Department of Agrarian Reform - **Land Bank of the Philippines**
Elliptical Rd., Diliman, Quezon City   Sen. Gil Puyat Ave., Makati City

JOINT DAR-LBP
MEMORANDUM CIRCULAR NO. 07
SERIES OF 1999

TO   :   **ALL CONCERNED OFFICIALS AND PERSONNEL**
              OF THE DAR AND LBP

SUBJECT :   **REVISED VALUATION GUIDELINES FOR**
               RUBBER PLANTATIONS

I. PREFATORY STATEMENT

The rubber plantation income models presented under the old rubber Land Valuation Guideline (LVG No. 6, Series of 1990) recognized the income of rubber plantations based on processed crumb rubber. However, recent consultations with rubber authorities (industry, research, etc.) disclosed that the standard income approach to valuation should measure the net income or productivity of the land based on the farm produce (in their raw forms) and not on the entire agri-business income enhanced by the added value of farm products due to processing. Hence, it is more appropriate to determine the Capitalized Net Income (CNI) of rubber plantations based on the actual yield and farm gate prices of raw products (field latex and cuplump) and the corresponding cost of production.

There is also a growing market for old rubber trees which are estimated to generate net incomes ranging between P20,000 and P30,000 per hectare or an average of about P100 per tree, depending on the remaining stand of old trees at the end of its economic life. This market condition for old rubber trees was not present at the time LVG No. 6, Series of 1990, was being prepared. (The terminal or salvage value of old rubber trees was at that time pegged at only P6,000 per hectare, representing the amount then being paid by big landholders to contractors for clearing and uprooting old trees.

LVG No. 6, Series of 1990, was therefore revised to address the foregoing considerations and in accordance with DAR Administrative Order (AO) No. 05, Series of 1998.

II. COVERAGE

These guidelines shall cover all rubber plantations whose valuations are in process and not yet covered by a Memorandum of Valuation (MOV). Specific procedures and schedules are herein prescribed for uniform application in the computation of Land Value (LV).

Separate Guidelines shall be issued in another Memorandum Circular for rubber plantation claims covered by MOV and under review by DAR Adjudication Board (DARAB) due to the landowner's rejection of the approved valuation.

III. VALUATION PROCEDURES

A. STATEMENT OF NET INCOME SUBMITTED BY LANDOWNER

1. As provided under Item II.B.2. of DAR AO No. 05, Series of 1998, the production and cost data submitted by the landowner (LO) shall have to be validated and verified by DAR and LBP personnel.

   If the time gap between 1) the date of the production/income statement submitted by the LO to the DAR in the claim folder and 2) date of claim folder receipt by LBP for processing is more than six (6) months, the LVLCO shall require the LO to submit an updated income statement. The updated statement shall further be evaluated in relation to industry data.

2. The LO's declared tree inventories shall have to be compared against the result of random sampling (see Annex A for the sampling procedures) conducted at the time of Field Investigation (FI) and the standard tree density per hectare presented in Annex B, and the lowest figures shall be adopted.

3. The income and production data submitted by the LO which are verified and validated by LBP/DAR shall be considered in the computation of CNI.

   a. If the LO's income/production data (AGP, SP, CO and inventory of standing trees) is verified and validated against industry figures and other records, to be attainable and reasonable based on the actual condition of the standing trees at the time of FI, the CNI shall be computed as follows:

   $$CNI = \frac{(AGP \times SP) - CO}{0.12} = \frac{NET\ INCOME}{0.12}$$

   b. There are cases where some of the production/income data provided by the LO (e.g., AGP, SP, CO, inventory of standing trees) could not be easily verified/validated, such that CNI cannot be computed by directly applying the formula provided in Item III.A.3.a above. In said cases, the valuation procedures and data matrices prescribed under Item III.B. shall be used in computing for the CNI.

B. LO's STATEMENT OF NET INCOME NOT AVAILABLE OR PRODUCTION DATA SUBMITTED COULD NOT BE VERIFIED/ VALIDATED

B.1.VALUATION OF YOUNG, "NON-TAPPABLE" TREES

1. Determine the number of blocks of trees having similar age, the area of each block and the density of trees in each block. The planting density appearing in the LO's inventory records, if available, may be validated and verified by establishing the actual plant spacing (row and tree distances, in meters). Based on the actual row and tree distances, the planting density per hectare for rectangular and square planting patterns is estimated by the following formula:

$$Plant\ density = \frac{10,000\ sq.\ m.\ per\ ha}{(Row\ Distance \times Tree\ Distance)}$$

The row distance refers to the spacing between plant rows while the tree distance refers to the spacing between plants in a row.

2. Depending on the size of the farm [1], the age of trees and the planting density adopted, the cumulative development cost per hectare (CDC) of a rubber plantation is shown in Annex C.

3. For the purpose of computing CDC as of the date of LBP Claim Folder (CF) receipt for processing, a schedule of average yearly development cost per hectare (YDC) is provided in Annex C-1. The process of computing CDC up to the nearest date of LBP CF receipt is shown in Annex C-2.

4. After establishing the CDC of blocks planted to rubber trees which are not yet "tappable", the value of the land shall be computed in accordance with the formula prescribed under Item II.A.4 of DAR AO No. 05, Series of 1998, as shown below:

$$LV = (MV \times 2) + CDC$$

Where:

MV = applicable Unit Market Value (UMV) classification of idle land
CDC = CDC value established in Item III.B.1.3 above.

B.2. CNI COMPUTATION FOR PRODUCTIVE, "TAPPABLE" TREES

1. Determine the number of blocks of trees having similar age, the area of each block and the density of trees in each block. The LO's declared tree inventories, if available, shall be compared with the result of random sampling conducted at the time of FI (see Annex A for the sampling procedures) and the standard tree density per hectare presented in Annex B, after which the lower figure shall be adopted.

2. Depending on the size of the farm, the planting density adopted, tapping practice and the form of products harvested (latex or cuplumps), the average rubber yield per tree in Kilogram Dry Rubber Content (KDRC) and the average net income rate (NIR) is shown in Annex B (given different tapping practices, plantation size and planting density).

3. Using the AGP and NIR data provided in Annex B, compute the CNI for each age-block using the following formula:

$$CNI = \frac{(AGP/Tree \times No.\ of\ Trees \times SP) \times NIR}{0.12}$$

4. The AGP per tree shall be based on the age of trees at the time of FI.

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[1] Rubber plantations with an area of 40 hectares and below are considered as small farms while those plantations with an area above 40 hectares are considered as large farms.

