_Calc
      STORE .F. TO Loop_Planning_and_Evaluation
    ENDIF
    SKIP
  ELSE
    DO PlanEval_Score_Calc

```

```

        STORE .F. TO Loop_Planning_and_Evaluation
    ENDIF
ENDDO
RETURN

```

```

PROCEDURE Activity_Planning_Score_Sum
    IF Activity = "Land Used"
        DO CASE
            CASE Implement = "Semester & Yearly"
                STORE 20 TO M_Implement_Score
            CASE Implement = "Yearly & 5 Years"
                STORE 20 TO M_Implement_Score
            OTHERWISE      && Implement = Semester, Yearly, ;
                and 5 Years
                STORE 10 TO M_Implement_Score
        ENDCASE
    ELSE  && Activity = Others
        DO CASE
            CASE Implement = "Semester & Yearly"
                STORE 10 TO M_Implement_Score
            CASE Implement = "Yearly & 5 Years"
                STORE 10 TO M_Implement_Score
            OTHERWISE  && Implement = Semester, Yearly, and 5
                Years
                STORE 5 TO M_Implement_Score
        ENDCASE
    ENDIF
    M_Activity_Plan_Score_Sum = M_Activity_Plan_Score_Sum +;
        M_Implement_Score
RETURN

```

```

PROCEDURE PlanEval_Score_Calc
    M_PlanEval_Score_Calc = M_Activity_Plan_Score_Sum * 0.10
RETURN

```

```

PROCEDURE Employee_Calc
    SELECT 9
    GOTO Recno_Em
    STORE .T. TO Loop_Crops_Ha
    DO WHILE Loop_Crops_Ha = .T.
        IF Plant_Id = M_Plant_Id
            DO Labor_Needed
            IF RECNO()=RECCOUNT()

```

```

        DO Man_Power_Calc
        STORE .F. TO Loop_Crops_Ha
    ENDIF
    SKIP
ELSE
    STORE Recno() TO Recno_Em
    DO Man_Power_Calc
    STORE .F. TO Loop_Crops_Ha
ENDIF
ENDDO
RETURN

```

```

PROCEDURE Labor_Needed
    STORE Com_Age_Ha TO M_Age_Ha
    M_Ratio_Labor = LOOKUP(lrtbl3->ratio_ha,commodity,;
        lrtbl3->commodity)
    M_Labor_Needed = M_Labor_Needed + (M_Ratio_Labor *;
        M_Age_Ha)
RETURN

```

```

PROCEDURE Man_Power_Calc
    SELECT 8
    IF Plant_Id = M_Plant_Id
        STORE Employee TO M_Employee
        M_Labor_Ratio_Used = (M_Employee/M_Labor_Needed) * 100
    DO CASE
        CASE M_Labor_Ratio_Used <20
            STORE 20 TO M_Ratio_Used_Score
        CASE M_Labor_Ratio_Used >=20 .AND.;
            M_Labor_Ratio_Used <40
            STORE 40 TO M_Ratio_Used_Score
        CASE M_Labor_Ratio_Used >=40 .AND.;
            M_Labor_Ratio_Used <60
            STORE 60 TO M_Ratio_Used_Score
        CASE M_Labor_Ratio_Used >=60 .AND.;
            M_Labor_Ratio_Used <80
            STORE 80 TO M_Ratio_Used_Score
        CASE M_Labor_Ratio_Used >=80 .AND.;
            M_Labor_Ratio_Used <120
            STORE 100 TO M_Ratio_Used_Score
        CASE M_Labor_Ratio_Used >=120 .AND.;
            M_Labor_Ratio_Used <140
            STORE 80 TO M_Ratio_Used_Score
    
```



```

CASE M_Labor_Ratio_Used >=140 .AND.;
    M_Labor_Ratio_Used <160
    STORE 60 TO M_Ratio_Used_Score
CASE M_Labor_Ratio_Used >=160 .AND.
    M_Labor_Ratio_Used <180
    STORE 40 TO M_Ratio_Used_Score
CASE M_Labor_Ratio_Used >=180
    STORE 20 TO M_Ratio_Used_Score
OTHERWISE
ENDCASE
M_Man_Power_Calc = M_Ratio_Used_Score * 0.25
IF .NOT. (RECNO()=RECCOUNT())
    SKIP
ENDIF
ELSE
    STORE .F. TO Loop_Leaders_of_Firm
ENDIF
RETURN

PROCEDURE MGT_SUM_CALC
    M_Mgt_Sum_Score_Calc =
        M_Leader_Score_Calc+M_Finmgt_Score_Calc+;
        M_Mktmgt_Score_Calc+M_PlanEval_Score_Calc;
        +M_Man_Power_Calc
    M_Management_Calc = M_Mgt_Sum_Score_Calc * 0.20
RETURN

PROCEDURE Estate_Field_Calc
    DO Land_Used_Calc
    DO Crops_Calc
    DO Est_Field_Sum_Calc
RETURN

PROCEDURE Land_Used_Calc
    DO Planted_Area
    DO Used_Land_Calc
RETURN

PROCEDURE Planted_Area
    SELECT 9
    GOTO Recno_Plt
    STORE .T. TO Loop_Planted_Area

```

```

DO WHILE Loop_Planted_Area = .T.
  IF Plant_Id = M_Plant_Id
    STORE Com_Age_Ha TO M_Age_Ha
    M_Planted_Area = M_Planted_Area + M_Age_Ha
    IF RECNO()=RECCOUNT()
      STORE .F. TO Loop_Planted_Area
    ENDIF
    SKIP
  ELSE
    STORE Recno() TO Recno_Plt
    STORE .F. TO Loop_Planted_Area
  ENDIF
ENDDO
RETURN

PROCEDURE Used_Land_Calc
SELECT 11
IF Plant_Id = M_Plant_Id
  STORE Facilities TO M_Facilities
  STORE Unused_Lan TO M_Unused_Lan
  M_Used_Area = (M_Planted_Area+M_Facilities)/;
               (M_Planted_Area+M_Facilities+M_Unused_Lan) * 100
DO CASE
  CASE M_Used_Area >=80
    STORE 100 TO M_Area_Used
  CASE M_Used_Area >=65 .AND. M_Used_Area <80
    STORE 80 TO M_Area_Used
  CASE M_Used_Area >=50 .AND. M_Used_Area <65
    STORE 60 TO M_Area_Used
  CASE M_Used_Area >=25 .AND. M_Used_Area <50
    STORE 40 TO M_Area_Used
  CASE M_Used_Area <25
    STORE 20 TO M_Area_Used
  OTHERWISE
  ENDCASE
  M_Land_Used_Calc = M_Area_Used * 0.20
  IF .NOT. (RECNO()=RECCOUNT())
    SKIP
  ENDIF
ELSE
  STORE .F. TO Loop_Leaders_of_Firm
ENDIF
RETURN

```

