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11.7[illegible]-3992

1. CONCLUSIONS AND RECOMMENDATIONS

1.1 The Demand: The rapidly growing demand of the rising generation [illegible] for MILD CIGARETTES containing mainly Virginia-type and Burley tobacco. The [illegible] consumption in Rwanda, after deducting re-exported cigarettes, was [illegible] in 1969, with an increase at the rate of [illegible] per year.

1.2 Marginal Side-issues: The only predictable demand for industrialization of the existing dark air cured tobacco is to blend [illegible] tons/year of the [illegible] or 1,000 tons grown, into the proposed cigarette blend. Manufactured pipe tobacco is not acceptable and cigars are barely marginal [illegible] on a commercial scale. Light leaf grown for the cigarettes might subsequently compete in the European market.

1.3 Availability of Raw Materials: Soil and climate are suitable in large areas for the Virginia and Burley tobacco required; and Mr. Tuka's report assures technical feasibility, PROVIDED THAT FOREIGN TECHNICAL ASSISTANCE IS GIVEN.

1.4 Market Tests: In very encouraging smoking tests, regular smokers of the favourite imported brand "Belga Legere" each compared a "Belga" with a test cigarette containing Virginia and Burley leaf of the quality expected to grow in Butare and Icyanya regions of Rwanda and also containing a little traditional dark leaf. One smoker in three preferred our experimental cigarette and on average those who preferred "Belga" at Fr15.-/pack said they might buy the new cigarette at Fr12.-. Only 1 in 5 failed to recognize which was "Belga Legere".

1.5 Prices of Products: ECONOMIC FEASIBILITY is shown for 120 million cigarettes per year at Fr12.-/pack of 20 (Appendix V). This is based on estimated costs of cured and re-dried leaf (Appendix IV) of Fr70.-/kg which would be $0.90 to $1.- in Europe. Leaf price is based on conflicting sources of data, but is low enough to leave a margin of safety in cigarette price.

1.6 Technical Assistance: This is essential in both the AGRICULTURAL AND INDUSTRIAL phases; and $50,000.- for an agricultural first phase is recommended before deciding on $50,000.- for the INDUSTRIAL TECHNICAL ASSISTANCE in the second phase which would also involve investment of over $700,000.-:

First phase: [illegible] plots organized in detail by a Virginia-type [illegible]. Technical assistance [illegible],000.-

Second phase: [illegible] the first year of phase I and [illegible] third year [illegible] leaf [illegible] finding an investor for the cigarette factory: a third year for the leaf specialist and 1 year each for specialists in a) leaf curing and re-drying and b) cigarette manufacture. Techn. Ass. $[illegible].-). Investments: Curing barns $[illegible],000.- (paid in Rwanda) - Re-drying installation $[illegible],000.- (including $[illegible],000.- importation) - Cigarette factory $55[illegible],[illegible].- (including $[illegible],000.- importation and $200,000 Rwanda tobacco stocks). Calculations include profits to attract an independent investor for the cigarette factory, but not for the re-drying installation, for which a low interest loan and non-profit operation are suggested.

1.7 Leaf Development Programme: Phase I is visualized for planting about 1½ hectares the first year, 6 hectares the second, and 50 hectares or more, the third. The first year would experiment under various conditions in a number of small areas of both Virginia and Burley. Production costs must be studied at every step, to confirm or correct estimates tabulated in Appendix IV page . of this report.

1.8 Leaf Exports: Export of the resulting leaf is possible but as it has not yet been grown and estimated production costs are near the limit at which it could compete for export, it would be unwise to draw conclusions until the end of the first year's tests.

1.9 Import Substitution: Excluding relatively luxury cigarettes, and the unreliable contraband re-exports, 1969 imports that might be substituted amount to 170,000 millions at Fr350.-/1,000, making Fr45 million ($450,000.-). If this were substituted by a foreign investor with 12 per cent profit (after the initial years losses) and 8 per cent interest on capital to be repatriated, about $300,000.- of this $450,000.- would be spent in foreign currency. $150,000.- foreign purchasing power would be gained.

1.10. Tax Revenue: Fr100.-/1,000 cigarettes is included for tax in feasibility calculations (Appendix [illegible] pages and). This is practically the same rate as the present 30 per cent import duty, so that customs duty revenue due to import substitution is balanced by tax.

1.11 Employment: [illegible] the immediate target of [illegible] million cigarettes/year, the cigarette factory will employ [illegible] ; and about 1,500 farmers would earn [illegible] producing the 50 tons of tobacco.

1.12 "Break-[illegible]" Sales Rate: [illegible] small market [illegible] needing the output of [illegible] cigarette making machines operating at much less than 120 million year will [illegible] costs, so that sales must be built up as quickly as possible. [illegible] cigarettes would be [illegible] for 60 million/year; Frl. [illegible] 120 million/year; Frs. for 24 million/year. Protection by increased customs duty would encourage Frs. Two alternatives would achieve an early "break-even" rate:

(a) Co-operation with Burundi in one factory for the double market.

(b) Co-operation of Tabacongo to make their cigarettes "Belga Rouge" on the same machine in Kigali and sell Rwanda National cigarettes through their existing sales network of retailers. This would avoid the duplication of administrative and selling costs that are disproportionately high in such a small enterprise. Independent action must hurt both parties; and introduction of a third party, as suggested in Mr. Dukat's technical feasibility report, would split profits, if any, three ways.

1.13 Sources of Machinery. Second-hand machinery can make excellent cigarettes at the low speeds that are adequate here; but they are liable to be shut down for want of replacement parts, either because parts are no longer obtainable, or because parts were wrongly identified when ordered, or for want of strict stock-keeping discipline. No adequate facilities are available in Kigali for manufacturing such parts in an emergency; and such a small factory tends to "have all its eggs in one basket". Long deliveries of out-of-date parts could shut down the plant for several months.

2. STATISTICS AND OBSERVATIONS [illegible] MARKET POTENTIAL

2.1 Dark Tobacco quantities, qualities and varieties have been covered in Mr. Dukat's report. The Ministry of Agriculture estimates that production and consumption have remained unchanged somewhere between [illegible] and 1,000 tons/year for 8 years and are likely to remain the same for at least 5 years. At most, 30 tons/year might be blended into the required mild cigarette. Kwasa Mission now uses about 5 tons/year in cigars that accounted for 50 tons/year in 2½ million cigars, 90 per cent sold in the Congo, before 1963. Appendices II and III explain the limitations of cigars and manufactured pipe tobacco.

Government statistics show no change in the traditional retail price selling leaf by leaf in the market places, since 1963. Those familiar with seasonal changes point out that spot-check prices within the 6 weeks of this study, when some of the new crop is coming to the market, cannot be truly representative. A price of Fr50.-/kg is to be expected for stable purchases of more than a ton at a time for cigarette manufacture. No mild varieties of tobacco have been cultivated beyond a research stage.