If the time gap between the date of FI and the date of CF receipt is six (6) months or less, adopt the applicable AGP per tree based on the age of trees established at the time of FI.

If the time gap between the date of FI and the date of CF receipt is more than six (6) months up to 12 months, add one (1) year to the age of trees established at the time of FI. Determine the applicable AGP per tree based on the adjusted age of trees.

5. The available industry data on farm gate prices of fresh field latex and cuplumps are usually expressed in terms of their respective fresh or wet weight. Since the recommended AGP per tree for rubber (in the absence of LO or industry data) as shown in Annex B, is expressed in Kilogram Dry Rubber Content (KDRC), there is a need to convert the SP expressed in its wet weight into its dry weight equivalent. The KDRC of latex and cuplump varies depending on the quality of extracting and handling latex in the aging of cuplumps, respectively. In the absence of any other information, the following are suggested conversion factors:

1 Kg. Fresh Field Latex	=	0.31 KDRC
1 Kg. Cuplump	=	0.55 KDRC

    (The above conversion factors were the average recovery rates achieved by various rubber processors.)

6. The farmgate price of cuplumps is available at the Regional Offices of the Bureau of Agricultural Statistics (BAS). Since fresh field latex is not commonly traded at local buying centers but is being processed directly by a few rubber processors specializing in latex processing, the selling price of latex is not included among the monitoring activities of BAS. The DAR Regional Offices and LBP's Land Valuation and Landowners Compensation Offices (LVLCOs) shall be tasked to monitor the average monthly selling prices of the aforesaid farm products. SP data for fresh field latex could be sourced from rubber processors engaged in the processing of latex.

7. Since the quality of tapping greatly affects the productive life span of rubber trees and in order to discourage those landowners who practice indiscriminate tapping (e.g., high frequency tapping, slaughter tapping), the standard AGP data provided in Annex B shall be subject to a downward adjustment depending on the actual condition of the tapping panel [2] at the time of FI. The reduction rate, depending on the actual condition of the trees, shall be set at a maximum of 10%. The parameters which will determine the level of adjustment are shown in Annex D. (These parameters were based on the suggestions of rubber plantation owners, rubber tappers and those who are considered authorities in rubber.) An Illustrative Example showing the process of adjustment in the AGP is shown in Annex D-1.

B.3. CNI COMPUTATION FOR OLD TREES READY FOR CUTTING

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[2] A tapping panel is an imaginary vertical rectangular panel in the main trunk of the tree with a standard height of 1.5 meters measured from the base of the rubber tree and width equivalent to one-half of the trunk's circumference.

1. For the purpose of these guidelines, the standard age when rubber trees are considered ready for cutting are as follows:

	Age Ready for Cutting
Early Tapping (5-6 years old)	25
Normal Tapping (7 years old)	30

2. The value of lands planted to rubber trees which are ready for cutting shall be computed in accordance with the formula prescribed under Item II.A.6. of DAR AO No. 05, Series of 1998, as shown below:

$$LV = (MV \times 2) + \text{Salvage Value of Trees}$$

Where:

MV = applicable UMV classification of idle land
Salvage Value of Trees = Actual Number of Standing
Trees x P100 per tree

In no case, however, shall the Unit Land Value (ULV) per hectare of lands planted to rubber trees which are more than 25 years old (for early tapping) or 30 years old (for normal tapping) exceed the ULV of productive lands within the same estate under consideration.

3. The prevailing market price of the old rubber trees shall be monitored by DAR and LBP at least every semester or as the market conditions for rubber trees warrant the same. Significant adjustments (upward or downward) in the average price of rubber trees shall be reported to DAR and LBP for study.

C. COMPUTATION OF MARKET VALUE PER TAX DECLARATION

1. In the absence of clear parameters on how the Assessor's Office determines the productivity classification of rubber land and trees and considering the unique characteristics of rubber in terms of land value, the following schedule of productivity classification shall be adopted for purposes of computing the Market Value (MV) per Tax Declaration (TD).

	First Class	Second Class	Third Class
Early Tapping			
Tapping begins:	5 to 12	13 to 19	20 to 25
@ Age 5	Yrs. Old	Yrs. Old	Yrs. Old
@ Age 6	6 to 12	13 to 19	20 to 25
	Yrs. Old	Yrs. Old	Yrs. Old
Normal Tapping	7 to 14	15 to 21	22 to 30
	Yrs. Old	Yrs. Old	Yrs. Old

2. There shall be three (3) productivity classifications for rubber land and trees. The said classifications shall apply only to productive rubber land and trees.

Lands planted to young (non-tappable) and old (ready for cutting) rubber trees shall be classified as idle land in accordance with Item Nos. II.A.4 and II.A.6, respectively, of DAR AO No. 05, Series of 1998.

D. IDLE PARCELS AND AREA/S TRAVERSED BY PLANTATION ROADS

Contiguous area/s exceeding one hectare, without trees, shall be valued separately as idle land. However, idle parcels with areas of less than one hectare (brought about by tree mortality), at various locations in the block shall be considered as part of the planted areas. Plantation roads traversing the estate and which are merely cleared and levelled without any filling materials shall also be considered as part of the planted areas. Plantation roads which are made of concrete, asphalt and macadam shall be valued separately using the standard appraisal approach for improvements.

E. VALUATION OF PLANTATION AREAS WHERE OLD AND PRODUCTIVE TREES WERE ALREADY CUT AND SOLD BY THE LANDOWNER

In cases where the landowner had already cut and sold the old and/or productive trees at the time of processing/valuation, the affected area of the property shall be considered as idle land. The value of the affected area shall be computed in accordance with the formula prescribed under Item II.A.3 of DAR AO No. 05, Series of 1998, as shown below:

$$LV = MV \times 2$$

F. ILLUSTRATIVE EXAMPLE

Annex E illustrates the application of the valuation concepts/principles presented in these Guidelines.

IV. REPEALING CLAUSE AND EFFECTIVITY

All orders, circulars, rules and regulations inconsistent herewith are hereby revoked, amended, or modified as the case may be.

This Joint Memorandum Circular shall take effect ten (10) days after its publication in two national newspapers of general circulation pursuant to Sec. 49 of RA 6657.

Metro Manila, April 15 1999.