```

PROCEDURE Crops_Calc
  SELECT 9
  GOTO Recno_CrA
  DO Plant_Area_Variable
  STORE .T. TO Loop_Crops_Age
  DO WHILE Loop_Crops_Age
    IF Plant_Id = M_Plant_Id
      IF Commodity = M_Plant
        M_Group_Age_Sum = M_Group_Age_Sum + 1
        DO Ratio_Crops_Age
        DO Data_Crops_Area_Needed
        IF RECNO()=RECCOUNT()
          DO Crops_Area_Sum
          DO Comp_of_Crops_Age_Calc
          DO Begin_Prod_Calc
          DO Cultivation_Calc
          DO Yield_Calc
          STORE .F. TO Loop_Crops_Age
        ELSE
          SKIP
        ENDIF
      ELSE
        DO Crops_Area_Sum
        DO Comp_of_Crops_Age_Calc
        DO Begin_Prod_Calc
        DO Cultivation_Calc
        DO Yield_Calc
        DO Plant_Area_Variable
      ENDIF
    ELSE
      DO Crops_Area_Sum
      DO Comp_of_Crops_Age_Calc
      DO Begin_Prod_Calc
      DO Cultivation_Calc
      DO Yield_Calc
      STORE Recno() TO Recno_CrA
      STORE .F. TO Loop_Crops_Age
    ENDIF
  ENDDO
  RETURN

```

```

PROCEDURE Plant_Area_Variable
  STORE Commodity TO M_Plant
  STORE 0 TO M_Im_Crops_Area
  STORE 0 TO M_M_Crops_Area
  STORE 0 TO M_PM_Crops_Area
  STORE 0 TO M_NP_Crops_Area
  STORE 0 TO M_Group_Age_Sum
  STORE 0 TO M_Immature
  STORE 0 TO M_Mature
  STORE 0 TO M_Post_Mature
  STORE 0 TO M_Non_Productive
RETURN

```

```

PROCEDURE Ratio_Crops_Age
  IF Commodity = "Tea" .OR. Commodity = "Coffee"
    STORE 0.10 TO M_Immature
    STORE 0.50 TO M_Mature
    STORE 0.35 TO M_Post_Mature
    STORE 0.05 TO M_Non_Productive
  ELSE    && Other Commodity
    STORE 0.30 TO M_Immature
    STORE 0.50 TO M_Mature
    STORE 0.15 TO M_Post_Mature
    STORE 0.05 TO M_Non_Productive
  ENDIF
RETURN

```

```

PROCEDURE Data_Crops_Area_Needed
  DO CASE
    CASE Comm_Age = "Immature Crops"
      STORE Com_Age_Ha TO M_Im_Crops_Area
    CASE Comm_Age = "Mature Crops"
      STORE Com_Age_Ha TO M_M_Crops_Area
    CASE Comm_Age = "Post Mature Crops"
      STORE Com_Age_Ha TO M_PM_Crops_Area
    CASE Comm_Age = "Non_Productive Crops"
      STORE Com_Age_Ha TO M_NP_Crops_Area
    OTHERWISE
  ENDCASE
RETURN

```

```

PROCEDURE Crops_Area_Sum
  M_Crops_Area = M_Im_Crops_Area+M_M_Crops_Area +;
                M_PM_Crops_Area+M_NP_Crops_Area
RETURN

```

PROCEDURE Comp_of_Crops_Age_Calc

IF M_Group_Age_Sum <2

DO CASE

CASE M_Im_Crops_Area > 0

STORE 50 TO M_Age_Crops_Score

CASE M_M_Crops_Area > 0

STORE 70 TO M_Age_Crops_Score

CASE M_PM_Crops_Area > 0

STORE 20 TO M_Age_Crops_Score

CASE M_NP_Crops_Area > 0

STORE 10 TO M_Age_Crops_Score

OTHERWISE

ENDCASE

ELSE

IF M_Im_Crops_Area = 0

STORE 0 TO M_IC_Age_Comp

ELSE

M_IC_Comp = (M_Im_Crops_Area / (M_Immature *
M_Crops_Area)) * 100

DO Case

CASE M_IC_Comp >= 80

STORE 100 TO M_IC_Age_Comp

CASE M_IC_Comp >= 65 .AND. M_IC_Comp < 80

STORE 80 TO M_IC_Age_Comp

CASE M_IC_Comp >= 50 .AND. M_IC_Comp < 65

STORE 60 TO M_IC_Age_Comp

CASE M_IC_Comp >= 25 .AND. M_IC_Comp < 50

STORE 40 TO M_IC_Age_Comp

CASE M_IC_Comp < 25

STORE 20 TO M_IC_Age_Comp

OTHERWISE

ENDCASE

ENDIF

IF M_M_Crops_Area = 0

STORE 0 TO M_MC_Age_Comp

ELSE

M_MC_Comp =

(M_M_Crops_Area / (M_Mature * M_Crops_Area)) * 100

DO Case

CASE M_MC_Comp >= 80

STORE 100 TO M_MC_Age_Comp

```

CASE M_MC_Comp >=65 .AND. M_MC_Comp <80
  STORE 80 TO M_MC_Age_Comp
CASE M_MC_Comp >=50 .AND. M_MC_Comp <65
  STORE 60 TO M_MC_Age_Comp
CASE M_MC_Comp >=25 .AND. M_MC_Comp <50
  STORE 40 TO M_MC_Age_Comp
CASE M_MC_Comp <25
  STORE 20 TO M_MC_Age_Comp
OTHERWISE
ENDCASE
ENDIF
IF M_PM_Crops_Area = 0
  STORE 100 TO M_PMC_Age_Comp
ELSE
  M_PMC_Comp = (M_PM_Crops_Area/(M_Post_Mature*
    M_Crops_Area))*100
  DO Case
    CASE M_PMC_Comp >=80
      STORE 20 TO M_PMC_Age_Comp
    CASE M_PMC_Comp >=65 .AND. M_PMC_Comp <80
      STORE 40 TO M_PMC_Age_Comp

    CASE M_PMC_Comp >=50 .AND. M_PMC_Comp <65
      STORE 60 TO M_PMC_Age_Comp
    CASE M_PMC_Comp >=25 .AND. M_PMC_Comp <50
      STORE 80 TO M_PMC_Age_Comp
    CASE M_PMC_Comp <25
      STORE 100 TO M_PMC_Age_Comp
    OTHERWISE
  ENDCASE
ENDIF
IF M_NP_Crops_Area = 0
  STORE 100 TO M_NP_Age_Comp
ELSE
  M_NP_Comp = (M_NP_Crops_Area/(M_Non_Productive;
    *M_Crops_Area))*100
  DO Case
    CASE M_NP_Comp >=80
      STORE 20 TO M_NP_Age_Comp
    CASE M_NP_Comp >=65 .AND. M_NP_Comp <80
      STORE 40 TO M_NP_Age_Comp
    CASE M_NP_Comp >=50 .AND. M_NP_Comp <65
      STORE 60 TO M_NP_Age_Comp

```

```

CASE M_NP_Comp >=25 .AND. M_NP_Comp <50
  STORE 80 TO M_NP_Age_Comp
CASE M_NP_Comp <25
  STORE 100 TO M_NP_Age_Comp
OTHERWISE
ENDCASE

ENDIF
M_Age_Crops_Score = (M_IC_Age_Comp+M_MC_Age_Comp+
  M_PMC_Age_Comp+M_NP_Age_Comp)/4

ENDIF
M_Comp_of_Crops_Age_Calc = M_Comp_of_Crops_Age_Calc+
  ((M_Age_Crops_Score*0.15) *;
  (M_Crops_Area/M_Planted_Area))

