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PROPOSAL CONCERNING THE SETTING UP OF A PLANT FOR CERAMICS PRODUCTION IN CAMEROON

prepared by the

Economic Commission for Africa

id.70-5608

SUMMARY

There is a considerable potential market in Cameroon for ceramic goods, and this is likely to expand. In 1967, imports of ceramics amounted to 1,800 tonnes and the rate of growth of consumption was of the order of 5 or 6 per cent annually. A consumption of 2,700 tonnes can be forecast for 1975, and it is estimated that consumption in 1980 will be about 3,700 tonnes. In addition there would appear to be a good market for ceramic products in neighbouring countries (People's Republic of the Congo, Gabon, Central African Republic, Chad), which imported 2,300 tonnes of ceramic goods in 1967.

Deposits of the main raw materials exist in Cameroon, and fuels and electric power are also available. A feasibility study indicates that a ceramics factory in Cameroon would be perfectly viable and could orient its production either to the domestic market, with an initial output of 2,700 tonnes annually, or towards exports to the neighbouring countries, with an initial production of 3,500 tonnes.

The investment climate in the Ivory Coast is quite favourable: there is provision for exemption from customs duties on imported equipment, spare parts and materials, and tax exemption for the first five years of operation. It should also be possible to obtain further advantages, since the proposed ceramics factory would be the first one to be set up in Cameroon.

The profits picture and the break-even point, using two basic alternative hypotheses, can be calculated as follows, taking into account initial capacity and capacity in 1985:

"Pro-forma" statement of profits during first year of normal production

In thousands of US dollars

Alternative	A1		A2		B1		B2	
Annual output in tonnes	2,700		5,000		3,500		6,500	
	$1,000	Index	$1,000	Index	$1,000	Index	$1,000	Index
Sales (tax-free)	951	1,000	1,602	1,000	1,183	1,000	2,021	1,000
(a) Raw materials	134	141	259	162	174	147	341	169
(b) Labour	98	103	144	90	114	96	171	84
(c) General costs:								
Fuels	37		70		49		92	
Electric power	25		39		30		47	
Water	2		3		2		4	
Amortization	152		256		192		336	
Insurance	18		30		22		38	
Indirect labour	31		39		33		42	
Indirect materials	44		74		55		96	
Maintenance	29		50		37		64	
Total	338	355	561	350	420	355	719	356
Production costs	570	599	964	602	708	599	1,231	609
Net profits	381	401	638	398	475	401	790	391
General costs and management expenses	29	31	47	29	36	30	47	23
Sales costs	19	20	21	13	21	18	21	11
Total	48	51	68	42	57	48	68	34
Operating profit	333	350	570	356	418	353	722	357
Interest (long-term loans)	53	56	90	56	66	56	114	56
Interest (short-term loans)	17	18	30	19	22	18	38	19
Total	70	74	120	75	88	74	152	75
Net income before taxation	263	276	450	281	330	279	570	282
Net income before taxation, as a percentage of sales	28%		28%		28%		28%	
Net income before taxation, as a percentage of overall capital investment	15%		15%		15%		15%	

Break-even point for sales

In thousands of US dollars

Alternative	A1	A2	B1	B2
Annual output in tonnes	2,700	5,000	3,500	6,500
Tax-free sales	951	1,602	1,183	2,021
Fixed costs:				
General and management costs	29	47	36	47
Sales costs	19	21	21	21
Indirect labour	31	39	33	42
20% of direct labour costs	20	29	23	34
Interest on long-term loans	53	90	66	114
Interest on short-term loans	17	30	22	38
Amortization	152	256	192	336
Insurance	18	30	22	38
Total	339	542	415	670
Variable costs:				
Raw materials	134	259	174	341
80% of direct labour costs	78	115	91	137
Indirect material	44	74	55	96
Maintenance	29	50	37	64
Fuels	37	70	49	92
Electric power	25	39	30	47
Water	2	3	2	4
Total	349	610	438	781
Sales	951 100%	1,602 100%	1,183 100%	2,021 100%
Less variable costs	349 36.70%	610 38.08%	438 37.02%	781 38.64%
Return (before deduction of fixed costs)	602 63.30%	992 61.92%	745 62.98%	240 61.36%
Less fixed costs	339	542	415	670
Net income before taxation	263	450	330	570
$\frac{\text{Fixed costs}}{\text{Return as \%}}$ = Break-even point	535.5	875.3	658.9	1,091.9
Sales at break-even point	535.5	875.3	658.9	1,091.9
Variable costs at break-even point	196.5	333.3	243.9	421.9
Fixed costs	339.0	542.0	415.0	670.0
Profits	-	-	-	-

