PREFEASIBILITY STUDY ON

SETTING UP PEANUT PASTE PROCESSING PLANT IN NIGERIA

DEVELOPED BY

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ACKNOWLEDGMENT

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ABOUT THIS REPORT

This prefeasibility study is designed to provide potential and startups entrepreneurs' valuable information on setting up **Peanut Paste Processing** business in the food processing industry of Nigeria's market; aimed at encouraging and facilitating industrial activities across the country. It is our realization that industrialization is at the heart of economic development and that every effort has to be made to bring about industrial growth and encourage our people to be part of it.

The **peanut paste/ butter processing** business have over 80% local content in terms of availability of raw material, equipment and machinery, manpower requirements etc.

The key areas covered in this report include:

i) Technical and economic analysis of the production, marketing and profitability of the project.

ii) Recommendations in respect of procurement of equipments and associated problems.

iii) Recommendation on suitable agronomic management practices to ensure efficient running of the projects.

iv) Detailed financial analysis including income statement, projected cash flows and balance sheet for the projects.

This prefeasibility report provides a comprehensive and detailed coverage of the above terms of reference and is designed to facilitate investment decisions.

The implementation of this project will also impact positively on the economy of the immediate community where the project is located. This is in terms of employment-direct and indirect, skilled and unskilled. Government also stands to benefit from internal revenue from taxation.

In view of the result of the analysis using some economic indicators as stated in the proposed project, it is hereby recommended that the project is viable.

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APPENIDIES

PART I
EXECUTIVE SUMMARY

This prefeasibility study is on setting up of peanut paste processing plant proposed to be sited in the most suitable part of Nigeria.

Peanuts paste is made from grounding fried peanuts into a paste. The paste is used as a sauce stew to accompany food. It is many times mixed with other sauce or mixed directly into food. It makes soup heavy, and tastes nice. It may also be used or pasted on bread and be used instead of butter and can also be eaten with kolanut or garden egg.

The factory location should take into consideration the proximity of raw material sources, the availability of cheap labour, lower cost of operations and easy access to market. Similarly, plant should be operated in accordance with NAFDAC guidelines and specifications.

The market for this product is readily available as it is highly demanded for both domestic commercial purposes such as soup making, sauces for foods, events and occasions especially in southern part of Nigeria among others.

The installed production capacity is estimated at about 250 to 350 kgs of peanuts per day. An investment capital of N5,624,960 would sufficiently start up this project. The legal form of business forms of registration could be Sole proprietorship or partnership.

1.1 SUMMARY OF TOTAL PROJECT COST

S/N	DESCRIPTION	COST INCURRED	COST TO BE INCURRED	TOTAL
1	Land & building	-	240,000	240,000
2	Machinery & equipment	-	1,604,800	2,033,600
3	Utility equipment	-	1,420,000	1,420,000
4	Office equipments	-	220,000	220,000
	Total Cost of Project	-	**3,484,800**	**3,913,600**
5	Working capital	-	1,200,000	1,200,000
6	Contingencies	-	511,360	511,360
	Total project cost	-	**5,196,160**	**5,624,960**

1.2 FINANCIAL ACCOUNTING RATIOS ANALYSIS

PERFORMANCE RATIOS AVERAGES

(a) Return on Sales =18%
(b) Return on Equity = 503%
(c) Return on Investment =76%
(d) Positive NPV = ₦22,763,375
(e) IRR =48%
(f) ARR =69%
(g) Payback Period = 2 year and 8 months.

PART II
MARKET ANALYSIS

2.1 INTRODUCTION

There is a ready market for the paste and outlets are spread all over because this is a house hold item used by all families throughout the year. The market is completely scattered and controlled by tiny or cottage units with few local established brands. In most of the cases, processing as well as handling is unhygienic and volumes are very small and the market is far from saturation.

These products are stocked in markets, provisional shops and supermarkets etc. Also, there is high demand for the product for export, as there is good market for it in different parts Europe. Consequently, the potential entrepreneur can carve out market niche through strategic marketing concept.