RETURN

PROCEDURE Begin_Prod_Calc
SELECT 12
STORE .T. TO Loop_Begin_Prod
DO WHILE Loop_Begin_Prod=.T.
  STORE Age_Prod TO T_Age_Prod
  IF Plant_Id = M_Plant_Id
    IF Commodity = M_Plant
      DO CASE
        CASE Commodity="Rubber" .OR. Commodity;
          ="Clove"
          M_Prod_Score= LOOKUP(rubtbl4->Score,;
            T_Age_Prod,rubtbl4->Age_Prod)
        CASE Commodity="Coffee".OR.Commodity="Oil;
          Palm"
          M_Prod_Score= LOOKUP(coftbl5->Score,;
            T_Age_Prod,coftbl5->Age_Prod)
        CASE Commodity="Pepper" .OR. Commodity;
          ="Tobacco"
          M_Prod_Score= LOOKUP(coftbl5->Score,;
            T_Age_Prod,coftbl5->Age_Prod)
        CASE Commodity="Tea" .OR. Commodity="Cocoa"
          M_Prod_Score= LOOKUP(teatbl6->Score,;
            T_Age_Prod,teatbl6->Age_Prod)
        CASE Commodity="Coconut" .OR. Commodity;
          ="Cotton"
          M_Prod_Score= LOOKUP(coctbl7->Score,;
            T_Age_Prod,coctbl7->Age_Prod)
      
```

```

CASE Commodity="Sugarcane"
    M_Prod_Score= LOOKUP(canetbl8->Score,;
        T_Age_Prod,canetbl8->Age_Prod)
CASE Commodity="Kapok" .OR. Commodity;
    ="Cashew"
    M_Prod_Score=LOOKUP(kpoktbl9->Score,;
        T_Age_Prod,kpoktbl9->Age_Prod)
CASE Commodity="Nutmeg"
    M_Prod_Score= LOOKUP(nuttbl10->Score,;
        T_Age_Prod,nuttbl10->Age_Prod)
OTHERWISE
ENDCASE
M_Age_Prod_Calc = M_Age_Prod_Calc +;
    ((M_Prod_Score*0.10) * ;
    (M_Crops_Area/M_Planted_Area))

IF Recno()=Reccount()
    STORE .F. TO Loop_Begin_Prod
    SELECT 9
ENDIF
SKIP
ELSE
    STORE .F. TO Loop_Begin_Prod
    SELECT 9
ENDIF
ELSE
    STORE .F. TO Loop_Begin_Prod
    SELECT 9
ENDIF
ENDDO
RETURN

PROCEDURE Cultivation_Calc
    SELECT 20
    STORE .T. TO Loop_Cultivation
    DO WHILE Loop_Cultivation=.T.
        STORE Activity TO T_Activity
        IF Plant_Id = M_Plant_Id
            IF Commodity = M_Plant

```



```

DO CASE
  CASE Cultivate = "Recommendation"
    M_Cultivate_Calc = M_Cultivate_Calc +;
      ((LOOKUP(Cultbl11->Score, T_Activity,;
        Cultbl11->Activity) *0.01)*;
        (M_Crops_Area/M_Planted_Area))
  CASE Cultivate="Fertilizer"
    M_Cultivate_Calc = M_Cultivate_Calc +;
      ((LOOKUP(Cultbl11->Score,T_Activity,;
        Cultbl11->Activity) *0.04)*;
        (M_Crops_Area/M_Planted_Area))
  CASE Cultivate="Pest Control".OR.Cultivate;
    ="Growth Regulator"
    M_Cultivate_Calc = M_Cultivate_Calc +;
      ((LOOKUP(Cultbl11->Score,T_Activity,;
        Cultbl11->Activity)*0.02)*;
        (M_Crops_Area/M_Planted_Area))
  CASE Cultivate="Pest Management" .OR.;
    Cultivate="Cover Crops"
    M_Cultivate_Calc = M_Cultivate_Calc +;
      ((LOOKUP(Cultbl11->Score, T_Activity,;
        Cultbl11->Activity) *0.03)*;
        (M_Crops_Area/M_Planted_Area))
  OTHERWISE
  ENDCASE
  IF Recno()=Reccount()
    STORE .F. TO Loop_Cultivation
    SELECT 9
  ELSE
    SKIP
  ENDIF
  ELSE
    STORE .F. TO Loop_Cultivation
    SELECT 9
  ENDIF
  ELSE
    STORE .F. TO Loop_Cultivation
    SELECT 9
  ENDIF
ENDDO
RETURN

```

PROCEDURE Yield_Calc

```

SELECT 22
STORE Commodity TO T_Commodity
STORE Type TO T_Type
IF Plant_Id = M_Plant_Id
  IF Commodity = M_Plant
    DO CASE
      CASE Commodity="Coffee" .OR. Commodity = "Coconut"
        T_Std_Yield = LOOKUP(y2tbl13->yield_std,;
          T_Type,y2tbl13->Type)
      CASE Commodity="Tobacco".OR.Commodity = "Sugarcane"
        T_Std_Yield = LOOKUP(y2tbl13->yield_std,;
          T_Type,y2tbl13->Type)
      OTHERWISE
        T_Std_Yield=LOOKUP(y1tbl12->yield_std,;
          T_Commodity,y1tbl12->Commodity)
    ENDCASE
    T_Kg_Yield = (Yield_Kg/T_Std_Yield) * 100
    DO CASE
      CASE T_Kg_Yield >=90
        STORE 100 TO T_Yield_Score
      CASE T_Kg_Yield >=70 .AND. T_Kg_Yield <90
        STORE 80 TO T_Yield_Score
      CASE T_Kg_Yield >=50 .AND. T_Kg_Yield <70
        STORE 60 TO T_Yield_Score
      CASE T_Kg_Yield >=30 .AND. T_Kg_Yield <50
        STORE 40 TO T_Yield_Score
      CASE T_Kg_Yield <30
        STORE 20 TO T_Yield_Score
      OTHERWISE
    ENDCASE
    M_Yield_Calc = M_Yield_Calc +((T_Yield_Score*0.40);
      *(M_Crops_Area/M_planted_Area))
    IF Recno()=Reccount()
      SELECT 9
    ELSE
      SKIP
      SELECT 9
    ENDIF
  ELSE
    STORE .F. TO Loop_Leaders_of_firm
  ENDIF

```

```

        ELSE
            STORE .F. TO Loop_Leaders_of_firm
        ENDIF
    RETURN

PROCEDURE Est_Field_Sum_Calc
    M_Estate_Field_Calc=(M_Land_Used_Calc+
        M_Comp_of_Crops_Age_Calc+
        M_Age_Prod_Calc+M_Cultivation_Calc+M_Yield_Calc)
        *0.40
    RETURN

PROCEDURE Processing_Calc
    SELECT 9
    GOTO Recno_Pro
    STORE Commodity TO P_Plant
    STORE .T. TO Loop_Land_Ha
    DO WHILE Loop_Land_Ha=.T.
        IF Plant_Id = M_Plant_Id

            IF Commodity = P_Plant
                DO Land_Comm_Sum
                IF RECNO()=RECCOUNT()
                    DO Factory_Calc
                    STORE .F. TO Loop_Land_Ha
                ELSE
                    SKIP
                ENDIF
            ELSE
                DO Factory_Calc
                STORE Commodity TO P_Plant
                STORE 0 TO P_Land_Comm
            ENDIF
        ELSE
            DO Factory_Calc
            STORE .F. TO Loop_Land_Ha
            STORE RECNO() TO Recno_Pro
        ENDIF
    ENDDO
    RETURN

```

```

PROCEDURE Land_Comm_Sum
  STORE Com_Age_Ha TO P_Comm_Ha
  P_Land_Comm = P_Land_Comm + P_Comm_Ha
RETURN

```