The output considered in this report is 80 per cent of capacity, taking into account market fluctuations. If the market stays at a constant favourable level the factory will be able to operate at 96 per cent of capacity: that is to say, it could increase production by 20 per cent. In this case, the net income would be as follows (in thousands of US dollars):

Alternative	A1	A2	A3	A4
Output	3,240	6,000	4,200	7,800
Sales	1,141.2	1,922.4	1,419.6	2,425.2
Less sales at break-even point	535.5	875.3	658.9	1,091.9
	605.7	1,047.1	760.7	1,333.3
Less variable costs (proportionate)	222.3	398.7	281.6	515.2
Net income	383.4	648.4	479.1	818.1
Net income (previous table)	263.0	450.0	330.0	570.0
Difference	120.4	198.4	149.1	248.1

Note: Cameroon imports considerable quantities of refractory products: in 1966 it imported 1,200 tonnes and in 1967 1,700 tonnes. Between 60 and 80 per cent of the requirements relate to refractory clays which could form a secondary product line in any ceramics factory and make production more profitable. This possibility could be considered, bearing in mind the fact that wastes from clay utilized as raw material for the manufacture of ceramic goods represent a top-quality raw material for refractory products, and that the utilization of wastes will have consequences for the economy of the enterprise.

Basic data

Location of the factory:	Cameroon, preferably in the neighboorhood of Douala or Yaoundé
Initial production:	Two alternatives: 2,700 or 3,500 tonnes/year
Planned expansion:	Total capacity anticipated in 1985: 5,000 or 6,500 t/year
Total investment:	For initial capacity: US$1,750,000 or 2.2 million For final capacity: US$3 million or 3.8 million
Employment:	Initial capacity: 135 or 159 workers Final capacity: 200 or 235 workers
Turnover:	Initial capacity: US$950,000 or 1.2 million Final capacity: US$1,590,000 or 2 million
Added value:	Depending on capacity, 59-63 per cent
Action schedule:	1970-1972: geological studies 1972-1973: geological studies 1974-1975: Construction of the factory 1976- : Start-up

Introduction

In West Cameroon, around Bamenda, there are kaolin clays which bake white.

There are also several deposits of feldspar and pure sand in Cameroon, and for this reason the question of the national production of ceramics should be studied with a view to making use of domestic raw materials, improving the balance of payments by reducing imports and exporting locally manufactured ceramics to neighbouring countries, and creating new jobs. Finally, the market for ceramics in Cameroon is developing and has already reached a point which justifies a proposal for the establishment of a ceramics factory.

The products which it is proposed to manufacture, classified according to the Brussels Tariff Nomenclature (BTN) and the Standard International Trade Classification, (SITC), are in particular:

BTN	SITC	
69.07	662.4.4	Unglazed ceramic setts, flags and tiles.
69.08	662.4.5	Glazed ceramic setts, flags and tiles.
69.11	666.4	Table-ware and household articles of porcelain or china.
69.12	666.5	Table-ware and household articles of other ceramic materials.
69.13	666.6	Statuettes and other ornaments, and articles of furniture.
69.10	812.2	Sinks, wash basins, bidets, and like sanitary fittings of ceramic materials.

The factory can also be expected to produce equipment and articles for chemical and technical uses ceramic insulators, tumblers and bottles for the pharmaceutical industry.

The proposed factory will be established in the neighbourhood of Douala or Yaoundé and will use washed kaolin and white-baking clay from Bamenda. It will be necessary to establish a plant for washing the kaolin directly at the deposits. The washing capacity of this plant will exceed the requirements of the ceramics factory and it will supply washed kaolin for other consumer industries, such as the pharmaceutical industry, the chemical industry, and the insecticides, rubber and paper industries. Refractory bricks of the highest quality can be produced from kaolin of the lowest quality. This report will not deal with the kaolin washing plant, however, but only with the ceramics factory.

The products considered in this report are the following:

(i) Stoneware: stoneware is manufactured from suitable clays whose properties between the softening point and the melting point make a great difference to the baking process. It is possible to make a clay which is not suitable for the manufacture of stoneware into one which is suitable by adding flux such as nephelinic syenite or feldspar to it. Stoneware always develops some colour during baking. Typical stoneware products include: flags, some wall tiles, some table-ware, and products for industrial and agricultural uses.