HORACIO R. MORALES, JR.
Secretary
Department of Agrarian Reform

FLORIDO P. CASUELA
President and CEO
Land Bank of the Philippines

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SAMPLING PROCEDURES IN THE DETERMINATION OF RUBBER TREE DENSITY

The following sampling procedures shall be adopted in the determination of tree density of rubber plantations:

Step 1 — Group and Count the number of trees by age.

As an initial step, determine the number of blocks of trees having similar age, the area of each block and the density of trees in each block.

The date the trees were planted should be available from records of the landowner. The age of tree, however, should be checked/validated from actual farmworkers and on the actual girth or diameter of the tapping panel of the rubber trees.

The area of a block may be checked with records of the landowner and verified by the use of a compass and pacing or tape, transit or stadia, or any available measuring devices.

Similarly, the density of trees should be counter-checked from landowners' records and verified by physical count for small areas. For areas exceeding five (5) hectares, representative sample parcels may be taken to estimate density. The minimum number of sample parcels, having an area of 0.5 ha. each (e.g. 100m. x 50m ; 125m. x 40m., etc.), shall be in accordance with the following schedule:

Table 1. Minimum Number of Samples for various Age Blocks of Plantation

Area of Age Block, ha.			Minimum Number of Sample Parcels
up	to	5	Actual Count or 2 Samples
6	—	20	2
21	—	80	4
81	—	160	5
161	—	320	6
321	—	above	7

The estimated number of trees is determined by the following formula:

$$\text{Estimated No. of Trees per Block} = \text{Average No. of trees per sample} \times \text{Area of Block (in Ha.)} \times 2$$

where:

$$\text{Average Number of Trees per Sample} = \frac{\text{Total Number of Trees of all Sample Parcels}}{\text{No. of Samples}}$$

Block	Age, Yr.	Physical Area, Ha.	No. of Sample Parcels	Number of Trees
I	10	40.0000	1	150
			2	140
			3	141
			4	152
			5	130
				713
II	3	20.0000	1	210
			2	208
			3	207
				625
III	25	20.0000	1	150
			2	160
			3	140
				450

Block I : Average No. of Trees $= \dfrac{713}{5} = 142.60$

Estimated No. of Trees $= 142.60 \times 40 \times 2$
$= 11{,}048$

Block II : Average No. of Trees $= \dfrac{625}{3} = 208.33$

Estimated No. of Trees $= 208.33 \times 20 \times 2$
$= 8{,}333$

Block III :   Average No. of Trees $= \dfrac{450}{3} = 150.00$

Estimated No. of Trees $= 150.00 \times 20 \times 2$
$= 6{,}000$

Step 2 — In cases where the percentage discrepancy between the LO's inventory and the estimated number of trees as determined in Step 1 exceeds 15% (as shown in the following illustration), it is suggested that the sampling of trees be reviewed for that particular block/s.

Block	Estimated No. of Tree (Step 1)	LO's Inventory (LO's Record)	Percent Discrepancy	Tree Count Adopted
I	11,408	11,600	1.68%	11,408
II	8,333	8,100	2.88%	8,100
III	6,000	7,000	16.67%	Recount

SMALL PLANTATION
SCHEDULE OF AVERAGE RUBBER YIELD & NET INCOME RATE
EARLY TAPPING @ 5th YEAR

YIELD IN KG. DRY RUBBER CONTENT (DRC) — SMALL PLANTATION (40 Hectares and Below) — PLANTING DENSITY

Age of Tree	Planting Density 416			Planting Density 444			Planting Density 500			Planting Density 555			Planting Density 600			Net Income Rate (NIR)	
	Std. Tree Density per Ha	Ave. Yield per Ha	Ave. Yield per Tree	Std. Tree Density per Ha	Ave. Yield per Ha	Ave. Yield per Tree	Std. Tree Density per Ha	Ave. Yield per Ha	Ave. Yield per Tree	Std. Tree Density per Ha	Ave. Yield per Ha	Ave. Yield per Tree	Std. Tree Density per Ha	Ave. Yield per Ha	Ave. Yield per Tree	Cup Lumps	Later
5	395	1,420	3.595	422	1,474	3.494	475	1,529	3.219	527	1,584	3.005	570	1,475	2.587	50%	40%
6	395	1,481	3.749	422	1,538	3.644	475	1,595	3.357	527	1,652	3.134	570	1,538	2.698	50%	40%
7	395	1,514	3.833	422	1,572	3.725	475	1,630	3.432	527	1,689	3.204	570	1,572	2.758	50%	40%
8	395	1,558	3.944	422	1,618	3.834	475	1,678	3.532	527	1,738	3.298	570	1,618	2.839	50%	40%
9	395	1,597	4.042	422	1,658	3.929	475	1,720	3.620	527	1,781	3.379	570	1,658	2.909	50%	40%
10	358	1,619	4.522	382	1,681	4.401	430	1,743	4.054	477	1,805	3.785	516	1,681	3.258	50%	40%
11	358	1,646	4.599	382	1,710	4.476	430	1,773	4.123	477	1,836	3.850	516	1,710	3.314	50%	40%
12	358	1,635	4.568	382	1,698	4.446	430	1,761	4.096	477	1,824	3.824	516	1,698	3.291	50%	40%
13	358	1,619	4.522	382	1,681	4.401	430	1,743	4.054	477	1,805	3.785	516	1,681	3.258	50%	40%
14	358	1,591	4.445	382	1,653	4.326	430	1,714	3.985	477	1,775	3.721	516	1,652	3.202	50%	40%
15	358	1,547	4.322	382	1,606	4.204	430	1,666	3.875	477	1,726	3.619	516	1,607	3.114	50%	40%
16	312	1,481	4.746	333	1,538	4.618	375	1,595	4.252	416	1,652	3.970	450	1,538	3.417	50%	40%
17	312	1,414	4.533	333	1,469	4.411	375	1,523	4.062	416	1,577	3.792	450	1,469	3.264	50%	40%
18	312	1,326	4.250	333	1,377	4.135	375	1,428	3.808	416	1,479	3.555	450	1,377	3.060	50%	40%
19	312	1,216	3.896	333	1,262	3.791	375	1,309	3.491	416	1,356	3.259	450	1,262	2.805	50%	40%
20	312	1,105	3.542	333	1,148	3.447	375	1,190	3.257	416	1,232	3.257	450	1,148	2.805	50%	40%
21	312	973	3.118	333	1,010	3.033	375	1,047	2.791	416	1,085	2.608	450	1,010	2.244	50%	40%
22	250	829	3.315	266	861	3.237	300	893	2.975	333	924	2.776	360	861	2.391	50%	40%
23	250	699	2.795	266	723	2.718	300	750	2.499	333	777	2.332	360	723	2.008	50%	40%
24	250	553	2.210	266	574	2.157	300	595	1.983	333	616	1.851	360	574	1.594	50%	40%
25	250	442	1.768	266	459	1.726	300	476	1.587	333	493	1.480	360	459	1.275	50%	40%