```

PROCEDURE Factory_Calc
  SELECT 25
  DO Factory_Variable
  STORE .T. TO Loop_Process
  DO WHILE Loop_Process=.T.
    IF Plant_Id = M_Plant_Id
      IF Commodity = P_Plant
        DO Number_of_Comm
        DO Mark_Comm_WO_Pro
        IF Commodity = P_WO_Processing
          DO WO_Processing
        ELSE
          DO WITH_Processing
        ENDIF
        IF RECNO()=RECCOUNT()
          DO Pro_Fac_Sum_Score
          DO CP_Fac_Tot_Score
          DO Crops_Processing_Sum_Calc
          STORE .F. TO Loop_Process
          SELECT 9
        ELSE
          SKIP
        ENDIF
      ELSE
        DO Pro_Fac_Sum_Score
        STORE .F. TO Loop_Process
        SELECT 9
      ENDIF
    ELSE
      DO Pro_Fac_Sum_Score
      DO CP_Fac_Tot_Score
      DO Crops_Processing_Sum_Calc
      STORE .F. TO Loop_Process
      SELECT 9
    ENDIF
  ENDDO
RETURN

```

```

PROCEDURE Factory_Variable
  STORE SPACE(13) TO P_Machine
  STORE SPACE(13) TO QC_Machine
  STORE 0 TO P_Sum_of_Machine
  STORE 0 TO P_Facilities_Score
  STORE 0 TO P_Control_Score
  STORE 0 TO P_QC_Machine_Sum
RETURN

```

```

PROCEDURE Number_of_Comm
  IF .NOT. (Commodity=P_Trees)
    P_Type_of_Trees_Sum=P_Type_of_Trees_Sum + 1
    STORE Commodity TO P_Trees
  ENDIF
RETURN

```

```

PROCEDURE Mark_Comm_WO_Pro
  DO CASE
    CASE Commodity="Clove".OR.Commodity="Kapok".OR.;
      Commodity="Kapok"
      STORE Commodity TO P_WO_Processing
    CASE Commodity="Cotton" .OR. Commodity="Coconut".OR.;
      Commodity="Cashew"
      STORE Commodity TO P_WO_Processing
    OTHERWISE
      STORE Space (9) TO P_WO_Processing
  ENDCASE
RETURN

```

```

PROCEDURE WO_Processing
  STORE 1 TO P_Sum_of_Machine
  STORE 1 TO P_QC_Machine_Sum
  STORE 100 TO P_Facilities_Score
  P_Raw_maternal_Score = P_Raw_maternal_Score+(100*.20);
    *(P_Land_Comm/M_Planted_Area)
  P_Product_Score = P_Product_Score +(100*.20)*;
    (P_Land_Comm/M_Planted_Area)
  P_Control_Score = P_Control_Score +(100*;
    (P_Land_Comm/M_Planted_Area))
  P_Others_Score = P_Others_Score +(100*.10) *;
    (P_Land_Comm/M_Planted_Area)
RETURN

```

```
PROCEDURE WITH_Processing
```

```
DO CASE
```

```
  CASE Item_Proc = "Machine Facilities"
```

```
    DO Facilities_Calc
```

```
  CASE Item_Proc = "Processing"
```

```
    DO Calc_Processing
```

```
  CASE Item_Proc = "Quality Control"
```

```
    DO Control_Calc
```

```
  CASE Item_Proc = "Others"
```

```
    DO Others_Calc
```

```
  OTHERWISE
```

```
ENDCASE
```

```
RETURN
```

```
PROCEDURE Facilities_Calc
```

```
DO Fac_Machine_Sum
```

```
DO Criteria_Facilities
```

```
RETURN
```

```
PROCEDURE Fac_Machine_Sum
```

```
IF .NOT. (Unit_Item=P_Machine)
```

```
  P_Sum_of_Machine=P_Sum_of_Machine + 1
```

```
  STORE Unit_Item TO P_Machine
```

```
ENDIF
```

```
RETURN
```

```
PROCEDURE Criteria_Facilities
```

```
DO CASE
```

```
  CASE Criteria = "Age of the Machine"
```

```
    DO Age_Score
```

```
    P_Facilities_Score = P_Facilities_Score + P_Age/4
```

```
  CASE Criteria = "Condition of the Machine"
```

```
    DO Condition_Score
```

```
    P_Facilities_Score=P_Facilities_Score+P_Condition/4
```

```
  CASE Criteria = "Licensed Capacity"
```

```
    Store Grade TO P_License
```

```
  CASE Criteria = "Potential Capacity"
```

```
    DO Machine_Capacity_Score
```

```
    P_Facilities_Score = P_Facilities_Score +;
```

```
      P_Machine_Cap/4
```

```
  CASE Criteria = "Used Capacity"
```

```
    DO Used_Capacity_Score
```

```
    P_Facilities_Score = P_Facilities_Score +;
```

```
      P_Used_Cap/4
```

```
        OTHERWISE  
    ENDCASE  
RETURN
```

PROCEDURE Age_Score

```
    DO CASE  
        CASE Grade < 5  
            STORE 100 TO P_Age  
        CASE Grade >= 5 .AND. Grade <= 10  
            STORE 90 TO P_Age  
        CASE Grade > 10 .AND. Grade <= 15  
            STORE 75 TO P_Age  
        CASE Grade > 15 .AND. Grade <= 20  
            STORE 50 TO P_Age  
  
        CASE Grade > 20  
            STORE 20 TO P_Age  
        OTHERWISE  
    ENDCASE  
RETURN
```

PROCEDURE Condition_Score

```
    DO CASE  
        CASE Grade < 2  
            STORE 100 TO P_Condition  
        CASE Grade >= 2 .AND. Grade < 3  
            STORE 75 TO P_Condition  
        CASE Grade >= 3  
            STORE 0 TO P_Condition  
        OTHERWISE  
    ENDCASE  
RETURN
```

PROCEDURE Machine_Capacity_Score

```
    STORE Grade TO P_Potential  
    P_Cap_Ratio = P_Potential/P_License * 100  
    DO CASE  
        CASE P_Cap_Ratio > 150  
            STORE 60 TO P_Machine_Cap  
        CASE P_Cap_Ratio > 130 .AND. P_Cap_Ratio <= 150  
            STORE 80 TO P_Machine_Cap  
        CASE P_Cap_Ratio > 90 .AND. P_Cap_Ratio <= 130  
            STORE 100 TO P_Machine_Cap
```

```
      CASE P_Cap_Ratio > 70 .AND. P_Cap_Ratio <= 90
        STORE 80 TO P_Machine_Cap
      CASE P_Cap_Ratio > 50 .AND. P_Cap_Ratio <= 70
        STORE 60 TO P_Machine_Cap
      CASE P_Cap_Ratio > 30 .AND. P_Cap_Ratio <= 50
        STORE 40 TO P_Machine_Cap
      CASE P_Cap_Ratio < 30
        STORE 20 TO P_Machine_Cap
      OTHERWISE
    ENDCASE
  RETURN
```