2.2 Cigarettes imported in the last 5 years constitute 99 per cent of the quantities tabulated in Appendix I page [illegible], extracted from 24 volumes of Government statistics and from cigarette importers' records.

Cigarette imports of about 20 tons/year through the troubled years increased rapidly when the consumer tax of Fr250.-/1,000 cigarettes (Fr5.-/pack of 20) was eliminated in March 1968, accompanied by reduction of import duty from 30 per cent to 20 per cent. Sales were also improved by better organised distribution to retailers when Tabacongo opened their sales offices early 1968.

Prices per pack of 20 cigarettes for which the Government use "Belga Rouge" as the standard of comparison, are given for each month since 1963 in Appendix I page [illegible] column 5, showing rise due to scarcity particularly in 1967 when troubles necessitated air transport.

Real indications of the market start with 1968. At first sight, 22 tons 1967: 165 tons 1968: 395 tons 1969, (Appendix I, page 1) suggests a geometric progression with a multiplying factor of about 3; but frontier

troubles invalidate [illegible] figures [illegible] increase is not geometric but a basic upward [illegible] tons (30 million cigarettes) per year. [illegible] following influences:

(a) Burundi import duty was increased from [illegible] in November 1968, which gradually raised Burundi [illegible] 20.- as low-duty stocks became exhausted. At about the same time Rwanda prices dropped from Fr20.- to 11.- due to eliminating consumer tax [illegible] reducing Rwanda import duty by Fr 1./pack. This [illegible] March 196[illegible], with 6 months time lag using up old stocks. Appendix [illegible] show that Rwanda sales of brands most popular in Burundi averaged [illegible] quarter through 3 quarters before the exhaustion of Burundi cheap stocks, (including the first quarter of 1969) and averaged [illegible] tons/quarter through the three next quarters. This increase, partly due to the reversal of contraband incentive, was 12½ millions per quarter from 30.½ to 43.[illegible] millions) representing a rate of 50 million cigarettes year more in the second half of 1969 than in that half of 1968. Official sales of these brands in Burundi in 1968 (mainly prior to increasing duty in November) were 109 millions and dropped practically 50 million, to 5[illegible] millions in 1969. Part of this drop was certainly balanced by increased contraband direct from the Congo; but 30 million is a reasonable estimate of re-exportation from Rwanda to Burundi in 1969, as indicated in Appendix I page .

(b) Uganda increased the consumer tax in July 1969 so that cigarettes exported to Rwanda without this heavy tax and then fraudulently re-exported back into Uganda make a great profit. Rwanda imports from Uganda to the fourth quarter of 1969 are practically double those of the second quarter and six times those of 1968 fourth quarter. (Appendix I page ., columns 10 and 11). This might suggest that over 80 per cent are re-exported, but allowing for some increase of Rwanda consumption, 65 per cent (70 million 1969) re-exported is considered to be a conservative estimate (Appendix I page). Uganda also has 200 per cent duty on imported cigarettes creating an incentive for Rwanda fraudulent re-exports of some of the 25 million cigarettes of luxury brands imported into Rwanda. Policing these frontiers is difficult and expensive and the personnel are not available.

Rwanda cigarette consumption 1969 is thus estimated as 200 million cigarettes (see Appendix I page 1).

Rate of increase of cigarette consumption can only be estimated correctly by eliminating the above mentioned variables. Plotting graphs of Congo, Uganda and total imports and recognizing effects of price changes, taxes and import duty, suggests an isolated step of 26 tons/quarter between second and third quarters of 1968, due to Rwanda tax and duty changes March 1968. This is superimposed on a relatively steady increase of 10 tons/quarter in the two preceeding and five subsequent quarters, after one has allowed for contraband re-exports as estimated above, particularly the spectacular increase of Uganda imports in the fourth quarter of 1969. Unfortunately, 1970 first quarter figures were not yet available. In 1969, 40 tons (gross) meant 30 millions increase in 200 millions real consumption, i.e. 15 per cent. Population growth is 3 per cent, but the main smoking age group of 20 to 35 years is increasing at 6 per cent per year according to the 1965 census (published 1968) by 5-year age groups; and whereas most men at 35 were too old or too poor to continue smoking cigarettes, this is changing.

2.3 Pipe Smoking Tobacco: Reasons why manufactured pipe tobacco will be unacceptable are relegated to Appendix II to avoid detracting from the main issue.

2.4 Cigars and Cigarillos: Exports have been negligible since 1962 (1963: Nil. 1964: RW Fr12,265 ($123.-). 1965: Nil. 1966: Fr3,000.- (US$30.-). 1967-1969: Nil). Appendix III explains why, COMMERCIALLY, cigars and cigarillos are a poor marginal prospect that should not detract from the main issue. In 1969, Messrs Tabacongo imported 3,650 cigars and 14,780 cigarillos as against 158,570,000 cigarettes.

[illegible] A[illegible]

[illegible]

Half the imported [illegible]

[illegible] making machine [illegible]

[illegible]

[illegible] alter [illegible]

Existing [illegible]

[illegible] the consumption [illegible]

will [illegible]

suitable for [illegible]

3.2 Cigarettes [illegible] Rwanda as follows:

[illegible]

millions: [illegible]

These quantities will be modified [illegible] levels in neighbouring countries.

Cigarette importers believe that [illegible] by purchasing power of the [illegible] smoker. However, 2[illegible] million at Fr13.- per pack in 1969 cost [illegible] Fr10.- per pack by a factory making at least 240 million per year. This factory would have to attract new smokers by its lower prices to balance those who would continue to smoke imported cigarettes at any price.

On this basis the full output of one cigarette making machine (120 million/year) could supply a reasonable target of half the consumption soon after starting, selling at Fr12. per pack of 20 cigarettes. As shown below, this would be feasible, with a second machine in reserve and provision for adding a third and additional packing facilities.

[illegible]

(Appendix [illegible]), [illegible] or [illegible]

[illegible]

he would [illegible]

assured market.

If the farmer [illegible] would [illegible] pack [illegible] this would probably [illegible] exports to Europe after [illegible] and the agent's commission. [illegible] limit.

[illegible] mercy of the weather, whereas [illegible] curing takes 5 days, [illegible] the cost [illegible] of the barn. Consequently [illegible] correspondingly smaller.
Cost of furnace, [illegible] the investment higher, as shown in Appendix IV [illegible] per season for very small barns 4m x 4m. This is the [illegible]. Amortising this is likewise shown at Fr4. /kg of leaf, to which must be added the cost of fuel at about Fr0.7/kg of leaf [illegible].

[illegible] PLAN

[illegible] somewhat con- [illegible] to arrive at the price [illegible] for [illegible] -type and Burley leaf, [illegible] rough roads are likely to damage [illegible] of the market. Selected [illegible] quantities is expected at [illegible].