(ii) Pressed earthenware, glazed pottery or porcelain articles prepared by the dry or wet methods. These products include wall tiles, some table-ware and some products for industrial uses. The raw materials used are: white-baking clay with suitable properties for forming, white-baking kaolin, feldspar, nephelinic syenite, pure sand or ground quartz, and limestone.

(iii) Earthenware, glazed pottery or porcelain articles manufactured by casting slip in plaster moulds. Products made in this way include some table-ware, sanitary ceramic ware, and artistic and ornamental articles. The raw materials used are the same as for (ii).

The present situation

In Cameroon, present ceramic requirements are filled entirely by imports and by craft-type production of pottery from red-baking clay. There is as yet no industrial production of ceramics in the central region of Africa.

Imports of ceramics into Central Africa, according to the foreign trade statistics, were as follows in tonnes and US dollars:

Imports of ceramics in tonnes

	Cameroon	Congo (People's Rep.)	Congo (Dem. Rep.)	Gabon	Central African Rep.	Chad
1960	383	629		191	191	142
1961	893	541	No data	261	126	185
1962	809	715		363	262	258
1963	No data	665	1,931	414	283	341
1964	1,488	455	2,665	335	317	278
1965	No data	372	1,693	288	187	195
1966	1,223	451		624	165	223
1967	1,812	1,196	No data	665	180	231

Imports of ceramics in thousands of US dollars

	Cameroon	Congo (People's Rep.)	Congo (Dem. Rep.)	Gabon	Central African Rep.	Chad
1960	140	196		76	73	81
1961	No data	191	No data	109	53	137
1962	No data	244		137	98	123
1963	No data	215	676	155	98	140
1964	432	159	807	129	102	169
1965	No data	151	70	122	80	125
1966	365	197	No datta	259	69	129
1967	578	367		262	88	115

There are no statistics on craft-type production of pottery, but it is estimated that production is in the region of 500–1,000 tonnes/year.

Projected future demand

Imports of ceramics into Cameroon are increasing by at least 6.5–7 per cent annually. Consumption of sanitary ceramic ware is increasing more rapidly, namely by 15–22 per cent annually, while consumption of wall and flooring tiles and of pottery are increasing annually by 5–6 per cent. These rates of growth may be regarded as a basis for a conservative estimate of future consumption.

The other criteria used in a report of the Economic Commission for Africa (E/CN.14/INR/173) are more optimistic. For the purpose of this proposal, let us accept an annual rate of growth in ceramics as a whole of 6 per cent as reasonably certain. Let us compare two alternatives: the first based on the assumption that domestic needs are to be met and the second on the assumption that the production will also supply 25 per cent of the demand for ceramics in Gabon, Chad, the Central African Republic and the People's Republic of the Congo.

On this basis, ceramics consumption can be projected as follows:

		1967	1970	1975	1980
Ceramics consumption in tonnes		1,812	2,000	2,700	3,700
Made up of:					
Sanitary ware		281	360	640	1,030
Pottery		201	230	290	370
Tiles		1,330	1,350	1,700	2,200
Other goods			60	70	100
Rate of growth of ceramics consumption	1970/75		6.2%		
	1975/80			6.5%	
	1970/80		6.3%		
	1967/80	5.6%			

As the factory cannot begin production earlier than 1975, the capacity of the plant, under alternative A, must be fixed at 2,700 tonnes/year, with the possibility of expansion up to a capacity of 5,000 tonnes/year in 1985; under alternative B, capacity must be fixed at 3,500 tonnes/year in 1975 and 6,500 tonnes/year in 1985. The alternatives proposed are therefore:

	Alternative A[1]		Alternative B[2]	
Proposed capacity in t/year	2,700	5,000	3,500	6,500
Made up of production of:				
Tiles	1,700	2,800	2,200	3,400
Pottery	290	470	350	600
Sanitary ware	640	1,600	850	2,200
Other ceramic goods	70	130	100	300

"Other ceramic goods" include electrical insulators, pots for the pharmaceutical industry and cosmetics, and similar products.