```
PROCEDURE Used_Capacity_Score
  STORE Grade TO P_Grade_Used
  P_Ratio_Used = P_Grade_Used/P_Potential * 100
  DO CASE
    CASE P_Ratio_Used >= 80
      STORE 100 TO P_Used_Cap
    CASE P_Ratio_Used >= 60 .AND. P_Ratio_Used < 80
      STORE 75 TO P_Used_Cap
    CASE P_Ratio_Used >= 40 .AND. P_Ratio_Used < 60
      STORE 50 TO P_Used_Cap
    CASE P_Ratio_Used >= 20 .AND. P_Ratio_Used < 40
      STORE 25 TO P_Used_Cap
    CASE P_Ratio_Used < 20
      STORE 0 TO P_Used_Cap
    OTHERWISE
  ENDCASE
  RETURN
```

```
PROCEDURE Calc_Processing
  DO CASE
    CASE Unit_Item = "Raw Materials"
      DO Material_Calc
    CASE Unit_Item = "Products"
      DO Products_calc
    OTHERWISE
  ENDCASE
  RETURN
```



```

PROCEDURE Material_Calc
  STORE Grade to P_Grade
  DO CASE
    CASE Criteria = "Owned Processing"
      P_Raw_material_Score=P_Raw_material_Score+;
        ((P_Grade/100*100)*.20)*;
        (P_Land_Comm/M_Planted_Area)
    CASE Criteria = "Other Processing with Contract"
      P_Raw_material_Score = P_Raw_material_Score+;
        ((P_Grade/100*90)*.20)*;
        (P_Land_Comm/M_Planted_Area)
    CASE Criteria = "Other Processing without Contract"
      P_Raw_material_Score = P_Raw_material_Score+;
        ((P_Grade/100*40)*.20)*;
        (P_Land_Comm/M_Planted_Area)
    CASE Criteria = "Sold Raw Material"
      P_Raw_material_Score = P_Raw_material_Score+;
        ((P_Grade/100*0)*.20)*;
        (P_Land_Comm/M_Planted_Area)
    OTHERWISE
  ENDCASE
  RETURN

```

```

PROCEDURE Products_calc
  DO CASE
    CASE Commodity = "Rubber"
      DO CASE
        CASE Criteria="Sheet I" .OR. Criteria="SIR 3"
          DO P_Score_1
        CASE Criteria="SIR 5" .OR. Criteria="SIR 10"
          DO P_Score_1
        CASE Criteria="SIR 20" .OR. Criteria="Crepe"
          DO P_Score_1
        OTHERWISE
          STORE 0 TO P_Comm
        ENDCASE
      CASE Commodity = "Coffee" .OR. Commodity = "Pepper"
        IF Criteria = "I" .OR. Criteria = "II"
          DO P_Score_2
        ELSE
          STORE 0 TO P_Comm
        ENDIF
    ENDIF

```

```

CASE Commodity = "Oil Palm"
  IF Criteria = "CPO"
    DO P_Score_3
  ELSE
    STORE 0 TO P_Comm
  ENDIF
CASE Commodity = "Cocoa"
  IF Criteria = "I"
    DO P_Score_3
  ELSE
    STORE 0 TO P_Comm
  ENDIF
CASE Commodity = "Sugarcane"
  IF Criteria = "Refined Sugar"
    DO P_Score_3
  ELSE
    STORE 0 TO P_Comm
  ENDIF
CASE Commodity = "Tobacco"
  IF Criteria = "Kosok I"
    DO P_Score_3
  ELSE
    STORE 0 TO P_Comm
  ENDIF
OTHERWISE
  STORE 100 TO P_Comm
ENDCASE
P_Product_Score=P_Product_Score+(P_Comm * .20);
  *(P_Land_Comm/M_Planted_Area)
RETURN

```

```

PROCEDURE P_Score_1
DO CASE
  CASE Grade >= 90
    STORE 100 TO P_Comm
  CASE Grade >= 70 .AND. Grade < 90
    STORE 75 TO P_Comm
  CASE Grade >= 50 .AND. Grade < 70
    STORE 50 TO P_Comm
  CASE Grade >= 30 .AND. Grade < 50
    STORE 25 TO P_Comm
  CASE Grade < 30
    STORE 0 TO P_Comm

```

```
        OTHERWISE  
    ENDCASE  
RETURN
```

```
PROCEDURE P_Score_2
```

```
    DO CASE  
        CASE Grade >= 65  
            STORE 100 TO P_Comm  
        CASE Grade >= 50 .AND. Grade < 65  
            STORE 75 TO P_Comm  
        CASE Grade >= 35 .AND. Grade < 50  
            STORE 50 TO P_Comm  
        CASE Grade >= 20 .AND. Grade < 35  
            STORE 25 TO P_Comm  
        CASE Grade >= 5 .AND. Grade < 20  
            STORE 10 TO P_Comm  
        CASE Grade < 5  
            STORE 0 TO P_Comm  
    OTHERWISE  
    ENDCASE  
RETURN
```

```
PROCEDURE P_Score_3
```

```
    DO CASE  
        CASE Grade >= 80  
            STORE 100 TO P_Comm  
        CASE Grade >= 60 .AND. Grade < 80  
            STORE 75 TO P_Comm  
        CASE Grade >= 40 .AND. Grade < 60  
            STORE 50 TO P_Comm  
        CASE Grade >= 20 .AND. Grade < 40  
            STORE 25 TO P_Comm  
        CASE Grade < 20  
            STORE 0 TO P_Comm  
    OTHERWISE  
    ENDCASE  
RETURN
```

```
PROCEDURE Control_Calc
```

```
    DO QC_Machine_Sum  
    DO QC_Criteria  
RETURN
```

```

PROCEDURE QC_Machine_Sum
  IF .NOT. (Unit_Item=QC_Machine)
    P_QC_Machine_Sum=P_QC_Machine_Sum + 1
    STORE Unit_Item TO QC_Machine
  ENDIF
RETURN

```

```

PROCEDURE QC_Criteria
  DO CASE
    CASE Criteria = "Age of the Machine"
      DO Co_Age_Score
        P_Control_Score = P_Control_Score +;
          (P_Age*(P_Land_Comm/M_Planted_Area))/2
      CASE Criteria = "Condition of the Machine"
        DO Condition_Score
          P_Control_Score = P_Control_Score +;
            (P_Condition*(P_Land_Comm/M_Planted_Area))/2
        OTHERWISE
      ENDCASE
  RETURN

```

```

PROCEDURE Co_Age_Score
  STORE Grade TO C_Grade
  DO CASE
    CASE C_Grade <5
      STORE 100 TO P_Age
    CASE C_Grade >=5 .AND. C_Grade <=10
      STORE 80 TO P_Age
    CASE C_Grade >10 .AND. C_Grade <=15
      STORE 60 TO P_Age
    CASE C_Grade >15 .AND. C_Grade <=20
      STORE 40 TO P_Age
    CASE C_Grade >20
      STORE 15 TO P_Age
    OTHERWISE
  ENDCASE
RETURN

```

```

PROCEDURE Others_Calc
  STORE Grade to P_Grade
  DO CASE

```

```

CASE Criteria = "Owned Processing"
    P_Others_Score = P_Others_Score +;
        (P_Grade/100*100)/2 *.10) *;
        (P_Land_Comm/M_Planted_Area)
CASE Criteria = "Other Processing"
    P_Others_Score = P_Others_Score +;
        ((P_Grade/100*80)/2 *.10) *;
        (P_Land_Comm/M_Planted_Area)
CASE Criteria = "Sell Non_Processed"
    P_Others_Score = P_Others_Score +;
        ((P_Grade/100*60)/2*.10) *;
        (P_Land_Comm/M_Planted_Area)
CASE Criteria = "With Management"
    P_Others_Score = P_Others_Score +;
        ((P_Grade/100*100)/2*.10) *;
        (P_Land_Comm/M_Planted_Area)
CASE Criteria = "Without Management"
    P_Others_Score = P_Others_Score +;
        ((P_Grade/100*20)/2*.10) *;
        (P_Land_Comm/M_Planted_Area)
OTHERWISE
ENDCASE
RETURN