2.2 MARKET AREA ANALYSIS

The proposed project prefeasibility study is for an addition to the capacity existing in Nigerian economy. The project is neither a novel project nor a new project. Therefore, the task of study was strictly on historical data analysis and study of factors, which influence consumption being a project which is already in existence, the study centered on the followings:

1. A study of general economic factors and indications
2. Demand estimation
3. Key demand drivers
4. Identification of critical success

2.3 GENERAL ECONOMIC FACTORS

The demand potential for any product is likely to have some kind of association with a few economic indicators. A change in one particular or some economic indicators may take place simultaneously or lead or lap. Some of the important economic indicators includes gross domestics product, per capital income, in some disparity, rate of urbanization, population growth rate, literacy rate, government spending and money supply.

2.4 MARKET DEMAND ANALYSIS

The production demand is the most important step in this prefeasibility study. Salient points related to demand estimation inter alia are:

2.4.1 THE END - USER PROFILE

Peanuts have different end-users. The specific/principal use of the proposed product serves as food to different end –users. These different market segments (end users) may not be inter-linked. End-users of the peanut can be classified on the lines of urban and rural demand. Recent studies revealed that urban demand for the product is by far

higher than that of rural demand because of change in consumption trends for health and fitness concern of this segment of the population.

2.4.2 THE INFLUENCING FACTORS

The major influencing factor of peanut is festivities. The reason is because a lot of parties are held during this period, as the likelihood of rain disrupting outdoors events is much lower. Festive occasions are referred to as mass sales periods. These typically occur in the early part of the year. The month of April/may are the peak season with December accounting for highest sales.

PART III
TECHNICAL ANALYSIS

3.1 PROJECT DESCRIPTION

This proposed project is for production of butter peanuts. The factory and its products should be operated in accordance with NAFDAC specifications. All required machines and equipment are stainless materials with adequate laboratory to handle chemical and micro biological test as may be directed by NAFDAC. There must be adequate provision of stores, for raw materials and finished goods, toilet and bath room for workers.

3.2 LOCATION STRATEGY

The location of the factory should take into consideration the accessibility to raw material sources, the availability of cheap labour, lower cost of operations and easy access to market for the products.

3.3 PRODUCTION TECHNOLOGY

The technological requirement for the proposed peanuts is a matter of choice by the entrepreneur. Nevertheless, enterprise should produce a safe product using stainless steel machinery unlike the locally made products produced using cast-iron equipment, which end up laced with materials likely to cause cancer to those eating it.

3.4 TECHNOLOGICAL INNOVATION

There is a stable technology innovation in the peanut and food processing industry. Generally there are new innovations in technologies evolving with time. Therefore, it is instructive to note that as technologies evolve, production processes become outdated and obsolete and cause must be changed, machines and equipments must be improved and upgraded.

3.5 SPECIFICATION AND QUALIITY STANDARD

Raw peanut as well as the machines used in the processing must meet quality norms so that the machines can operate at its best rating to reach its expected life's span. In order to achieve these goals, the entrepreneur is to set their own standard with detailed specifications.

3.6 RAW MATERIALS

The most important raw material shall be good quality peanut.

Requirement may not warrant direct procurement from the small time peanut processors (due to low quality and quantity) and hence the trader has to be selected carefully to avoid high moisture content because, it reduces shelf life of the peanut and may result in high level of aflatoxin which is harmful to human beings in the long run.

3.7 PRODUCTION CAPACITY, TECHNOLOGY AND PROCESS

The process begins with the cleaning and sorting of the sun- dried shelled peanuts. Thereafter, the nuts are fried briefly so that they can make a paste and to give a good taste. It is then put into the grinding machine for processing into a paste and packed in plastic containers.

3.8 SOURCES OF FUNDS

The project can be funded through a number of sources which include but not limited to the following; Agric-Business, Small & Medium Scale Investment Scheme (AGSMEIS), Bank of Industry, Bank of Agriculture (BOA), Nigeria Export-Import (NEXIM) Bank, International Finance Corporation (IFC), grants etc., though the conditions and criteria for accessing the loans and grants varies.