[illegible] Appendix V page 1 pro- [illegible] including [illegible] hand since the problem [illegible] The minimum [illegible] adequate to provide cut [illegible] that additional making and [illegible] cigarettes/year would only increase the $[illegible] $[illegible].-.

[illegible] Appendix V page [illegible] lists the costs per year, [illegible] all the main materials for [illegible] cellophane wrapping. [illegible] Paper parcels of [illegible] material.

[illegible] Capital Budget [illegible] ton/year: In Appendix V page [illegible] for "ageing" the leaf, to eliminate [illegible] for maintaining a more uniform blend in spite of [illegible] from year to year. Interest at 8 per cent on all the capital [illegible] investment for profit. A foreign investor for the cigarette factory would probably not want to be involved in the leaf re-drying installation. The latter has been proposed as a separate non-profit co-operative organization.

5.5 **Operating Expenses and Cigarette Prices**: Appendix V page 5 [illegible] per month extracted from data of the previous [illegible] sheets, and extends them to show the minimum price per pack of 20 cigarettes that will provide Fr100.- tax per 1,000 cigarettes and 12 per cent profit on capital, when working one cigarette machine at full capacity. Fr12.- per pack of 20 cigarettes is an acceptable price now and in one or two years when the [illegible] operation, this output of 120 million cigarettes/year would suffice [illegible] the true [illegible] consumption.

5.6 **Capital Required for 60 million, 120 million and 240 million Cigarettes/year**: Appendix V page 6 summarizes the items of page 4 after recalculations to provide for proportionate tobacco and materials stocks and appropriate labour and expenses, also for an additional Making, Packing and Cellophane machine for 240 million per year. The heavy item for administration remains unchanged. This page contributes to the more important comparison of page 7 (Appendix V).

5.7 **Cigarette Prices for 60 million, 120 million and 240 million Cigarettes/year**: Appendix V page 7 recalculates data of page 5 and shows that for the same tax (Fr100.-/1,000 cigarettes) and 12 per cent profit on the capital (different in each case) prices would be respectively Fr1[illegible]½, Fr12.- and Fr10.-. Alternatives at the bottom of the 60 million/year column suggest ways to build up sales without profit, with or without tax, in the early months of operation.

[illegible]

1. [illegible]: [illegible] a good general indication of imported cigarette [illegible] with which the new cigarette would compete. [illegible], Congo [illegible] "[illegible] Legere" containing a predominant amount of [illegible]. [illegible] Rwanda imports are mainly Virginia-[illegible] cigarettes from other [illegible] Rwanda imports represent cigarettes [illegible] per cent [illegible].

2. [illegible]: [illegible] experiments [illegible]. The experi-[illegible] to be exported [illegible] a little dark air-cured Rwanda leaf. Among [illegible] smokers, [illegible] were regular smokers [illegible] preferred the new cigarette, usually because they found [illegible]. Others detected the dark, [illegible] the few smokers of [illegible] liked the difference that it made. The [illegible] tends to irritate the throat and probably the alkaline [illegible] have neutralized this; and in this respect the [illegible] new cigarette pleased some and was not "strong" enough for others. [illegible] the new cigarette "stronger" referring to the physiological effect of the dark leaf. Very few failed to recognize which was the "Belga". Perhaps the more important result of these tests is that at Fr12.- in competition with Fr[illegible] for "Belga Legere", there would be a very good chance of winning over half the market. A lower initial price would give the impression of inferiority, but once the brand was established, the price could be reduced to Fr11.- for 140 million/year and Fr10.- for 240 million/year.