PROCEDURE Pro_Fac_Sum_Score
    P_M_Fac_Score = P_M_Fac_Score + ;
        P_Facilities_Score/P_Sum_of_Machine
    IF P_QC_Machine_Sum >=1
        P_Qlty_Ctl_Score = P_Qlty_Ctl_Score +;
            P_Control_Score/P_QC_Machine_Sum
    ELSE
        P_Qlty_Ctl_Score=P_Qlty_Ctl_Score+P_Control_Score
    ENDIF
RETURN

PROCEDURE CP_Fac_Tot_Score
    P_Tot_Fac_Score = P_M_Fac_Score/P_Type_of_Trees_Sum * .40
    P_QC_Tot_Score=P_QC_Tot_Score+P_Qlty_Ctl_Score * .10
RETURN

```

PROCEDURE Crops_Processing_Sum_Calc

```

P_CP_Sum = P_Tot_Fac_Score + P_Raw_materal_Score;
          +P_Product_Score+P_QC_Tot_Score + P_Others_Score

```

```

P_CP_Calc = P_CP_Sum * .20

```

```

RETURN

```

PROCEDURE Social_Services_Calc

```

SELECT 26

```

```

STORE .T. TO Loop_Work_Fac

```

```

DO While Loop_Work_Fac = .T.

```

```

  IF Plant_Id = M_Plant_Id

```

```

    DO Work_Facilities_Score

```

```

    IF RECNO() = RECCOUNT()

```

```

        DO Labor_Benefit_Score

```

```

        DO Other_Benefit_Score

```

```

        DO Soc_and_Env_Score

```

```

        DO SE_Calc

```

```

        STORE .F. TO Loop_Work_Fac

```

```

    ELSE

```

```

        SKIP

```

```

    ENDIF

```

```

  ELSE

```

```

    DO Labor_Benefit_Score

```

```

    DO Other_Benefit_Score

```

```

    DO Soc_and_Env_Score

```

```

    DO SE_Calc

```

```

    STORE .F. TO Loop_Work_Fac

```

```

  ENDIF

```

```

ENDDO

```

```

RETURN

```

PROCEDURE Work_Facilities_Score

```

IF Work_Fac = "Un-Available"

```

```

  STORE 0 TO S_Work_Fac_Score

```

```

ELSE

```

```

  STORE Avail TO S_Avail

```

```

  S_Work_Fac_Score=LOOKUP(s1tbl14->Score,;
                        S_Avail,s1tbl14->avail)

```

```

ENDIF

```

```

SE_Score = SE_Score + S_Work_Fac_Score

```

```

RETURN

```

```

PROCEDURE Labor_Benefit_Score
  SELECT 28
  STORE .T. TO Loop_Labor_Ben
  DO WHILE Loop_Labor_Ben = .T.
    IF Plant_Id = M_Plant_Id
      DO CASE
        CASE Labor_Ben = "Insurance"
          DO Insurance_Score
        CASE Labor_Ben = "Labor Union"
          DO Lbr_Union_Score
        OTHERWISE    && for wage and Housing
          DO Wage_Score
      ENDCASE
      SE_Score = SE_Score + S_Labor_Ben_Score
      IF RECNO() = RECCOUNT()
        STORE .F. TO Loop_Labor_Ben
      ELSE
        SKIP
      ENDIF
    ELSE
      STORE .F. TO Loop_Labor_Ben
    ENDIF
  ENDDO
  RETURN

```

```

PROCEDURE Insurance_Score
  DO CASE
    CASE Given > 90
      STORE 8 TO S_Labor_Ben_Score
    CASE Given > 70 .AND. Given <= 90
      STORE 6 TO S_Labor_Ben_Score
    CASE Given > 50 .AND. Given <= 70
      STORE 4 TO S_Labor_Ben_Score
    CASE Given > 30 .AND. Given <= 50
      STORE 2 TO S_Labor_Ben_Score
    CASE Given < 30
      STORE 1 TO S_Labor_Ben_Score
    OTHERWISE
  ENDCASE
  RETURN

```

```
PROCEDURE Lbr_Union_Score
```

```
  IF Given > 50
```

```
    STORE 2 TO S_Labor_Ben_Score
```

```
  ELSE
```

```
    STORE 1 TO S_Labor_Ben_Score
```

```
  ENDIF
```

```
RETURN
```

```
PROCEDURE Wage_Score
```

```
  DO CASE
```

```
    CASE Given > 90
```

```
      STORE 4 TO S_Labor_Ben_Score
```

```
    CASE Given > 70 .AND. Given <= 90
```

```
      STORE 3 TO S_Labor_Ben_Score
```

```
    CASE Given > 50 .AND. Given <= 70
```

```
      STORE 2 TO S_Labor_Ben_Score
```

```
    CASE Given > 30 .AND. Given <= 50
```

```
      STORE 1 TO S_Labor_Ben_Score
```

```
    CASE Given < 30
```

```
      STORE 0.5 TO S_Labor_Ben_Score
```

```
  OTHERWISE
```

```
  ENDCASE
```

```
RETURN
```

```
PROCEDURE Other_Benefit_Score
```

```
  DO Cooperative_Score
```

```
  DO School_Score
```

```
  DO Other_Facilities_Score
```

```
RETURN
```

```
PROCEDURE Cooperative_Score
```

```
  SELECT 29
```

```
  IF Plant_Id = M_Plant_Id
```

```
    DO Coop_Availability_Score
```

```
    DO Members_Coop_Score
```

```
    IF .NOT. (RECNO()=RECCOUNT())
```

```
      SKIP
```

```
    ENDIF
```

```
  ENDIF
```

```
RETURN
```


PROCEDURE Coop_Availability_Score

DO CASE

CASE Cooperativ = "Consumption"

STORE 0.5 to S_Cooperative_Score

CASE Cooperativ = "Credit"

STORE 0.5 to S_Cooperative_Score

CASE Cooperativ = "Mixed"

STORE 1 to S_Cooperative_Score

OTHERWISE

STORE 0 to S_Cooperative_Score

ENDCASE

SE_Score = SE_Score + S_Cooperative_Score

RETURN

PROCEDURE Members_Coop_Score

IF Cooperativ = "Un-Available"

STORE 0 to S_Cooperative_Score

ELSE

DO CASE

CASE Members > 50

STORE 1 to S_Cooperative_Score

CASE Members <= 50

STORE 0.5 to S_Cooperative_Score

OTHERWISE

STORE 0 to S_Cooperative_Score

ENDCASE

ENDIF

SE_Score = SE_Score + S_Cooperative_Score

RETURN

PROCEDURE School_Score

SELECT 30

STORE .T. TO Loop_School

DO WHILE Loop_School = .T.

IF Plant_Id = M_Plant_Id

IF Schools = "Un-Available"

STORE 0 TO S_School_Score

ELSE

DO CASE

CASE Avail = "Permanent"

STORE 1 TO S_School_Score

CASE Avail = "Semi-permanent"

STORE 0.5 TO S_School_Score