PART IV

4.0 FINANCIAL ANALYSIS

Basically, the financial section of this prefeasibility study consists of three financial statements: Income statement, Balance sheet, Cash flow projection. This section determines whether or not the project is viable using some economic indicators such as Net Present Value (NPV), Internal Rate of Return (IRR), and payback period as are detailed in the appendices below.

4.1 ASSUMPTIONS

1. Assuming that the project will last for the period of five years and the salvage value at the end of the project life ignored.
2. The Machineries, Equipments and Utility Equipment have uniform depreciation of 20%.
3. The installed capacity has estimated capacity of 300kg per annum.
4. The proposed capacity utilization are 60% in the first year of commercial production, 70%, 80% in the 2nd and 3rd year respectively and 90% in the 4th and 5th years.
5. Raw materials will be sourced locally and Market for the product is readily available.
6. Staff and labour cost will increase by 10% yearly.
7. Prices and unit costs are assumed unchanged in the five years of projection.
8. The valuation currency used is Naira.

4.2 ACCOUNTING /FINANCIAL ANALYSIS

4.2.1 NET PROFIT

The projected Annual Trading Profit and Loss Account is proposed to make the following Net Profit after tax during the corresponding projected periods – all things being equal.

4.2.2 NET PRESENT VALUE (NPV)

NPV is one of the four methods of discounted cash flows techniques which state that money that is immediately available for use, has a greater value than same amount receivables in future date.

Using this method however, all net cash inflows will be discounted to present value using the estimated interest rate of 60% discount factor. At **12%** discount factor the project produced a positive **NPV NGN 13,155,560**

4.2.3 INTERNAL RATE OF RETURN (IRR)

This is the discount rate which gives zero NPV or the rate which equates the present value of cash inflows with present value of cash outflows of the project.

The cash flow of this project was discounted systematically until the NPV of the project finally become zero. The project produces the **IRR** of **48%.** Thus, the project accepted as being viable. This is because **IRR** is more than the cost of capital.

4.2.4 ACCOUNTING RATE OF RETURN (ARR)

ARR uses accounting information as revealed by financial statements (Income Statement) to measure profitability of the project under consideration. The forecast **ARR** of the project is **69%.**

4.2.5 PROFITABILITY INDEX (PI)

This is the present value of future cash flows over the present value of cash outlays. The project PI further confirm the viability of the project , because as the rules of the accepting and rejecting hold, a project should be accepted if the PI is equal or greater than one (1). Consequently, the PI of this project is **1.72** and thus recommended as being viable to be accepted for financing

APPENDIX I
TOTAL PROJECT COST

S/N	DESCRIPTION	QTY	UNIT PRICE	TOTAL
	LAND & BUILDING			
1	Rent of Factory space	1	240,000	240,000
	Sub total	**1**	**240,000**	**240,000**
	MACHINERY & EQUIPMENT			
2	Stainless Grinding Machine	1	600,000	600,000
3	Sealing Machine	1	288,000	288,000
4	Weighing Scale	1	288,000	288,000
5	Delivery/ Supply Motorcycles	2	428,800	857,600
	Sub total		**1,604,800**	**2,033,600**
	UTILITY EQUIPMENT			
6	Industrial borehole with overhead tank	1	400,000	400,000
7	Perkins Generator	1	1,020,000	1,020,000
	Sub total	**2**	**1,420,000**	**1,420,000**
	OFFICE EQUIPMENTS			
8	Computer set	1	60,000	60,000
9	Office furniture	Set	120,000	120,000
10	Fittings	Set	40,000	40,000
	Sub total	**1**	**220,000**	**220,000**
	Total Cost of Project		**3,484,800**	**3,913,600**
11	Working capital		1,200,000	1,200,000
12	Contingencies		511,360	511,360
	Total project cost		**5,196,160**	**5,624,960**

APPENDIX II
ESTIMATION OF WORKING CAPITAL REQUIREMENT

N'

Year of Commercial Operation	**2 weeks**
% Capacity Utilization (Inventory)	**60%**
1 week stock of raw material	950,000
1 Day stock of finished products	-
Work in Progress	-
Bank/ Cash (5% sales of the products)	350,000
Working capital	**1,200**,000