Raw materials

The following raw materials are used in the manufacture of ceramic articles:

Stoneware:

Kaolin (ordinary quality),	costing about 21 dollars per tonne
Clay,	costing about 14 dollars per tonne
Pegmatite or nephelinic syenite,	costing about 17-20 dollars per tonne
Quartz,	costing about 18-20 dollars per tonne
Metallic colouring,	costing about 200-300 dollars per tonne

Fine-quality ceramics:

Kaolin (superior quality or good quality),	costing about 60 dollars per tonne
Pegmatite,	costing about 28 dollars per tonne
Quartz,	costing about 20 dollars per tonne
Glazes and colouring,	costing about 300 dollars per tonne

1/ Alternative A: to meet the needs of Cameroon only.

2/ Alternative B: to meet the needs of Cameroon and 25 per cent of the needs of Gabon, Chad, the Central African Republic and the People's Republic of the Congo.

Gypsum, costing about 40 dollars per tonne

Fire-clay, costing about 100 dollars per tonne

The usual composition, the fuel and power requirements and productivity will be as follows:

Stoneware tiles or flags - stoneware household articles

Quartz	10% at $ 18 per tonne	= $ 1.8
Pegmatite or syenite	30% at $ 20 per tonne	= $ 6.0
Kaolin or clay	57% at $ 21 per tonne	= $12.0
Colouring and glaze	3% at $300 per tonne	= $ 9.0
		28.8 $/t

Unglazed tiles: 80 kWh/t; productivity 50 t/year per employee; 2,000 kcal/kg

Glazed tiles: 100 kWh/t; productivity 25 t/year per employee; 2,500 kcal/kg

Table-ware: 120 kWh/t; productivity 10 t/year per employee; 3,500 kcal/kg

Fine-quality ceramics

Quartz	10% at $ 20/t	= $ 2.00
Pegmatite	30% at $ 28/t	= $ 8.40
Kaolin	45% at $ 60/t	= $27.00
Clay	10% at $ 20/t	= $ 2.00
Glaze and colouring	5% at $300/t	= $15.00
	Total	= 54.40 $/t

In addition, per tonne of table-ware, sanitary ware, etc..

10% gypsum at	$ 40/t	= $4.00
7% fire-clay at	$100/t	= $ 7.00/t
	Total	= 11.00 $/t

SITC	Electric power	Fuel	Productivity
662.4	110 kWh/t	2,800 kcal/kg	20 t/year per worker
663.9	150 "	3,300 "	5 " "
666	150 "	3,800 "	10 " "
812.2	120 "	3,400 "	20 " "

Electric power requirements for the proposed manufacturing programme will be 100 kWh/t.

Thermic requirements will be: for alternative A: 2,910 kcal/kg;
for alternative B: 3,060 kcal/kg.

Productivity will be: for alternative A: 28 t/year per worker;
for alternative B: 26 t/year per worker.

Average cost of raw materials will be: for initial capacity: $50/tonne;
for final capacity: $52/tonne.

Raw material, energy and fuel requirements

		A1	A2	B1	B2	Unit price in dollars/tonne
Ordinary quartz	t/year	120	197	155	249	18
Pegmatite or nephelinic syenite	"	360	592	464	746	20
Ordinary kaolin and plastic clay	"	682	1,126	884	1,415	21
Glazed and metallic colouring	"	35	59	45	73	300
Pure quartz	"	165	328	212	434	20
Pegmatite	"	490	983	638	1,303	28
Washed kaolin	"	737	1,474	957	1,954	60
Fine clay	"	164	327	213	435	20
Glaze, metallic colouring and liquefying materials	"	82	164	106	216	300
Fine gypsum	"	100	220	130	310	40
Fire-clay	"	70	154	91	217	100
Electric power	millions of kWh/year ($/1,000 per kWh)	0.57 (44)	1.06 (37)	0.74 (41)	1.39 (34)	34-44$ kWh
Heavy fuel oil	t/year	1,100	2,070	1,430	2,700	34
Process-quality fresh water	thousands of m^3/year	16	30	21	39	0.1 $/$m^3$
Workers		135	200	159	232	

A breakdown of ceramics manufacturing costs is to be found in annex I.