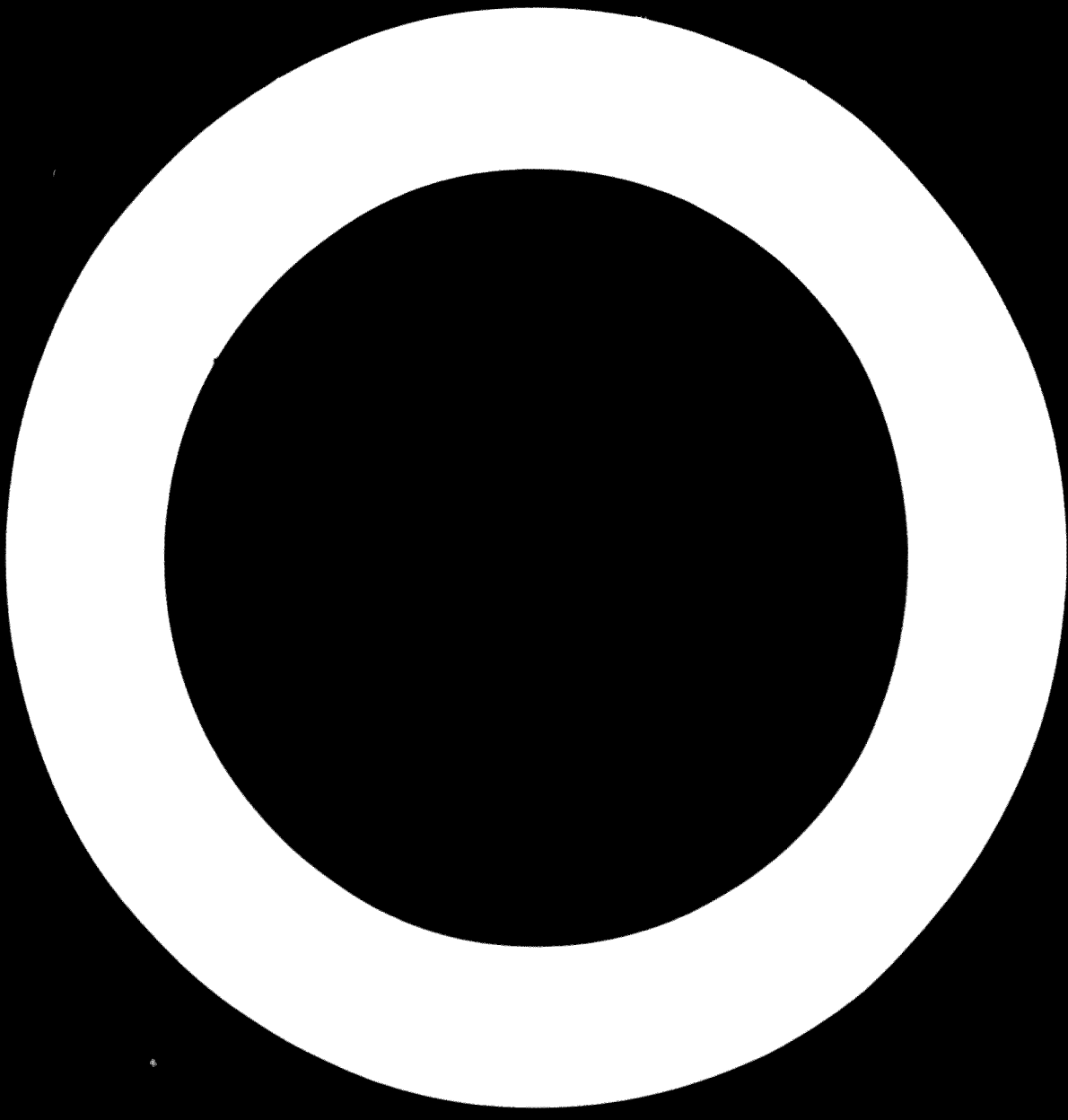
SALES CHANNELS

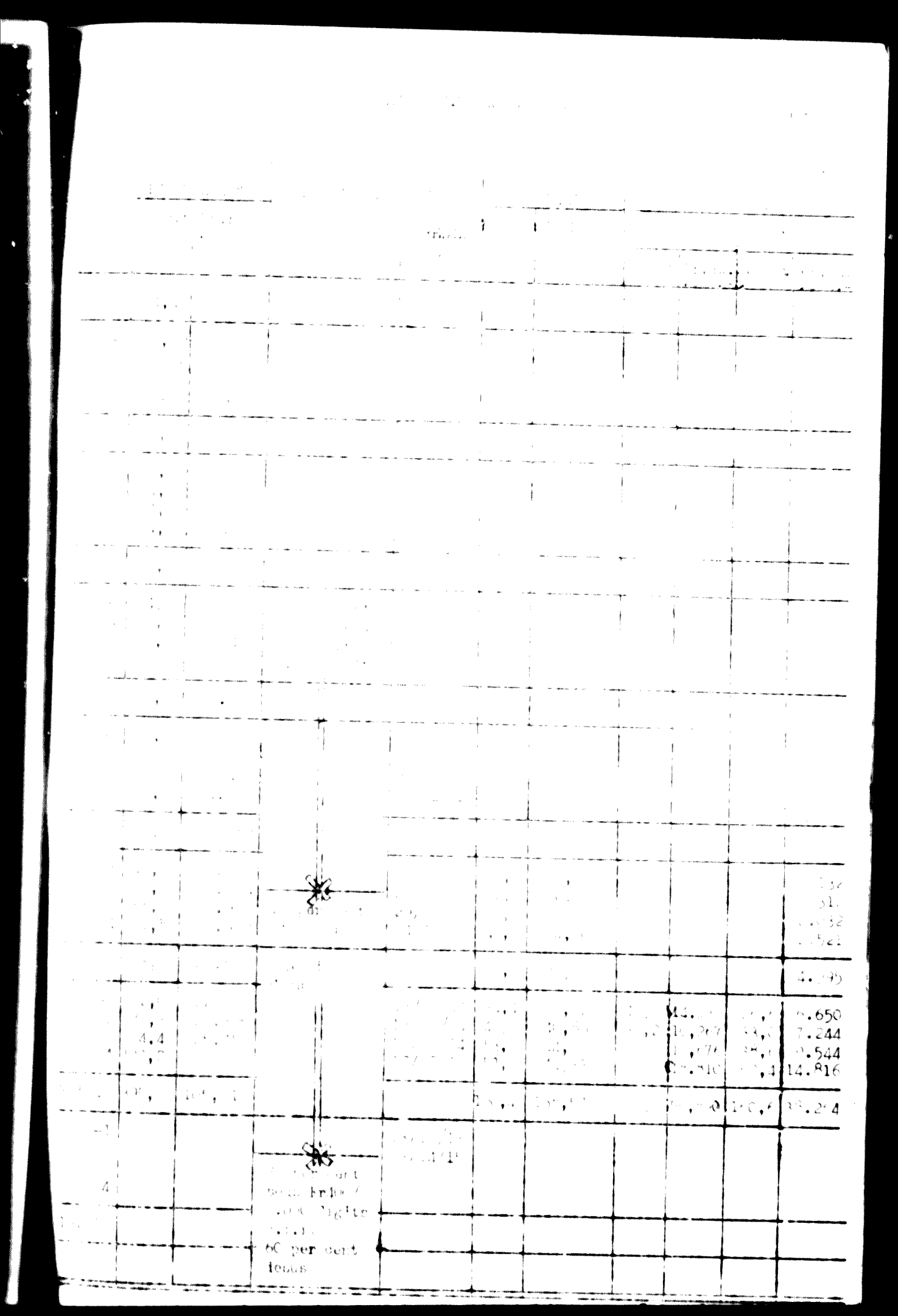
[illegible]

FUTURE EXPORT [illegible]

[illegible] Leaf [illegible] costs [illegible] requires experience [illegible]

[illegible] Cigarettes [illegible] arrangement [illegible] production [illegible] before [illegible] are [illegible]. Nevertheless [illegible] Rwanda smokes 46 per cent [illegible] cigarettes, Burundi [illegible] per cent "strong" dark cigarettes. If Burundi co-operation [illegible] arranged, Rwanda [illegible] tobacco could [illegible] another brand specially for Burundi.





APPENDIX [illegible]

RECONCILIATION OF 390 TONS NET IMPORTED WITH 200 MILLION CIGARETTES SMOKED

Net Tons Imported

	Congo Kinshasa (Belga)	Uganda (Sportsman)	U.K.	Belgium Luxmbrg.	[illegible]	France	U.S.A.	Holland	Burundi	TOTAL
1968 I	6.[illegible]	[illegible]	3.5	[illegible]						
II	[illegible].9	–	[illegible]	4.[illegible]		–	1.0	–	1.0	10.0
III	4[illegible].[illegible]	[illegible]	[illegible]	[illegible]				–	–	20.0
IV	55.9	1[illegible].4	[illegible]	[illegible]	–	[illegible]		0.1	[illegible].5	53.5
										72.0
										*160.5
Total	1[illegible]0.9	[illegible]	[illegible]	[illegible].9	–	[illegible]	[illegible]	0.1	7.5	164.9
Per cent	73.5%	11.[illegible]	4.4	5.[illegible]	–	.[illegible]	.[illegible]%	–	4.5%	100.0%

*There are small discrepancies between different sources of information collected.

	Congo Kinshasa (Belga)	Uganda (Sportsman)	U.K.	Belgium Luxmbrg.	[illegible]	France	U.S.A.	Holland	Burundi	TOTAL
1969 I	46.7	2[illegible].6	[illegible]	[illegible].6		.[illegible]				
II	35.2	33.[illegible]	10.[illegible]	[illegible]		.6		–	–	77.8
III	46.8	38.6	[illegible]	[illegible]	[illegible]	–		–		8[illegible]
IV	64.4	62.4**	8.[illegible]	[illegible]	–	(0.9)	–	–	–	59.7
									–	137.2
										*388.0
Total	193.0	160.6	[illegible].9	7.[illegible]	[illegible]	[illegible]	–	–	–	390.5
Per cent	49.4%	41.2%	[illegible]	2.0%	0.8%	0.[illegible]%		–	–	100.0%

**This figure is largely due to re-exportation. The Uganda consumer tax was increased in July 1969 and "Sportsman" cost 4 times Rwanda price.