APPENDIX III
FINANCING PLAN

₦

DESCRIPTION	EXISTING	PROPOSED	TOTAL
Equity	1,624,960		1,624,960
Term loan from	-	4,000,000	4,000,000
Total project cost	**1,624,960**	**4,000,000**	**5,624,960**
% Contribution	**15%**	**75%**	**100%**

APPENDIX IV
TERM LOAN REPAYMENT SCHEDULE

LOAN AMOUNT: 4,000,000 (Four Million Naira)
TYPE : ANY LOCAL AVAILABLE SME FUND
INTEREST RATE USED: 12%
REPAYMENT: 5 YEARS EQUAL INSTALLMENT (Annually)

YEAR	OPENING BALANCE	REPAYMENT	INTEREST DUE	TOTAL YEAR INTEREST
1	4,000,000	800,000	480,000	1,280,000
2	3,200,000	800,000	384,000	1,184,000
3	2,400,000	800,000	288,000	1,088,000
4	1,6000,000	800,000	192,000	992,000
5	800,000	800,000	96,000	896,000
Total		**4,000,000**	1,440,000	5,440,000

APPENDIX V
FORECAST STAFFING SCHEDULE (1ST OPERATIONAL YEAR)
N'000

POSITION	No	Unit Scale	Scale/ Month	Scale / Year
DIRECT LABOUR				
Factory Manager	1	60	60	720
Semi skilled labour	2	30	60	720
Sub total	**3**	**90**	**120**	**1,440**
INDIRECT LABOUR				
Accounts/ Admin	1	40	40	480
Marketing Officer	2	30	60	720
Sub total	**3**	**100**	**100**	**1,200**
Total on staff (1st year)	**6**	**190**	**220**	**2,640**

APPENDIX VI
ESTIMATE OF ANNUAL DEPRECIATION ALLOWANCE
N'

ITEMS	INITIAL VALUE	DEPRECIATION (20%)
Machinery and Equipments	2,033,600	406,720
Utility Equipments	1,420,000	284,000
Office Equipments	220,000	44,000
TOTAL	**3,673,600**	**734,720**

APPENDIX VII
ESTIMATION OF ADMINISTRATIVE / OVERHEAD EXPENSES
N'000

COST ITEM	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Selling and Distribution	480	504	528	554	554
Cleaning and Toiletries	312	327.6	343.2	360	360
Miscellaneous	24	25.2	26.4	28	28
Utilities (Power & water)	1,780	1869	1958	2,056	2,056
TOTAL	**2,596**	**2,725.8**	**2,855.6**	**2,998.38**	**2,998.38**

APPENDIX VIII
ESTIMATION OF PRODUCTION AND OPERATION COSTS

Cost Item	Units	@	Qty/ day	Pdn Cost/ day	Pdn Cost/ mth	Pdn Cost/ yr
Direct Costs						
Peanuts	Kgs	660	100,000	165,200	4,290,000	51,480,000
Packaging materials	Pcs	172	140,000	60,400	1,565,200	18,782,400
Sub-total		**832**	**240,000**	**225,600**	**5,855,200**	**70,262,400**

APPENDIX IX
ESTIMATION OF RAW MATERIAL/PRODUCTION COST AND SALES

Year of Commercial Production	Year 1	Year 2	Year 3	Year 4	Year 5
% Capacity Utilization	**60%**	**70%**	**80%**	**90%**	**90%**
1. Output					
Peanut butter (kg)	30,888	36,036	41,184	46,332	46,332
Total output	**30,888**	**36,036**	**41,184**	**46,332**	**46,332**
2. Cost of Production	**N'**	**N'**	**N'**	**N'**	**N'**
Peanut butter @ N832/ kg	25,698,816	29,981,952	34,265,088	38,548,224	38,548,224
Total cost of production	**25,698,816**	**29,981,952**	**34,265,088**	**38,548,224**	**38,548,224**
3. SALES					
Peanut butter @ N1200/ kg	37,065,600	43,243,200	49,420,800	55,598,400	55,598,400
TOTAL SALES/ TURNOVER	**37,065,600**	**43,243,200**	**49,420,800**	**55,598,400**	**55,598,400**