SMALL PLANTATION
SCHEDULE OF AVERAGE RUBBER YIELD & NET INCOME RATE
EARLY TAPPING @ 6th YEAR

YIELD IN ITS DRY RUBBER CONTENT (DRC)

SMALL PLANTATION (40 Hectares and Below)

Age of Tree	416 Std. Tree Density	416 Ave. Yield per Ha.	416 Ave. Yield per Tree	444 Std. Tree Density	444 Ave. Yield per Ha.	444 Ave. Yield per Tree	500 Std. Tree Density	500 Ave. Yield per Ha.	500 Ave. Yield per Tree	555 Std. Tree Density	555 Ave. Yield per Ha.	555 Ave. Yield per Tree	600 Std. Tree Density	600 Ave. Yield per Ha.	600 Ave. Yield per Tree	Net Income Rate (NIR) Cup Lumps	Net Income Rate (NIR) Later
6	395	1,481	3.749	422	1,538	3.644	475	1,595	3.357	527	1,652	3.134	570	1,538	2.698	50%	40%
7	395	1,514	3.833	422	1,572	3.725	475	1,630	3.432	527	1,689	3.204	570	1,572	2.758	50%	40%
8	395	1,558	3.944	422	1,618	3.834	475	1,678	3.532	527	1,738	3.298	570	1,618	2.839	50%	40%
9	395	1,597	4.042	422	1,658	3.929	475	1,719	3.619	527	1,781	3.379	570	1,658	2.909	50%	40%
10	395	1,619	4.098	422	1,681	3.984	475	1,743	3.670	527	1,806	3.426	570	1,681	2.949	50%	40%
11	358	1,646	4.598	382	1,710	4.476	430	1,773	4.123	477	1,836	3.850	516	1,710	3.314	50%	40%
12	358	1,635	4.568	382	1,698	4.446	430	1,761	4.096	477	1,824	3.824	516	1,698	3.291	50%	40%
13	358	1,619	4.522	382	1,681	4.401	430	1,743	4.054	477	1,805	3.785	516	1,681	3.258	50%	40%
14	358	1,591	4.445	382	1,653	4.326	430	1,714	3.985	477	1,775	3.721	516	1,652	3.202	50%	40%
15	358	1,547	4.321	382	1,606	4.205	430	1,666	3.874	477	1,725	3.617	516	1,606	3.113	50%	40%
16	312	1,481	4.746	333	1,539	4.618	375	1,595	4.252	416	1,652	3.970	450	1,538	3.417	50%	40%
17	312	1,414	4.533	333	1,469	4.411	375	1,523	4.062	416	1,577	3.792	450	1,469	3.264	50%	40%
18	312	1,326	4.250	333	1,377	4.135	375	1,428	3.808	416	1,479	3.555	450	1,377	3.060	50%	40%
19	312	1,216	3.896	333	1,262	3.791	375	1,309	3.491	416	1,356	3.259	450	1,262	2.805	50%	40%
20	312	1,105	3.542	333	1,148	3.446	375	1,190	3.173	416	1,233	2.963	450	1,148	2.550	50%	40%
21	250	973	3.890	266	1,010	3.796	300	1,048	3.491	333	1,085	3.257	360	1,010	2.805	50%	40%
22	250	829	3.315	266	861	3.235	300	893	2.975	333	924	2.776	360	861	2.391	50%	40%
23	250	696	2.785	266	723	2.718	300	750	2.499	333	777	2.332	360	723	2.008	50%	40%
24	250	553	2.210	266	574	2.157	300	595	1.983	333	616	1.851	360	574	1.594	50%	40%
25	250	442	1.758	266	459	1.726	300	476	1.587	333	493	1.480	360	459	1.275	50%	40%

SMALL PLANTATION
SCHEDULE OF AVERAGE RUBBER YIELD & NET INCOME RATE
NORMAL TAPPING (7th Year)

YIELD IN SMALL PLANTATION PER RUBBER CONTENT (IPRC)
SMALL PLANTATION (40 Hectares and Below)