```

        CASE Avail = "Available"
            STORE 2 TO S_School_Score
        OTHERWISE
            ENDCASE
    ENDIF
    SE_Score = SE_Score + S_School_Score
    IF RECNO() = RECCOUNT()
        STORE .F. TO Loop_School
    ELSE
        SKIP
    ENDIF
ELSE
    STORE .F. TO Loop_School
ENDIF
ENDDO
RETURN

PROCEDURE Other_Facilities_Score
    SELECT 31
    STORE .T. TO Loop_Other_Fac
    DO WHILE Loop_Other_Fac = .T.
        IF Plant_Id = M_Plant_Id
            IF Facilities = "Un-Available"
                STORE 0 TO S_OF_Score
            ELSE
                STORE Avail TO S_OF_Avail
                S_OF_Score = LOOKUP(s2tbl15->Score,;
                    S_OF_Avail,s2tbl15->avail)
            ENDIF
            SE_Score = SE_Score + S_OF_Score
            IF RECNO() = RECCOUNT()
                STORE .F. TO Loop_Other_Fac
            ELSE
                SKIP
            ENDIF
        ELSE
            STORE .F. TO Loop_Other_Fac
        ENDIF
    ENDDO
RETURN

```

PROCEDURE Soc_and_Env_Score

```

SELECT 33
STORE .T. TO Loop_Soc_and_Env
DO WHILE Loop_Soc_and_Env = .T.
  IF Plant_Id = M_Plant_Id
    IF Activity = "Not exist"
      STORE 0 TO S_Soc_Env_Score
    ELSE
      DO CASE
        CASE Type = "Extension to smallholder"
          DO Ext_Score
        CASE Type = "Assist smallholder"
          DO Assist_Score
        CASE Type = "Waste management"
          STORE 10 TO S_Waste_Score
          S_Env_Score=S_Env_Score+S_Waste_Score
        OTHERWISE
      ENDCASE
    ENDIF
    IF RECNO() = RECCOUNT()
      STORE .F. TO Loop_Soc_and_Env
    ELSE
      SKIP
    ENDIF
  ELSE
    STORE .F. TO Loop_Soc_and_Env
  ENDIF
ENDDO
RETURN

```

PROCEDURE Ext_Score

```

IF Avail = "Management"
  STORE 4 TO S_Ext_Score
ELSE
  STORE 2 TO S_Ext_Score
ENDIF
S_Soc_Score = S_Soc_Score + S_Ext_Score
RETURN

```

PROCEDURE Assist_Score

```

DO Case
  CASE Avail = "Processing"
    STORE 2 TO S_Ast_Score

```

```

CASE Avail = "Marketing"
    STORE 2 TO S_Ast_Score
CASE Avail = "Nursery provided"
    STORE 4 TO S_Ast_Score
CASE Avail = "Seed provided"
    STORE 2 TO S_Ast_Score
OTHERWISE
ENDCASE
S_Soc_Score = S_Soc_Score + S_Ast_Score
RETURN

PROCEDURE SE_Calc
    SE_Calc = (SE_Score+S_Env_Score+S_Soc_Score) * .20
RETURN

PROCEDURE Class_Calc
    Class_Score=M_Management_Calc+M_Estate_Field_Calc+;
        P_CP_Calc+SE_Calc
DO CASE
CASE Class_Score >= 80
    STORE "I" TO Performance
CASE Class_Score >= 65 .AND. Class_Score < 80
    STORE "II" TO Performance
CASE Class_Score >= 50 .AND. Class_Score < 65
    STORE "III" TO Performance
CASE Class_Score >= 25 .AND. Class_Score < 50
    STORE "IV" TO Performance
CASE Class_Score < 25
    STORE "V" TO Performance
OTHERWISE
ENDCASE
RETURN

PROCEDURE Saving_result
SELECT 34
IF Plant_Id = M_Plant_Id
    STORE Namep TO C_Namep
    STORE Company TO C_Company
    STORE Province TO C_Province
    STORE District TO C_District
    IF .NOT. (RECNO()=RECCOUNT())
        SKIP
    ENDIF

```

```

ELSE
    STORE .F. TO Loop_Leaders_of_Firm
ENDIF
SELECT 35
REPLACE Plant_Id WITH M_Plant_Id
REPLACE Namep WITH C_Namep
REPLACE Company WITH C_Company
REPLACE Province WITH C_Province
REPLACE District WITH C_District
REPLACE Leader WITH M_Leader_Score_Calc
REPLACE Fin WITH M_Finmgt_Score_Calc
REPLACE Mkt WITH M_Mktmgt_Score_Calc
REPLACE Planning WITH M_PlanEval_Score_Calc
REPLACE Empl_yee WITH M_Man_Power_Calc
REPLACE Mgt_Score WITH M_Management_Calc
REPLACE Land_Used WITH M_Land_Used_Calc
REPLACE Crops_Age WITH M_Comp_of_Crops_Age_Calc
REPLACE Crops_Prod WITH M_Age_Prod_Calc
REPLACE Cult WITH M_Cultivate_Calc
REPLACE Yield WITH M_Yield_Calc
REPLACE Est_Fld WITH M_Estate_Field_Calc
REPLACE Facilities WITH P_Tot_Fac_Score
REPLACE Material WITH P_Raw_Materal_Score
REPLACE Product WITH P_Product_Score
REPLACE Quality WITH P_QC_Tot_Score
REPLACE By_Product WITH P_Other_Score
REPLACE Processing WITH P_CP_Calc
REPLACE Labor_Fac WITH SE_Score
REPLACE Soc_Serv WITH S_Soc_Score
REPLACE Env WITH S_Env_Score
REPLACE SS_Env WITH SE_Calc
REPLACE Plt_Score WITH Class_Score
REPLACE Class WITH Performance
RETURN

```

4. OUTPUT GENERATOR PROGRAM

4.1. General Output PROGRAM

```

CLEAR ALL
CLEAR
SET TALK OFF
SET CURSOR ON
SET STATUS OFF

```

```

PUBLIC Choice
DEFINE POPUP Main_Menu from 10,30
DEFINE BAR 1 of Main_Menu prompt "Class Performance";
      MESSAGE "List of Plantations' Class Performance"
DEFINE BAR 2 of Main_Menu prompt "Plantation's Score";
      MESSAGE "Score Achievement of each Plantation"
ON SELECTION POPUP Main_Menu DO Menu_Handler

```

```

STORE 1 to Choice
@ 2,22 SAY "PLANTATION CLASSIFICATION TEMPLATE"
@ 3,22 say "===== "
@ 7,23 say "-----<<<<<  OUTPUT MENU  >>>>>-----"
ACTIVATE POPUP Main_Menu
DO CASE
    CASE Choice=1
        DO Clean_up
        DO Output
    CASE Choice=2
        DO Clean_up
        DO Output1
    OTHERWISE
ENDCASE
SET TALK ON
SET STATUS ON
QUIT
RETURN

```

```

PROCEDURE Menu_Handler
    Choice = BAR()
    DEACTIVATE POPUP
    RELEASE POPUP
RETURN

```

```

PROCEDURE Clean_up
    CLEAR ALL
    CLEAR
RETURN

```

4.2. Class Performance's Output Program