Recapitulation of ceramics manufacturing costs in thousands of US dollars

		Alternative A		Alternative B	
Production capacity	t/year	2,700	5,000	3,500	6,500
Amortization	thousands of $/year	152	256	192	336
Wages and salaries	"	136	193	157	216
Social welfare costs	"	41	58	47	65
Profits	"	263	450	330	570
Added value		592	957	726	1,187
Maintenance	"	73	124	92	160
Interest on loans	"	53	90	66	114
Insurance and miscellaneous costs	"	18	30	22	38
Fuels	"	37	70	49	92
Electricity	"	25	39	30	47
Water	"	2	3	2	4
Raw materials	"	134	259	174	341
Interest on working capital	"	17	30	22	38
Intermediate inputs	"	359	645	457	834
Turnover	"	951	1,602	1,183	2,021
Average cost of the ceramics produced	$/t	352	320	338	311

Breakdown of investments in thousands of US dollars

	A1	A2	B1	B2
Ground	110	200	140	250
Buildings and construction work	600 (200)	1,200 (360)	860 (260)	1,450 (430)
Equipment	660 (660)	1,130 (1,130)	830 (830)	1,440 (1,440)
Installation work	170 (120)	290 (200)	230 (160)	400 (280)
Start-up costs	120 (70)	180 (110)	140 (80)	260 (150)
	1,750 (1,050)	3,000 (1,800)	2,200 (1,330)	3,800 (2,300)

Note: The figures in brackets are in foreign currency.

Pay-out time

To calculate pay-out time, we shall use the two formulae below.

$$T_1 = \frac{I'}{Pn}, \qquad T_2 = \frac{I}{Pn + A + P}$$

where: I = Total investment
I' = investment without borrowed capital
A = amortization
P = interest on loans
Pn = net profits

Pay-out time for the two alternatives: $T_1 = T_2 = 3.5$ years

At the present time, as we do not know the taxation rates on domestic production and on profits, or other details necessary for estimating the selling price, we can only compare the cif prices of imported ceramics with the costs of ceramic goods manufactured in the factory proposed, taking into account the fact that customs tariff rates are always higher than tax rates on domestic production.

Average prices of imported ceramics were as follows in US dollars per tonne.

	Cameroon	Congo (People's Rep.)	Congo (Dem. Rep.)	Gabon	Central African Rep.	Chad	Sub-region
Periods considered:	1960 1964 1966/67	1960/67	1963/65	———	1960/67	———	
Unglased tiles	218	237	115	283	234	324	216
Glased tiles	229	261	182	291	306	314	243
Porcelain pottery	754	1,747	540	1,185	3,111	2,133	1,130
Pottery of other ceramic materials	448	537	320	513	790	907	431
Ornamental goods	750	1,461	636	2,095	1,476	1,032	1,108
Sanitary ware	475	483	552	493	439	612	507
Other ceramic goods	1,042	690	675	2,444	2,000	5,500	1,016
Average	312	345	250	404	391	544	340

Proposed production, expressed in CIF prices, compared with the prices of imported ceramic goods, is:

	A1	A2	B1	B2
Sanitary ware	640t	1,600t	850t	2,200t at $510,
Table-ware	290t	470t	350t	600t at $600,
Tiles	1,700t	2,800t	2,200t	3,400t at $230,
Other ceramic goods	70t	130t	100t	300t at $800,
Prices in thousands of US dollars:				
Sanitary ware	326	816	433	1,122
Table-ware	174	282	210	360
Tiles	391	644	506	782
Other ceramic goods	56	104	80	240
Total	947	1,846	1,229	2,504
Compared with turnover figures	944	1,590	1,170	2,006

This comparison shows that the ceramic goods manufactured in the proposed factory would be competitive on the Central African market and that it can be assumed that ceramic products could be exported to neighbouring countries. There is thus justification for considering the project further and studying all the relevant problems in more detail.

Estimate of profits in Cameroon

		A1	A2	B1	B2
Added value	thousands of $	592	957	726	1,187
Costs of goods and services	"	359	645	457	834
Turnover	"	951	1,602	1,183	2,021
Value added as percentage of turnover	%	62.3	59.7	61.4	58.7
Value added as percentage of total investment	%	34	32	33	31
Value added per employee	$/man-year	4,385	4,785	4,566	5,116