Age of Tree	416 Std. Tree Density per Ha.	416 Ave. Yield per Ha.	416 Ave. Yield per Tree	444 Std. Tree Density	444 Ave. Yield per Ha.	444 Ave. Yield per Tree	500 Std. Tree Density	500 Ave. Yield per Ha.	500 Ave. Yield per Tree	555 Std. Tree Density	555 Ave. Yield per Ha.	555 Ave. Yield per Tree	600 Std. Tree Density	600 Ave. Yield per Ha.	600 Ave. Yield per Tree	Net Income Rate (NIR) Cup Lumps	Net Income Rate (NIR) Later
7	395	1,514	3.833	426	1,572	3.690	475	1,630	3.432	527	1,689	3.204	570	1,572	2.758	50%	40%
8	395	1,547	3.916	426	1,606	3.771	475	1,666	3.507	527	1,725	3.274	570	1,606	2.818	50%	40%
9	395	1,574	3.986	426	1,635	3.838	475	1,696	3.570	527	1,756	3.333	570	1,635	2.869	50%	40%
10	395	1,602	4.056	426	1,664	3.906	475	1,726	3.633	527	1,787	3.391	570	1,664	2.919	50%	40%
11	395	1,619	4.098	426	1,681	3.946	475	1,743	3.670	527	1,806	3.426	570	1,681	2.949	50%	40%
12	395	1,630	4.126	426	1,692	3.973	475	1,755	3.695	527	1,818	3.450	570	1,692	2.969	50%	40%
13	358	1,641	4.584	400	1,704	4.260	430	1,767	4.110	477	1,830	3.837	516	1,704	3.302	50%	40%
14	358	1,646	4.599	400	1,710	4.274	430	1,773	4.123	477	1,836	3.850	516	1,710	3.314	50%	40%
15	358	1,630	4.553	400	1,692	4.231	430	1,755	4.082	477	1,818	3.811	516	1,692	3.280	50%	40%
16	358	1,619	4.522	400	1,681	4.203	430	1,743	4.054	477	1,805	3.785	516	1,681	3.258	50%	40%
17	358	1,602	4.476	400	1,664	4.160	430	1,725	4.013	477	1,787	3.747	516	1,664	3.225	50%	40%
18	358	1,569	4.383	400	1,630	4.074	430	1,690	3.930	477	1,750	3.669	516	1,630	3.158	50%	40%
19	312	1,525	4.888	364	1,585	4.355	375	1,642	4.379	416	1,701	4.089	450	1,584	3.519	50%	40%
20	312	1,470	4.710	364	1,526	4.193	375	1,583	4.221	416	1,639	3.940	450	1,526	3.391	50%	40%
21	312	1,409	4.516	364	1,463	4.019	375	1,517	4.046	416	1,571	3.777	450	1,463	3.251	50%	40%
22	312	1,326	4.250	364	1,377	3.783	375	1,428	3.808	416	1,479	3.555	450	1,377	3.060	50%	40%
23	312	1,243	3.984	364	1,291	3.547	375	1,339	3.570	416	1,387	3.333	450	1,291	2.869	50%	40%
24	312	1,160	3.719	364	1,205	3.310	375	1,250	3.332	416	1,294	3.111	450	1,205	2.678	50%	40%
25	250	1,089	4.354	311	1,130	3.634	300	1,172	3.907	333	1,214	3.646	360	1,130	3.140	50%	40%
26	250	995	3.978	311	1,033	3.321	300	1,071	3.570	333	1,109	3.331	360	1,033	2.869	50%	40%
27	250	884	3.536	311	918	2.952	300	952	3.173	333	986	2.961	360	918	2.550	50%	40%
28	250	774	3.094	311	803	2.583	300	833	2.777	333	863	2.591	360	803	2.231	50%	40%
29	250	663	2.652	311	689	2.214	300	714	2.380	333	740	2.221	360	689	1.913	50%	40%
30	250	553	2.210	311	574	1.845	300	595	1.983	333	616	1.851	360	574	1.594	50%	40%

LARGE PLANTATION
SCHEDULE OF AVERAGE RUBBER YIELD & NET INCOME RATE
NORMAL TAPPING (7th Year)

YIELD IN KG. DRY RUBBER PER TREE IN LARGE PLANTATION (above 40 Hectares) — PLANTING DENSITY

NET INCOME RATE (NIRC)

Age of Tree	416 Std. Tree Density per Ha.	416 Ave. Yield per Ha.	416 Ave. Yield per Tree	444 Std. Tree Density per Ha.	444 Ave. Yield per Ha.	444 Ave. Yield per Tree	500 Std. Tree Density per Ha.	500 Ave. Yield per Ha.	500 Ave. Yield per Tree	555 Std. Tree Density per Ha.	555 Ave. Yield per Ha.	555 Ave. Yield per Tree	600 Std. Tree Density per Ha.	600 Ave. Yield per Ha.	600 Ave. Yield per Tree	Cup Lumps	Latex
7	395	2,329	5.896	426	2,387	5.603	475	2,421	5.096	527	2,476	4.698	570	2,362	4.344	45%	35%
8	395	2,380	6.025	426	2,440	5.727	475	2,473	5.206	527	2,530	4.800	570	2,414	4.235	45%	35%
9	395	2,423	6.133	426	2,484	5.830	475	2,517	5.298	527	2,575	4.886	570	2,458	4.312	45%	35%
10	395	2,465	6.241	426	2,526	5.930	475	2,562	5.394	527	2,620	4.972	570	2,500	4.386	45%	35%
11	395	2,490	6.305	426	2,553	5.994	475	2,587	5.447	527	2,647	5.023	570	2,527	4.433	45%	35%
12	395	2,507	6.348	426	2,570	6.034	475	2,606	5.496	527	2,666	5.059	570	2,544	4.463	45%	35%
13	358	2,525	7.052	400	2,588	6.469	430	2,533	5.890	477	2,588	5.426	516	2,472	4.791	45%	35%
14	358	2,533	7.075	400	2,596	6.490	430	2,542	5.912	477	2,598	5.447	516	2,480	4.907	45%	35%
15	358	2,507	7.004	400	2,570	6.426	430	2,516	5.852	477	2,572	5.392	516	2,456	4.760	45%	35%
16	358	2,491	6.957	400	2,554	6.384	430	2,498	5.810	477	2,554	5.355	516	2,440	4.729	45%	35%
17	358	2,465	6.885	400	2,526	6.316	430	2,474	5.754	477	2,529	5.301	516	2,414	4.678	45%	35%
18	358	2,414	6.743	400	2,475	6.188	430	2,422	5.633	477	2,477	5.192	516	2,365	4.584	45%	35%
19	312	2,346	7.519	364	2,406	6.609	375	2,253	6.008	416	2,307	5.545	450	2,200	4.889	45%	35%
20	312	2,261	7.247	364	2,317	6.366	375	2,172	5.792	416	2,223	5.343	450	2,120	4.710	45%	35%
21	312	2,167	6.947	364	2,222	6.104	375	2,082	5.552	416	2,131	5.122	450	2,032	4.516	45%	35%
22	312	2,040	6.538	364	2,091	5.745	375	1,959	5.224	416	2,005	4.820	450	1,913	4.250	45%	35%
23	312	1,913	6.130	364	1,960	5.385	375	1,836	4.897	416	1,879	4.517	450	1,793	3.984	45%	35%
24	312	1,785	5.721	364	1,829	5.025	375	1,715	4.573	416	1,755	4.218	450	1,673	3.718	45%	35%
25	250	1,675	6.700	311	1,717	5.521	300	1,507	5.022	333	1,541	4.628	360	1,472	4.088	45%	35%
26	250	1,530	6.120	311	1,569	5.045	300	1,377	4.590	333	1,409	4.230	360	1,345	3.736	45%	35%
27	250	1,360	5.440	311	1,394	4.482	300	1,224	4.080	333	1,251	3.758	360	1,195	3.319	45%	35%
28	250	1,190	4.760	311	1,221	3.925	300	1,071	3.570	333	1,096	3.291	360	1,046	2.996	45%	35%
29	250	1,020	4.080	311	1,046	3.362	300	918	3.060	333	939	2.819	360	896	2.489	45%	35%
30	250	850	3.400	311	872	2.804	300	765	2.550	333	783	2.351	360	747	2.076	45%	35%

SCHEDULE OF CUMULATIVE DEVELOPMENT COST PER HECTARE (CDC)

SMALL PLANTATION

PLANTING DENSITY (No. of Trees)

(1 - 40 has.)