Totals of all imports other than Congo Kinshasa (Belga) and Uganda (mostly Sportsman):-

1968: 25.3 Tons Net = 15.2%　　　　1969: 36.9 Tons Net = 9.4%

Cigarettes Imported 1969 (Burundi contraband incentive increased November 1968)	Tons Net	Tons Net/ Million	Millions Imported	Approximate Millions Re-exported	Real Rwanda Consumption
"Belga" (Congo)	193	1.2	160	30	130
Uganda (Mostly "Sportsman")	160	1.4(?)	107(?)	70	50
All other	37	1.5(?)	25(?)	5	20
Totals here	390		293(?)	105	200 millions
Statistics Office Totals	390.5	1.51	257.7***		

***The Statistics Office makes this 257.7 and gives Tons "Brut" = 1.05 x Tons Net.

20 "Belga" cigarettes with pack and cellophane weigh 24.0 gr. 1 million = 1.20 T.Net.
20 "Sportsman" " " " " " " 26.4 gr. 1 " = 1.32 T.Net.

[illegible]

1. [illegible] they [illegible] they stop [illegible] tobacco [illegible] leaving [illegible]

2. [illegible] are getting [illegible] contain.

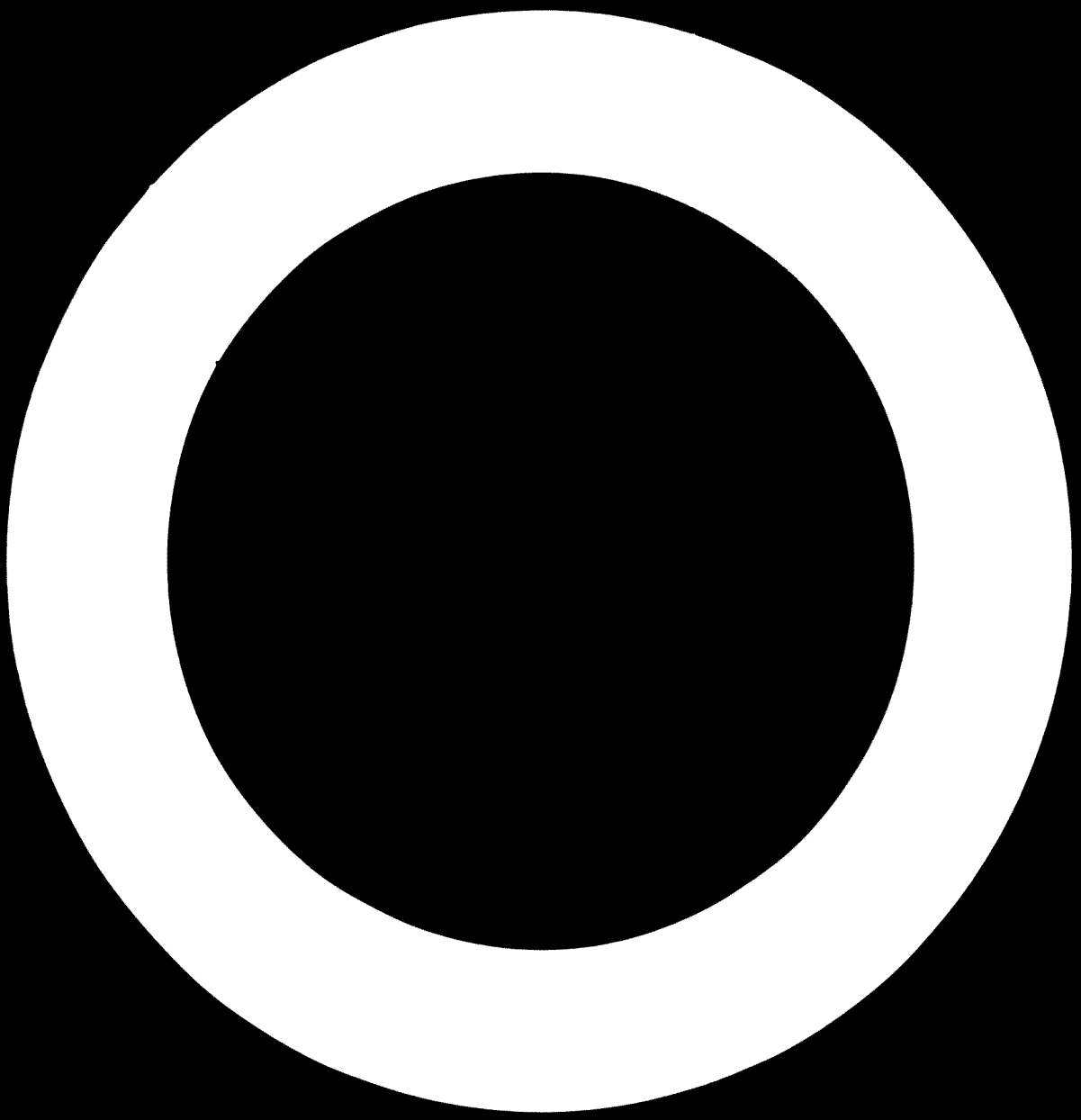
3. They like the [illegible] resulting [illegible] and with this [illegible] before reaching the customer.

4. Another [illegible] easily [illegible] packet [illegible]

5. The keen pipe smoker, reading this, will want [illegible] their pipes, but experience [illegible] that smokers [illegible] are [illegible] ally **conservative** and proud of their **traditions**. "The customer is always right".

6. These traditional tastes are expected to die out but only because more and more of the rising generation start their smoking with mild cigarettes. To them the **black tobacco is not acceptable** either in cigarettes or in a pipe.

An importer of cigarettes intended to launch a brand of cut tobacco in packets, until the market economist and blender made a market test on 200 smokers that resulted in these conclusions.



improve the appearance of [illegible] add to the responsibilities [illegible] cultivation. Burundi research showed that [illegible] leaves good enough for wrappers, making the crop excessively expensive as cigar filler. Moreover in the Nyanza "peasant" cultivation, in which crops are not being "imposed", farmers may be reluctant to grow this difficult variety that gives a relatively small yield, of which the proportion good enough for wrapper [illegible] nes whether it makes a profit or loss. They make good money selling traditional leaf to pipe smokers.