Foreign currency requirements

(A) **Products imported in their entirety**

	A1	A2	B1	B2
Import prices in thousands of $	947	1,846	1,229	2,504

(B) **Goods produced locally. Imports are in thousands of $**

		A1	A2	B1	B2	Note
Pegmatite	$28/t	6.9	13.7	9.0	18.2	50% of requirements
Glaze and metallic colouring	$300/t	10.5	17.7	13.5	21.9	100% "
Pure quartz	$20/t	1.6	3.2	2.2	4.4	50% "
Washed kaolin	$60/t	13.2	26.4	17.4	34.8	30% "
Glaze, colouring and liquefying material	$300/t	24.6	49.2	31.8	64.8	100% "
Spare parts		29.2	49.6	36.8	64.0	100% "
Payment of wages and salaries (30 per cent of wages and salaries exported)		10.9	15.5	12.6	17.3	
Amortization (assuming 50 per cent foreign investment)		96.0	163.0	121.0	210.5	
Profits (assuming 50 per cent foreign investment)		131.5	225.0	165.0	285.0	
Total		324.4	563.3	409.3	720.9	
Savings in foreign currency		622.6	1,282.7	819.7	1,783.1	

ANNEX I

Approximate breakdown of ceramics manufacturing costs in figures rounded off to thousands of dollars

		Alternative A		Alternative B	
Production capacity	t/year	2,700	5,000	3,500	6,500
Made up of:					
Sanitary ware	"	640	1,600	850	2,200
Table-ware	"	290	470	350	600
Tiles	"	1,700	2,800	2,200	3,400
Other goods	"	70	130	100	300
Investment cost					
Unit cost	$/t	650	600	630	380
Total cost	thousands of $	1,750	3,000	2,200	3,800
Made up of:					
Equipment	"	950	1,600	1,200	2,100
Buildings, land	"	800	1,400	1,000	1,700
Amortization					
16% on equipment	"	152	256	192	336
5% on buildings	"	40	70	50	85
Total	"	192	326	242	421
Maintenance					
6% on equipment	"	57	96	72	126
2% on buildings	"	16	28	20	34
Total	"	73	124	92	160
Made up of:					
Spare parts	"	29	50	37	64
Other maintenance	"	44	74	55	96
Interest:					
6% on half the capital	"	53	90	66	114
Insurance and miscellaneous costs					
1% of capital	"	18	30	22	38
Productivity	t/man-year	20	25	22	28
Total number of employees		135	200	159	232
Made up of::					
Management staff		4	6	5	6
Technicians		7	8	7	9
Shop supervisory staff		7	8	7	8

ANNEX I (continued)

		Alternative A		Alternative B	
Office staff		8	9	8	9
Skilled workers		64	80	70	100
Semi-skilled workers		25	63	40	70
Other personnel		20	26	22	30
Average annual wage or salary per worker	$/year per emp.	2,700	5,000	3,500	6,500
Management staff	"	6,100	6,300	6,200	6,400
Technicians	"	3,200	3,250	3,200	3,250
Shop supervisory staff	"	2,020	2,050	2,020	2,050
Office staff	"	1,500	1,550	1,520	1,570
Skilled workers	"	600	610	605	615
Semi-skilled workers	"	570	580	575	585
Other personnel	"	500	510	500	510
Total wages and salaries	thousands of $				
Management, category M	"	24.50	37.80	31.00	38.40
Technicians, category DL	"	22.40	26.00	22.40	29.25
Supervisory, category M	"	14.14	16.40	14.14	16.40
Office staff, category IL	"	12.00	13.95	12.16	14.13
Skilled workers, category DL	"	38.40	48.80	42.35	61.50
Semi-skilled, category DL	"	14.25	36.54	23.00	40.95
Other personnel, category IL	"	10.00	13.26	11.00	15.30
Total	$	136	193	157	216
Social welfare, holidays, 30% of wages	thousands of $	41	58	47	65
Wages, salaries and social costs	"	177	251	204	281
Made up of:					
Direct labour, category DL	"	98	144	114	171
Indirect, category IL	"	31	39	33	42
Management, category M	"	48	68	57	68
Profits (15% of investments)	"	263	450	330	570
Fuel	"	37	70	49	92
Electricity	"	25	39	30	47
Water	"	2	3	2	4
Working capital	"	170	300	220	380
10% interest on working capital	"	17	30	22	38
Raw materials	"	134	259	174	341