Age	416	444	500	555	600
1	P15,600	P16,640	P18,720	P20,800	P22,490
2	P18,600	P19,840	P22,320	P24,800	P26,815
3	P21,600	P23,040	P25,920	P28,800	P31,140
4	P24,600	P26,240	P29,520	P32,800	P35,465
5	P27,300	P29,120	P32,760	P36,400	P39,358
6	P30,000	P32,000	P36,000	P40,000	P43,250

SCHEDULE OF CUMULATIVE DEVELOPMENT COST PER HECTARE (CDC)

LARGE PLANTATION

PLANTING DENSITY (Above 40 Has.)

Age	416	444	500	555	600
1	P26,000	P27,742	P31,200	P34,684	P37,492
2	P31,000	P33,077	P37,200	P41,354	P44,702
3	P36,000	P38,412	P43,200	P48,024	P51,912
4	P41,000	P43,747	P49,200	P54,694	P59,122
5	P45,500	P48,550	P54,600	P60,697	P65,611
6	P50,000	P53,350	P60,000	P66,700	P72,100

SCHEDULE OF YEARLY DEVELOPMENT COST PER HECTARE (YDC) _1/

	SMALL PLANTATION (1 - 40 has.)				
	PLANTING DENSITY (No. of Trees)				
Age	416	444	500	555	600
1	P15,600	P16,640	P18,720	P20,800	P22,490
2	P3,000	P3,200	P3,600	P4,000	P4,325
3	P3,000	P3,200	P3,600	P4,000	P4,325
4	P3,000	P3,200	P3,600	P4,000	P4,325
5	P2,700	P2,880	P3,240	P3,600	P3,893
6	P2,700	P2,880	P3,240	P3,600	P3,892
TOTAL	P30,000	32,000	P36,000	P40,000	P43,250

_1/ In cases where the landowner adopted a different planting density other than those prescribed in this table, the YDC could be generated as shown in the following illustrative example:

GIVEN:

Plantation Area = 30.0000 has.
Plant Spacing Adopted = 3m. x 7m.

REQUIRED: Generate the YDC Table

COMPUTATION:

1. Compute the planting density (PD):

$$PD = \frac{10,000 \text{ sq. m.}}{3m. \times 7m.} = \frac{10,000 \text{ sq. m.}}{21 \text{ sq. m.}} = 476$$

2. Compute for the total YDC:

Total YDC = Planting density x Ave. Cost per Tree 2/
= 476 trees x P72.00 per tree
= P 34,272

_2/ For small plantation, the average development cost per tree during its gestation period (year 0 to year 6) is estimated at P72.00.

3. The percentage distribution of the total YDC during its gestation period as provided by various industry sources is as follows:

Age of the Tree		Percent Y D C
1	. . . .	52%
2	. . . .	10%
3	. . . .	10%
4	. . . .	10%
5	. . . .	9%
6	. . . .	9%

4. Generate the YDC Table

Age of Tree	Percent of YDC	x	Total YDC	Y D C
1	52%	x	34,272	17,821
2	10%	x	34,272	3,427
3	10%	x	34,272	3,427
4	10%	x	34,272	3,427
5	9%	x	34,272	3,085
6	9%	x	34,272	3,085
	Total YDC	=	P	34,272

SCHEDULE OF YEARLY DEVELOPMENT COST PER HECTARE (YDC) 3

	LARGE PLANTATION (Above 40 Has.)				
	PLANTING DENSITY (No. of Trees)				
Age	416	444	500	555	600
1	P26,000	P27,743	P31,200.00	P34,684.00	P37,492
2	P5,000	P5,335	P6,000.00	P6,670.00	P7,210
3	P5,000	P5,335	P6,000.00	P6,670.00	P7,210
0	P5,000	P5,335	P6,000.00	P6,670.00	P7,210
5	P4,500	P4,802	P5,400.00	P6,003.00	P5,489
6	P4,500	P4,800	P5,400.00	P6,003.00	P5,489
TOTAL	P50,000	P53,350	P60,000.00	P66,700.00	P72,100

_3/ In cases where the landowner adopted a different planting density other than those prescribed in this table, the YDC could be generated as shown in the following illustrative example:

GIVEN:
Plantation Area = 30.0000 has.
Planting Space Adopted = 4m. x 9m.

REQUIRED: Generate the YDC table:

COMPUTATION:
1. Compute the planting density (PD):

$$PD = \frac{10,000 \text{ sq. m.}}{4m. \times 9m.} = \frac{10,000 \text{ sq. m.}}{36 \text{ sq. m.}} = 278$$

2. Compute for the total YDC:

Total YDC = Planting density x Ave. Cost per Tree _4/
= 278 trees x P120 per tree
= P 33,360

_4/ For large plantation, the average development cost per tree during its gestation period (year 0 to year 6) is estimated at P120.00.

3. The percentage distribution of the total YDC during its gestation period as provided by various industry sources is as follows:

Age of the Tree		Percent YDC
1	. . . .	52%
2	. . . .	10%
3	. . . .	10%
4	. . . .	10%
5	. . . .	9%
6	. . . .	9%

4. Generate the YDC Table

Age of Tree	Percent of YDC	x	Total YDC	Y D C
1	52%	x	33,360	17,347
2	10%	x	33,360	3,336
3	10%	x	33,360	3,336
4	10%	x	33,360	3,336
5	9%	x	33,360	3,003
6	9%	x	33,360	3,002
	Total YDC	=	P	33,360

I L L U S T R A T I V E   E X A M P L E

CDC COMPUTATION FOR YOUNG, NON-TAPPABLE TREES

G I V E N :

Size of Farm	=	Large Plantation (500 hectares)
Planting Density	=	600 trees per hectare
Date of Establishment	=	January 1, 1993
Date of LBP Claim	=	
Folder Receipt		
for Processing	=	November 30, 1997