```

CLEAR ALL
SET TALK OFF
SET CONSOLE OFF

```

```

SET PRINTER ON
STORE 0 TO No
STORE 0 TO Rec
STORE 1 TO Pageno
USE Temp
GO TOP
DO Pg_Head
STORE .T. TO Loop_Plantation
DO WHILE Loop_Plantation = .T.
    No = No + 1
    Rec = Rec + 1
    DO Detail_Data
        IF REC >= 3
            DO Page_Break
        ENDIF
        IF RECNO() = RECCOUNT()
            DO Closed_line
            STORE .F. TO Loop_Plantation
            EJECT PAGE
            EXIT
        ELSE
            SKIP
        ENDIF
    ENDDO
SET PRINTER OFF
SET CONSOLE ON
RETURN

```

```

PROCEDURE Pg_Head
CLEAR

```

```

?
```

```

??"
```

"AT 2

```

??Pageno PICTURE "999" AT 72

```

```

?
```

```

?
```

```

?
```

```

?"          CLASS PERFORMANCE OF PLANTATIONS"

```

```

?"          IN INDONESIA"

```

```

?"
```

```

?"=====
```

```

?"!      !      !      ! Location      !"

```

```

?"!No.! No. ID ! - Name of Plantation !-----! Class !"

```

```

?"!      !      ! - Name of Company    !- Province  !"

```

```

?"!      !      !      !- District  !"

```

```

?"!----!-----!-----!-----!-----!"
?"!      !              !              !              !"
RETURN

```

PROCEDURE Detail_Data

```

?
?? "!" AT 2
?? No PICTURE "999"
?? "!" AT 8
?? Plant_Id PICTURE "XXXXXXX" AT 10
?? "!" AT 18
?? Namep PICTURE "XXXXXXXXXXXXXXXXXXXXXXXXXXXX" AT 20
?? "!" AT 43
?? Province PICTURE "XXXXXXXXXXXXXXXXXXXXXXXXXXXX" AT 45
?? "!" AT 67
?? Class PICTURE "XXX" AT 70
?? "!" AT 75
?
?? "!" AT 2
?? "!" AT 8
?? "!" AT 18
?? Company PICTURE "XXXXXXXXXXXXXXXXXXXXXXXXXXXX" AT 20
?? "!" AT 43
?? District PICTURE "XXXXXXXXXXXXXXXXXXXXXXXXXXXX" AT 45
?? "!" AT 67
?? "!" AT 75
?
RETURN

```

PROCEDURE Page_Break

```

DO Closed_line
EJECT PAGE
DO Pg_Head
STORE 0 TO Rec
RETURN

```

PROCEDURE Closed_line

```

Pageno = Pageno + 1
?" -----"
RETURN

```


4.3. Plantation's Score Output Program

```

CLEAR ALL
CLEAR
SET CURSOR OFF
@ 10,35 SAY " Wait Please"
SET CONSOLE OFF
SET PRINTER ON
STORE 0 TO No
STORE 1 TO Pageno
USE Temp
GO TOP
DO Pg_Head
STORE .T. TO Loop_Plantation
DO WHILE Loop_Plantation = .T.
    No = No + 1
    DO Detail_Data
    IF RECNO() = RECCOUNT()
        STORE .F. TO Loop_Plantation
        EJECT PAGE
    ELSE
        SKIP
        DO Page_Break
    ENDIF
ENDDO
SET PRINTER OFF
SET CONSOLE ON
CLEAR
CLEAR ALL
DO CLASS
RETURN

PROCEDURE Pg_Head
CLEAR
??"
?? Pageno PICTURE "999" AT 72
?
?
?"          CLASS PERFORMANCE OF PLANTATIONS"
?"          IN INDONESIA"
?"          =====
?"
RETURN

```

"AT 2

"

PROCEDURE Detail_Data

?
 ?? "PLANTATION ID NUMBER :" AT 24
 ?? Plant_Id PICTURE "XXXXXXX" AT 48
 ?
 ?? "NAME OF PLANTATION :" AT 24
 ?? Namep PICTURE "XXXXXXXXXXXXXXXXXXXXXXXXXXXX" AT 48
 ?
 ?? "NAME OF COMPANY :" AT 24
 ?? Company PICTURE "XXXXXXXXXXXXXXXXXXXXXXXXXXXX" AT 48
 ?
 ?? "L O C A T I O N :" AT 24
 ?
 ?? "- PROVINCE :" AT 30
 ?? Province PICTURE "XXXXXXXXXXXXXXXXXXXX" AT 48
 ?
 ?? "- DISTRICT :" AT 30
 ?? District PICTURE "XXXXXXXXXXXXXXXXXXXX" AT 48
 ?
 ?
 ?
 ?? "PLANTATION'S SCORE ACHIEVEMENT" AT 24
 ?
 ?? "-----" AT 24
 ?
 ?
 ?? "MANAGEMENT" AT 18
 ?
 ?? "Firm Leader Score :" AT 22
 ?? Leader AT 53
 ?
 ?? "Financial Mgt Score :" AT 22
 ?? Fin AT 53
 ?
 ?? "Marketing Mgt Score :" AT 22
 ?? Mkt AT 53
 ?
 ?? "Planning & Evaluation Score :" AT 22
 ?? Planning AT 53
 ?
 ?? "Man Power Score :" AT 22
 ?? Employee AT 53
 ?
 ?? "-----" AT 53

?
 ?? "Management Score (total * 20 %) :" AT 22
 ?? MGT_Score AT 56
 ?
 ?
 ?? "ESTATE FIELD" AT 18
 ?
 ?? "Land Used Score" AT 22
 ?? Land_Used AT 53
 ?
 ?? "Crops' Age Composition Score:" AT 22
 ?? Crops_Age AT 53
 ?
 ?? "Crops-Age Begin Productive" AT 22
 ?? Crops_Prod AT 53
 ?
 ?? "Crops Cultivation Score" AT 22
 ?? Cult AT 53
 ?
 ?? "Yield Score" AT 22
 ?? Yield AT 53
 ?
 ?? "-----" AT 53
 ?
 ?? "Estate Fld Score (total * 40 %) :" AT 22
 ?? Est_Fld AT 56
 ?
 ?
 ?? "CROP PROCESSING" AT 18
 ?
 ?? "Processing Facilities Score :" AT 22
 ?? Facilities AT 53
 ?
 ?? "Raw Material Score" AT 22
 ?? Material AT 53
 ?
 ?? "Product's Quality Score" AT 22
 ?? Product AT 53
 ?
 ?? "Quality Control Fac. Score" AT 22
 ?? Quality AT 53
 ?
 ?? "By Product & Waste Mgt Score:" AT 22
 ?? By_Product AT 53

```

?
?? "-----" AT 53
?
?? "Processing Score (total * 20 %) :" AT 22
?? Processing AT 56
?
?
?? "SOCIAL SERVICES & ENVIRONMENTAL CONCERN" AT 18
?
?? "Labor Facilities Score      :" AT 22
?? Labor_Fac AT 53
?
?? "Social Services Score      :" AT 22
?? Soc_Serv AT 53
?
?? "Environmental Concern Score :" AT 22
?? Env AT 53
?
?? "-----" AT 53
?
?? "Social Serv Score (total*20 %)  :" AT 22
?? SS_Env AT 56
?
?
?
?? "PLANTATION'S SCORE              :" AT 18
?? Plt_Score AT 56
?
?
?? "CLASS PERFORMANCE OF PLANTATION  :" AT 18
?? Class AT 58
?
RETURN

PROCEDURE Page_Break
  Pageno = Pageno + 1
  EJECT PAGE
  DO Pg_Head
RETURN

```

APPENDIX VI
(Correlation Coefficient Among Variables)

[illegible]