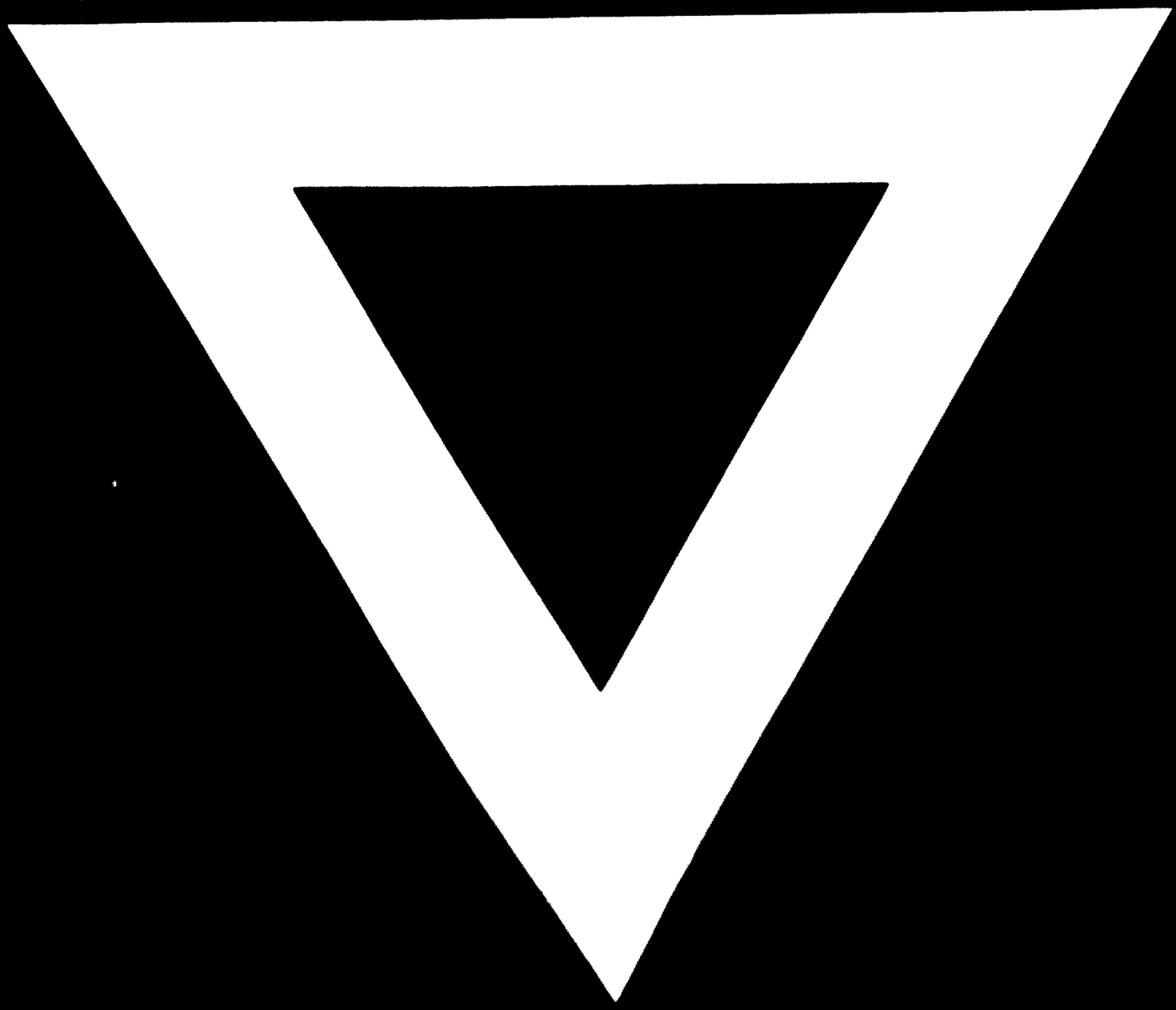
Recapitulation of ceramics manufacturing costs

	A1	A2	B1	B2
Amortization	152	256	192	336
Wages and salaries	136	193	157	216
Social welfare costs	41	58	47	65
Profits	263	450	330	570
Added value	592	957	726	1,187
Maintenance	73	124	92	160
Interest on capital	53	90	66	114
Insurance and miscellaneous costs	18	30	22	38
Fuels	37	70	49	92
Electricity	25	39	30	47
Water	2	3	2	4
Raw materials	134	259	174	341
Interest on working capital	17	30	22	38
Intermediate inputs	359	645	457	834
Turnover	951	1,602	1,183	2,021
$/t	352	320	338	311

Sources: Cameroonian Investment Code and Statute of the Development Bank, Law No. 60-64 of 27 June 1960.

Development of ceramics in Central Africa, Economic Commission for Africa, E/CN.14/IMR/173, 27 June 1969.

United Nations foreign trade statistics.



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