Year						Yearly Development Cost (YDC) _1/
1993	(	52%	x	P72,100)		P37,492
1994	(	10%	x	P72,100)		P7,210
1995	(	10%	x	P72,100)		P7,210
1996	(	10%	x	P72,100)		P7,210
November, 1997	(	9%	x	P72,100)	x (330/365)	P5,867 _2/
Cumulative Development Cost (CDC)						P64,989

_1/ See Annex "C-1" for the Schedule of Yearly Development Cost
per Hectare (YDC)

_2/ The equivalent YDC for 1997 is the total operating cost from
January 1 to November 30, 1997, estimated as follows:

    = P6,489 x (330/365)

    = P5,867

ILLUSTRATIVE EXAMPLE
Downward Adjustment on Rubber Yield

GIVEN:

Landowner (LO)	:	USA Rubber Corporation
Location of Property	:	Makilala, Cotabato
Planting Density Adopted	:	416 trees per hectare
Tapping System	:	Normal Tapping (Tapping starts at age 7)
Condition of Standing Trees	:	Seventy-Five percent (75%) of the standing trees on each age-block have dry and bumpy scars on its tapping panels.
Size of Farm	:	Large Rubber Plantation.

Block No.	Age of Tree	Area for Acquisition	Total No. of Trees	Ave. Yield per Tree _1/	Percentage Yield Adjustment	Adjusted Yield per Tree
I	21	45.8674	13,760	6.947	5%	6.600
II	15	15.0992	6,795	7.004	10%	6.304
III	8	5.4480	1,772	6.025	10%	5.423
IV	29	12.3399	3,100	4.080	5%	3.876
V	24	3.0000	936	5.721	5%	5.435

_1/ Please see page 4 of Annex B for the average yield per tree corresponding to the age of the trees.

ILLUSTRATIVE EXAMPLE

GIVEN :

Landowner (LO)	:	ABC Rubber Corporation
Location of Property	:	Goodyear, Zamboanga del Sur
Date of LO's Offer	:	January 19, 1997
Date of Field Invest.	:	November 04, 1997
Date of CF Receipt for Processing	:	March 10, 1998
Planting Density	:	416 trees per hectare
Tapping Practice	:	Normal Tapping (7th Year)
Size of Farm	:	Large Rubber Plantation

REQUIRED : Compute the total land value of the property.

COMPUTATION :

Since the time gap between the date of the FI and the date of CF Receipt for processing is less than six (6) months, compute the land value based on the age of trees at the time of FI.

Valuation Summary	–	See Annex "E-1"
CNI Computation	–	See Annex "E-2"
MVTD Computation	–	See Annex "E-3"
Total Land Value	–	P 37,772,425

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VALUATION SUMMARY
ABC Rubber Corporation

Block No. (1)	Age of Tree at the Time of F I (2)	Land Use (3)	Area for Acquisition (Ha.) (4)	C S _1/ (5)	CNI _2/ (6)	NTP _3/ (7)	CDC _4/ (8)	Salvage Value of Trees _5/ (9)	Unit Land Value (ULV) (10)	Total Land Value [(10)x(4)] (11)
I	38	Rubber	30.58	-	-	1,041	-	9,650	11,732 _6/	358,765
II	37	Rubber	104.99	-	-	1,041	-	14,480	16,562 _6/	1,738,844
III	36	Rubber	81.94	-	-	1,041	-	15,760	17,842 _6/	1,461,973
IV	35	Rubber	167.57	-	-	1,041	-	15,400	17,482 _6/	2,929,459
V	34	Rubber	57.59	-	-	1,041	-	17,050	19,132 _6/	1,101,812
VI	32	Rubber	140.62	-	-	1,041	-	19,040	21,122 _6/	2,970,176
VII	31	Rubber	42.61	-	-	1,041	-	22,650	24,732 _6/	1,053,831
VIII	29	Rubber	79.01	-	51,963	5,347	-	-	47,229 _7/	3,731,563
IX	12	Rubber	81.32	-	123,283	9,218	-	-	111,877 _7/	9,097,838
X	10	Rubber	51.28	-	142,833	10,581	-	-	129,608 _7/	6,646,298
XI	8	Rubber	42.51	-	137,883	10,581	-	-	125,153 _7/	5,320,254
XII	4	Rubber	30.44	-	-	1,041	42,649	-	44,731 _8/	1,361,612

Total Land Value (TLV) - ============ 37,772,425 ============

_1/ No Applicable CS
_5/ See Annex "E-5"
_8/ ULV = (MV x 2) + CDC

_2/ See Annex "E-2"
_6/ ULV = (MV x 2) + Salvage Value

_3/ See Annex "E-3"
_7/ ULV = (CNI x 0.90) + (MV x 0.10)

_4/ See Annex "E-4"

CNI COMPUTATION
ABC Rubber Corporation

Block No. (1)	Age of Tree at the Time of Land Acquisition P I (2)	Use (3)	Area for Acquisition (Ha.) (4)	Area Planted (Ha.) (5)	Total No. of Trees per 40's Data (6)	Total No. of Trees per Random Sampling (7)	Total No. of Trees per Proposed Guidelines (8)	Total No. of Trees Adopted (9)	Average Yield per Tree (kDRC/Tree) (10)	Average Selling Price (P/kDRC) (11)	Gross Income (9)x(10)x(11) (12)	M I E % (13)	Total Net Income (12)x(13) (14)	Net Income per Hectare (14)/(4) (15)	C N I (15)/9.12 (16)
I	38	Rubber	30.58	30.58	3,500	2,951	7,645	2,951	1/	-	-	-	-	-	-
II	37	Rubber	104.99	104.99	15,500	15,203	26,248	15,203	1/	-	-	-	-	-	-
III	36	Rubber	81.94	81.94	13,500	12,914	20,485	12,914	1/	-	-	-	-	-	-
IV	35	Rubber	167.57	167.57	30,000	25,806	41,893	25,806	1/	-	-	-	-	-	-
V	34	Rubber	57.59	57.59	10,000	9,819	14,398	9,819	1/	-	-	-	-	-	-
VI	32	Rubber	140.62	140.62	30,500	26,774	35,155	26,774	1/	-	-	-	-	-	-
VII	31	Rubber	42.61	42.61	10,000	9,651	10,653	9,651	1/	-	-	-	-	-	-
VIII	29	Rubber	79.01	79.01	18,500	17,343	19,753	17,343	4.080	15.45	1,093,233	45%	491,955	6,226	51,883
IX	12	Rubber	81.32	81.32	30,000	27,258	32,121	27,258	6.348	15.45	2,673,372	45%	1,203,017	14,794	123,283
X	10	Rubber	51.28	51.28	22,500	20,409	20,256	20,256	6.241	15.45	1,953,153	45%	878,919	17,140	142,833
XI	8	Rubber	42.51	42.51	18,000	17,174	16,791	16,791	6.025	15.45	1,563,011	45%	703,355	16,546	137,883
XII	4	Rubber	30.44	30.44	19,800	19,000	12,663	12,663	-	-	-	-	-	-	-
TOTAL	-		910.46												

1/ The economic life of rubber trees at normal tapping is up to 30 years old. Rubber trees with an age of 31 years old and above are valued based on the terminal value of standing trees estimated at P100 per tree.