7. Kwasa cigars sold in Europe as a novelty have to compete with the new generation of cheap "little cigars" made on high-speed cigarette-type cigarillo machines using "reconstituted tobacco sheet" as binder and/or wrapper. Moreover changed moisture content, loss of aroma, or other damage in tropical transport are risks liable to frighten off European commercial buyers. The number of "old hands" from the Congo, now in Belgium who smoke Kwasa cigars for sentimental reasons hardly make a commercial market.

CONCLUSIONS: Sumatra leaf for Kwasa cigars could be marginal by-product of the cigarette leaf cultivation [illegible] and cigar exports might be revived into the Congo if the postal service [illegible] used to depend, if revived.

RE-DRYING INSTALLATION - COST ESTIMATE

Capacity:

150 kg/hour.

Duty:

For 120 million cigarettes/year, [illegible] per cent x [illegible] tons/year
60 per cent Rainy season 69 tons/150 kg/h = 460 hours x [illegible] hrs
40 per cent Dry season 46 tons/150 kg/h = 307 hours [illegible]

Building area:

Receiving store	10m x 20m	200 m²
Grading and stick hanging	10m x 30m	300 "
Machine 5m x 17m	10m x 20m	200 "
Bale forming and pressing	10m x 10m	100 "
Total machine building	20m x 40m	800 m²

Tobacco seeing store:

2 years stock is charged to the cigarette factory.

FIXED CAPITAL

Buildings:

800m² @ $50.-/m² — $ 40,000.-

Land:

2,500m² @ $8.-/m² — 20,000.-

Plant:

Re-drying machine	$[illegible],000.	
Baling press	[illegible],000.-	
Boiler installation	9,000.	
Shipping	[illegible],200.	
Installing engineer	1,500.-	
Electrical, Steam, Water, fittings and casting [illegible]	14,300.-	55,500.-

TOTAL FIXED CAPITAL — $115,500.-

WORKING CAPITAL — Months:

Direct labour: including all allowances, social security etc. 1

2 foremen	Pr500./day	1,000
4 graders	Pr300./day	1,200
30 general	Pr100./day	3,000
1 fitter	Pr500./day	500
	5,700/day x 30 = Pr171,000./month:	$ 1,710.-

Materials: Months:

Covering for bales $[illegible] ha... x [illegible]/ton x 30/month: 1. 1. $ 600.-

Manufacturing overheads: Months:

Spare parts, repairs and renewals,	[illegible]	$1,000.-	
Fuel oil: 1kg steam/kg leaf x 0.1 litre/kg of steam x 26,200kg/month x Fr12. = Fr31,000/month	3	930.-	
Electricity: 1,000kWh/day Fr4.- x 22	1	90.-	
Water: 60m³/month Fr15.- = Fr900.-		10.-	
Local purchases and contingencies		160.-	$ 2,190.-

Administration:

The general manager will be a foreign specialist initially and a counterpart after 1 year.	1		200.-
TOTAL WORKING CAPITAL			5,700.-
TOTAL CAPITAL		$1[illegible],000.-	$120,000.-

Amortising $55,500 in 10 years and $40,000 in 20 years = $7,550/year. Fr755,000/115,000kg/year = **Fr6.5/kg of dried leaf.**

Operating costs per month: $1,710.- labour, $600.- materials, $80.- spares, $570.- fuel, electrical, etc., $200.- administration = $3,160.- Fr316,000/26,400kg per 22-day month = **Fr12.-/kg of dried leaf.**

BASIS: 1,000kg/h of dried leaf	M.DUKAT			INEAC		PAO - ISABU - BURUNDI				TARA-CONGO	RWANDA PROJECT		1 OF FAR-MER IN
	Hours/ Ton	Men	Fr 30/day Fr/kg	Man-Days/ha	Fr 30/day Fr/kg	Man-Days/ha	V.C. B.Fr/kg	ISABU B.Fr/kg	FAO B.Fr/kg	R.Fr/kg	R.Fr/kg	Ref. No.	Fr/kg
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Seed beds	-	-	-	81	2.5	-	3.94	[illegible]	2.85	-	[illegible]	[illegible]	[illegible]
Seed bed chemicals	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-
Field labour	-	-	-	225	[illegible]	-	5.54	[illegible]	17.12	-	13.2	[illegible]	[illegible]
Field chemicals	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Amortise tools	-	-	-	-	-	-	-	-	[illegible]	-	[illegible]	-	[illegible]
Harvest	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]
Harvest transport	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]
Buying	[illegible]	[illegible]	0.24	-	-	-	-	-	-	-	[illegible]	[illegible]	-
Sticks for leaf	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	-
Curing labour	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	-
Curing other costs	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]
Grading	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	-	-
Farm baling labour	-	-	-	[illegible]	1.4	[illegible]	[illegible]	[illegible]	.81	-	[illegible]	[illegible]	[illegible]
Farm baling material	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	-
Transport	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	-
Final grading	16.67	2	0.33	-	-	-	-	-	-	-	[illegible]	[illegible]	-
Re-drying labour	20.9	7	[illegible]	-	-	-	-	-	-	-	[illegible]	[illegible]	-
Re-drying supervision	7.9	2	[illegible]	-	-	-	-	-	-	-	[illegible]	[illegible]	-
Re-drying other	-	-	-	-	-	-	-	-	-	-	[illegible]	[illegible]	-
Administration	-	-	-	-	-	-	-	[illegible]	[illegible]	-	[illegible]	[illegible]	-
Interest	-	-	-	-	-	-	-	-	[illegible]	-	[illegible]	[illegible]	-
Amortise c.barns	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	-

BASIS: 1,000kg/ha of dried leaf	M. DUKAT Hours/Ton	Men	Fr/day Fr/kg	INTAP Man-Days/ha	Fr/day Fr/kg	[illegible] Man-Days/ha	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	2	3	4	[illegible]				[illegible]					[illegible]
Amortise grading building	-	-	-	-	-	-	-	-	[illegible]	-	[illegible]	[illegible]	-
Amortise re-drying installation	-	-	-	-	-	-	-	-	-	-	[illegible]	[illegible]	-
General expenses	-	-	-	-	-	-	[illegible]			-	[illegible]	-	-
Infrastructure	-	-	-	-	-	-	[illegible]			-	[illegible]	-	-
Vehicles	-	-	-	-	-	-	-			-	[illegible]	-	-
Selling costs	-	-	-	-	-	-	[illegible]		[illegible]	-	[illegible]	-	-
	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]	-	[illegible]	-	[illegible]

A.S.B. = AID SPECIFIQUE BELGE

LIST OF PLANT AND MACHINERY FOR A FACTORY MA[illegible] [illegible]
WITH SPACE AND RESERVE MACHINES [illegible] [illegible] MILLION/DAY

[illegible] working days/year: [illegible]