MVTD COMPUTATION
ABC Rubber Corporation

Block No. (1)	Age of Tree at the Time of F-1: (2)	Land Use (3)	Area for Land Acquisition (Ha.) (4)	Area Planted (Ha.) (5)	Total No. of Trees Adopted (6)	Average Density per Ha. (6)/(4) (7)	Unit Land Value per Ha. (8)	Total Land Value (4)x(8) (9)	Value per Tree (10)	Value of Trees per Ha. (7)x(10) (11)	Total Value of Trees (11)x(4) (12)	Total Value (Land+Tree) (9)+(12) (13)	Location Adj. Factor (14)	(15)	Total MVTD (13)x(14)x(15) (16)	MVTD per Ha. (16)/(4) (17)
I	38	Rubber	30.58	30.58	2,951	96	1,100 2/	33,638	5/	-	-	33,638	91%	1.040	31,835	1,041
II	37	Rubber	104.99	104.99	15,203	145	1,100 2/	115,489	5/	-	-	115,489	91%	1.040	109,299	1,041
III	36	Rubber	81.94	81.94	12,914	158	1,100 2/	90,134	5/	-	-	90,134	91%	1.040	85,303	1,041
IV	35	Rubber	167.57	167.57	25,806	154	1,100 2/	184,326	5/	-	-	184,326	91%	1.040	174,446	1,041
V	34	Rubber	57.59	57.59	9,819	170	1,100 2/	63,349	5/	-	-	63,349	91%	1.040	59,953	1,041
VI	32	Rubber	140.62	140.62	26,774	190	1,100 2/	154,682	5/	-	-	154,682	91%	1.040	146,391	1,041
VII	31	Rubber	42.61	42.61	9,651	226	1,100 2/	46,871	5/	-	-	46,871	91%	1.040	44,359	1,041
VIII	29	Rubber	79.01	79.01	17,343	220	1,250 3/	98,762	20	4,400	347,644	446,406	91%	1.040	422,479	5,347
IX	12	Rubber	81.32	81.32	27,258	335	1,700 4/	138,244	24	8,040	653,813	792,057	91%	1.040	749,603	9,218
X	10	Rubber	51.28	51.28	20,256	395	1,700 4/	87,176	24	9,480	486,134	573,310	91%	1.040	542,580	10,581
XI	8	Rubber	42.51	42.51	16,791	395	1,700 4/	72,267	24	9,480	402,995	475,262	91%	1.040	449,788	10,581
XII	4	Rubber	30.44	30.44	12,663	416	1,100 2/	33,484	-	-	-	33,484	91%	1.040	31,689	1,041
T O T A L			910.46													

1/ EMV became effective January 1, 1988; UMV is Grossed-up to date of Receipt of CF for processing.
4/ UMV 1st Class Rubber Land.
5/ No UMV for Old Trees (>30 years old).
2/ UMV of Idle land.
3/ UMV of 3rd Class Rubber land.

C D C   C O M P U T A T I O N
ABC Rubber Corporation

1. The CDC for 4 year old trees at 416 trees per hectare planting density (See Annex C of JMC No. 1) is P41,000.

2. Grossing-up the CDC at the time of FI up to the date of LBP Claim Folder Receipt.

$$\text{Grossed-up CDC} = \text{P } 41,000 \times \frac{\text{RCPI March '98}}{\text{RCPI Nov. '97}}$$

$$= \text{P } 41,000 \times \frac{245.7}{236.2}$$

$$= \text{P } 42,649 \text{ per hectare}$$

SALVAGE VALUE OF OLD RUBBER TREES
ABC Rubber Corporation

Block No. (1)	Age of Tree at the Time of Land Acquisition (2)	Use (3)	Area for Acquisition (Ha.) (4)	Area Planted (Ha.) (5)	Total No. of Trees per 10's Data Sampling (6)	Total No. of Trees per Based on Sampling (7)	Total No. of Trees per Proposed Guidelines (8)	Total No. of Trees Adopted (9)	Average Selling Price (P/Tree) 1/ (10)	Total Value of Old Trees (9)x(10) (11)	Salvage Value of Trees per Ha. (11)/(4) (12)
I	38	Rubber	30.58	30.58	3,500	2,951	7,645	2,951	100	295,100	9,650
II	37	Rubber	104.99	104.99	15,500	15,203	26,248	15,203	100	1,520,300	14,480
III	36	Rubber	81.94	81.94	13,500	12,914	20,485	12,914	100	1,291,400	15,760
IV	35	Rubber	167.57	167.57	30,000	25,806	41,893	25,806	100	2,580,600	15,400
V	34	Rubber	57.59	57.59	10,000	9,819	14,398	9,819	100	981,900	17,050
VI	32	Rubber	140.62	140.62	30,500	26,774	35,155	26,774	100	2,677,400	19,040
VII	31	Rubber	42.61	42.61	10,000	9,651	10,653	9,651	100	965,100	22,650
VIII	29	Rubber	79.01	79.01	18,500	17,343	19,753	17,343	-	-	-
IX	12	Rubber	81.32	81.32	30,000	27,258	32,121	27,258	-	-	-
X	10	Rubber	51.28	51.28	22,500	20,409	20,256	20,256	-	-	-
XI	8	Rubber	42.51	42.51	18,000	17,174	16,791	16,791	-	-	-
XII	4	Rubber	30.44	30.44	19,800	19,000	12,663	12,663	-	-	-
			910.46								

Total Salvage Value of Old Trees - P10,311,800

1/ Rubber trees with an age of 31 years old and above are valued based on the terminal value of standing trees at P100 per tree.