	Cost [illegible]	Operators for 1-Maker	2	3
[illegible] Leaf moistening cabinet 150 kg/h [illegible]	$ [illegible]			
[illegible] Strip moistening cylinder [illegible].8m x [illegible]m	[illegible]			
[illegible] Stem steaming cylinder [illegible].[illegible]5m x [illegible]m	[illegible]			
[illegible] Stem Flattener 50 kg/h (150 kg/h capacity)	[illegible]			
1 40cm Strip Cutting machine [illegible].6mm cut	[illegible]			
1 40cm Stem Cutting machine [illegible].15mm cut	[illegible]			
[illegible] Knife Grinder	[illegible]			
Steam heated Cut tobacco dryer [illegible]	[illegible]			
[illegible] Cigarette making machines**	[illegible]			
1 Cigarette Packing machine [illegible] type [illegible]***	[illegible]			
1 Cellophane Wrapping machine 125 packs min.***	[illegible]			
[illegible] Weighing machines	[illegible]			
Contingencies	[illegible]	3	[illegible]	[illegible]
Total for main plant items:	$[illegible]	[illegible]	26	3[illegible]
Labour for hand stemming		[illegible]	[illegible]	[illegible]
		[illegible]	[illegible]	[illegible]

Steam Boiler Installation	$ [illegible]	
Laboratory Equipment and Moisture Control instruments	[illegible]	
Electric cables, switch fuses, etc.	[illegible]	
Steam, water and fire protection, pipes and fittings	[illegible]	
Maintenance tools	[illegible]	
Transport equipment	[illegible]	
Shipping approximately 30 tons at $100./ton	[illegible]	
Locally fabricated elevated water tank	[illegible]	
Locally made tables, trolleys, tobacco boxes, racks, etc.	[illegible]	
Installing engineer	[illegible]	
Contingencies	[illegible],000	4[illegible],000
		$21[illegible],000

**One Cigarette Making machine would be sufficient until at least half to ½ million cigarettes/day capacity were reached.

***For fully 240 million/year, a third Maker, a second Packer and a second Cellowrapper would be required, adding $64,000.-

[illegible] MILLION/MONTH

[illegible] — wir[illegible] kg x [illegible] = Fr56.-
Fr56.- kg x [illegible] Fr[illegible] Fr66.- = $0.66/kg

[illegible] MAT[illegible]

	$ per year	$ per month	Months stock	$ Stock
Tobacco				
[illegible]	[illegible]		24	190,000.-
Packet [illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	1,400.
Cigarette paper				
[illegible] @ $[illegible]	[illegible]	[illegible]	6	4,800.
Cellophane				
[illegible] @ $1.[illegible] kg	[illegible]	400.-	6	2,400.-
Adhesives and [illegible]	[illegible]	[illegible]	6	600.-
Parcel paper				
20,000 x [illegible] parcel [illegible] kg/month @ [illegible] kg	[illegible]	[illegible]	6	1,500.-
Corrugated cartons				
[illegible]/month each for [illegible] cigarettes [illegible] @ $[illegible]	[illegible]	500.-	6	3,000.-
Total Direct Materials	$1[illegible],300.	$[illegible] 690.-		$206.700.-

SUPPLIES

	$ per year	$ per month	Months stock	$ Stock
Spare parts 4% of $1[illegible],000.	$ [illegible],000.	$ 550.-	12	$ 7,000.-
Maintenance materials $[illegible]/year				
Hand tools $[illegible]/year				
Office supplies $[illegible]/year	600.-	50.-	2	100.-
	$ [illegible],600.-	$ 600.-		$ 7,10[illegible].-

Fuel, Light, Power and Water

	$ per year	$ per month
200 kg/h steam, 20 l/h oil x [illegible],000h/yr @ $0.12/litre	$ 4,800.-	$ 400.-
30kW x 2,000 h/yr @ $0.04/kWh	2,400.	200.-
400m³ feed and 1600m³ washing @ $0.15	300.-	25.-
Contingencies	900.-	75.-
	$ 8,400.-	$ 700.-

CAPITAL REQUIRED TO MANUFACTURE 120 MILLION CIGARETTES/YEAR (½ MILLION/8-HOUR DAY)
WITH SPACE AND RESERVE MACHINES FOR ULTIMATE 240 MILLION/YEAR

FIXED CAPITAL

Buildings:

350m² Factory with 1 month's leaf stock, $40./m²		$ 14,000
Land: 1,500m² @ $8.-/m²		12,000
Plant:		
Imported plant items as listed above	$170,000	
Imported Steam Boiler Installation	9,000	
Imported Laboratory equipment and moisture control instruments	1,000	
Imported Electrical cables, switchgear, etc.	3,000	
Imported Steam and water pipe and fittings	3,000	
Imported Maintenance tools	1,000	
Imported Transport equipment	5,000	
Shipping approximate 30 tons @ $100.-/ton	3,000	
Locally fabricated elevated water tank	5,000	
Locally made tables, trolleys, tobacco boxes, racks, etc.	8,000	
Installing engineer	6,000	
Contingencies	4,000	$217,000
TOTAL FIXED CAPITAL		$243,000

WORKING CAPITAL

Direct Materials:

Tobacco: 24 months'	190,000	
Paper, cellophane, etc. as listed 6 months	16,700	$206,700

Direct Labour: (including all allowances and "charges sociales")

3 @ RwFr500 = Fr1,500/day
45 @ RwFr300 = Fr13,500/day
6 @ RwFr100 = Fr600/day Fr15,600 x 30 = 468,000/100 = 4,680 $ 4,680

Manufacturing Overheads:	Months		
Spare parts, Repares and Renewals	12	7,000	
Maintenance materials, tools, etc.	2	100	
Fuel oil, $400.-, Electricity, $200.-, Water, etc. $100.-	1	700	
Truck maintenance and fuel	1	100	
Indirect labour: Superintendent Fr50,000 Account't 20,000	1	700	
Phone, cables, postage, stationery, etc.	1	40	
Rates and taxes on land and buildings	1	200	
Amortising $230,000 in 8 years	1	2,300	
Interest: 8% on $550,000	1	3,700	
Insurance: 3 per mille on $440,000	1	110	$ 14,950

ANNEX X
Page

	Months		
Administration: salaries, expenses, housing, insurance	1:		
Director General (Possible foreign aid first year)		3,000	
Commercial Manager		2,200	
Technical Manager		2,200	
Secretary		300	$ 7,700
Contingencies 5% approximately			$ 12,970
Sales Revenue receivable: ½ million packs Pr12.- x	1:		$ 60,000
TOTAL WORKING CAPITAL			$307,000
TOTAL CAPITAL			$550,000

OPERATING EXPENSES AND [illegible]

[illegible]

[illegible]

Direct Materials:

Tobacco [illegible] kg at [illegible]
Other materials

Direct Labour:

Manufacturing Overheads:

Spare parts, renewals and repairs
Maintenance materials, tools etc.
Fuel, electricity, water
Truck maintenance and fuel
Indirect labour
Phone, cables, postages, stationery
Rates and taxes on land and buildings
Amortizing $230,000 in [illegible] years
Interest at [illegible] on $[illegible]
Insurance at 3 per mille on [illegible]

Administration:

Ex-factory cost of [illegible] cigarettes — $ 1,700.-
Ex-factory cost of [illegible] cigarettes = [illegible] = Fr[illegible]
Bank charges at [illegible]
Tax
[illegible] p.a. yield on [illegible] invested

Publicity and selling expenses

Retailer's 15% mark-up
Retail price per 1,000 cigarettes
Retail price per 20's pack: Fr 11.7½ say Fr12.-/20's pack

N.B. This is for operating at 10[illegible]% capacity of 1 cigarette making machine.

CAPITAL [illegible] :-

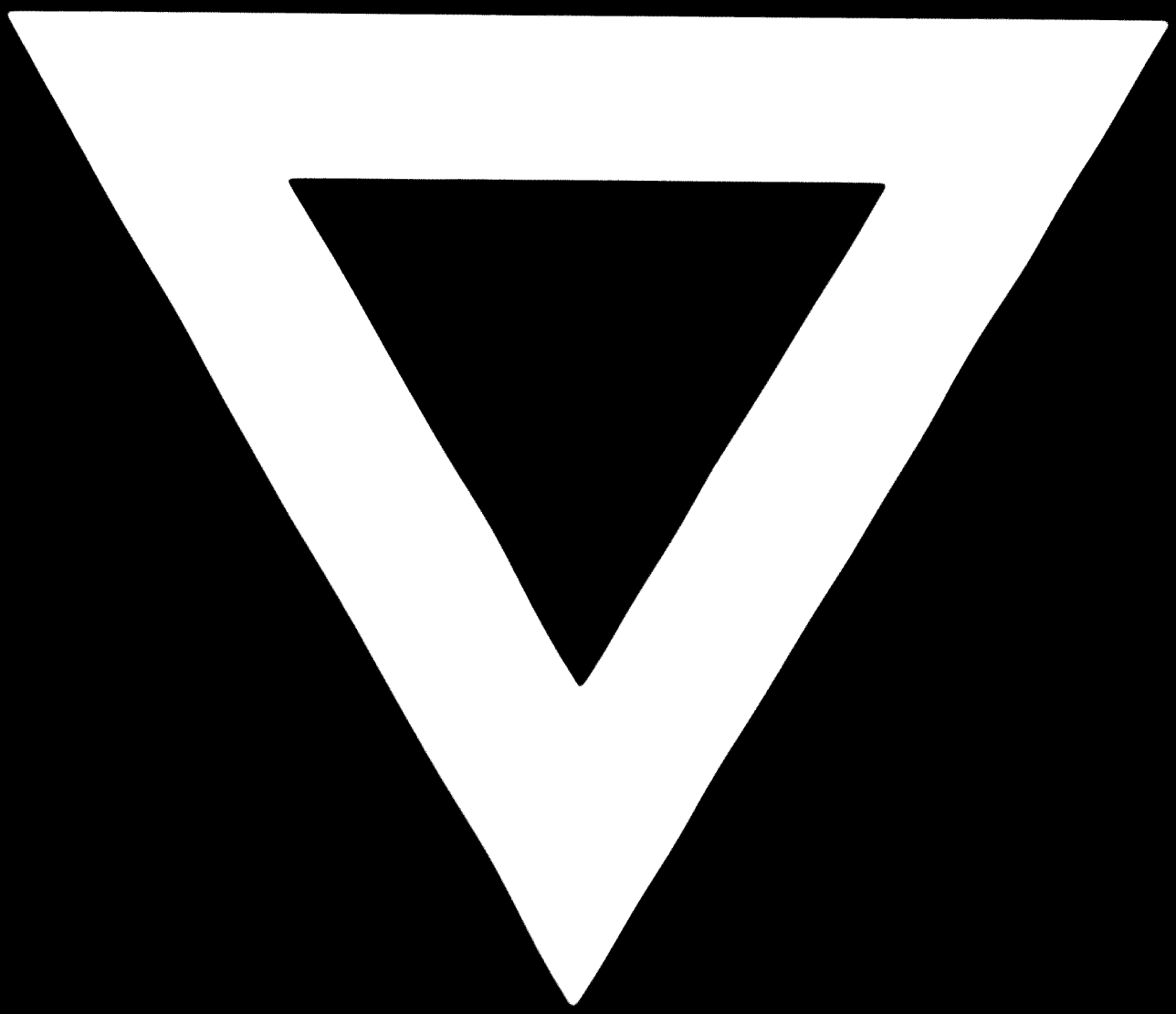
				[illegible]	[illegible]	[illegible] millions/month
[illegible]		[illegible]		[illegible]		[illegible]
[illegible]		[illegible]		[illegible]		[illegible]
[illegible]		[illegible]		[illegible]		[illegible]
[illegible]		[illegible]		[illegible]		[illegible]
[illegible]			[illegible]		[illegible]	
Direct Labour	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	413,400
[illegible] :		[illegible]		[illegible]		[illegible]
Spares						
[illegible]	[illegible]		[illegible]		[illegible]	
Fuel [illegible]					[illegible]	
[illegible]	[illegible]		[illegible]		[illegible]	
[illegible]			[illegible]		[illegible]	
PTT etc.					[illegible]	
[illegible]			[illegible]		[illegible]	
[illegible]					[illegible]	
Interest	[illegible]		[illegible]		[illegible]	
Insurance	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible],120
Administration		[illegible]		[illegible]		7,700
Contingencies		[illegible]		[illegible]		[illegible],700
Sales revenue [illegible]		[illegible]		[illegible]		120,000
Total fixed [illegible] :		[illegible]		[illegible]		[illegible]

OPERATING COSTS PER [illegible] AT [illegible]:

Tobacco					
Other material					
Labour Skilled					
Semi-					
Unskilled					
Manufacturing Overheads:					
Spare parts					
Tools					
Fuel, Electr, Water					
Truck					
Indirect Labour					
Office expenses					
Land and Bldgs taxes					
Amortisation					
Interest					
Insurance					
Administration					13,390
Ex-factory cost					
" cost/1,000 pcs.					

Ex-factory cost/1,000	[a]				
% bank charges					
Tax					
12% yield on capital					
% publicity and selling					
13% retailer's commission					
Price for 50 packs of 20					
Price for 20's pack	Fr 14.3	14.4		Fr 11.-	

Clearly, it is important to reach a capacity of 120 million/year as quickly as possible either by co-operation with Burundi, or by inviting the co-operation of Tabacongo to manufacture the "Belga Legere" cigarettes. This second alternative would probably realise factory operation two years earlier than as an independent project dependent on the tobacco cultivation project.



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