APPENDIX X
FORECAST INCOME STATEMENT (PROFIT & LOSS ACCOUNT)

Year of commercial operation	Year 1	Year 2	Year 3	Year 4	Year 5
% Capacity Utilization	**60%**	**70%**	**80%**	**90%**	**90%**
1. SALES	**N'**	**N'**	**N'**	**N'**	**N'**
Gross Sales	37,065,600	43,243,200	49,420,800	55,598,400	55,598,400
VAT @ 5%	1,853,280	2,162,160	2,471,040	2,779,920	2,779,920
Net Revenue	**35,212,320**	**41,081,040**	**46,949,760**	**52,818,480**	**52,818,480**
2. OPERATION COST					
Cost of Raw materials consumed	25,698,816	29,981,952	34,265,088	38,548,224	38,548,224
Staff and labour	2,640,000	2,772,000	2,911,000	3,056,000	3,056,000
Admin. & Overhead Expenses	2,596,000	2,725,800	2,855,600	2,998,380	2,998,380
Depreciation	734,720	734,720	734,720	734,720	734,720
Total Operating Cost	**31,669,536**	**36,214,472**	**40,766,408**	**45,337,324**	**45,337,324**
3. OTHER COSTS					
Interest on Term Loan (12%)	480,000	384,000	288,000	192,000	96,000
Loan Repayment	800,000	800,000	800,000	800,000	800,000
Total (Other Costs)	**32,949,536**	**37,398,472**	**41,854,408**	**46,329,324**	**46,233,324**
Profit Before Tax	2,262,784	3,682,568	5,095,352	6,489,156	6,585,156
Tax @ 20%	452,556.8	736,513.6	1,019,070.4	1,297,831.2	1,317,031.2
Profit after tax (NET PROFIT)	**1,810,227**	**2,946,054**	**4,076,282**	**5,191,325**	**5,268,125**
% Return on Sales	0.15	0.17	0.19	0.21	0.170
% Return on Equity	3.505	4.363	5.476	6.521	5.283
% Return on Investment	0.529	0.659	0.827	0.985	0.798

APPENDIX XI
FORECAST HIGH RATE AND LOW RATE COMPUTATION

Year	C/F	DF 12%	NPV
	N'		N'
0	(5,624,960)	1	
1	1,810,227	0.893	1,616,533
2	2,946,054	0.797	2,348,005
3	4,076,282	0.712	2,902,313
4	5,191,325	0.636	3,301,683
5	5,268,125	0.567	2,987,027
Total Profit	**19,292,013**		**13,155,560**
Average Profit	**3,858,402.6**		

Year	C/F	DF 60%	NPV
	N'		N'
0	(5,624,960)	1	
1	1,810,227	0.6250	1,131,392
2	2,946,054	0.3906	1,150,729
3	4,076,282	0.2441	995,020.4
4	5,191,325	0.1526	792,196.2
5	5,268,125	0.0954	502,579.1
Total Profit	**19,292,013**		**4,571,916**
Average Profit	**3,858,402.6**		

APPENDIX XII
FORECAST IRR AND ARR COMPUTATION

$$IRR = a + \frac{(A)}{A+B} * (b-a)$$

Where

a = 9%

b= 60%

A = 13,155,560

B= 4,571,916

$$12\% + \frac{13,155,560}{13,155,560 + 4,571,916} (60-12)$$

12%+ 35.6

48%

$$ARR = \frac{\text{Estimated Average Profit}}{\text{Estimated initial investment}} \times 100$$

$$ARR = \frac{3,858,402.6}{5,624,960} \times 100$$

69%

APPENDIX XIII
CASH FLOW PROJECTION

Year of Comm. Production	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
% Capacity Utilization		60%	70%	80%	90%	90%
A) CASH RECEIPTS	**N'**	**N'**	**N'**	**N'**	**N'**	**N'**
Equity Capital	1,624,960	-	-	-	-	-
Term Loan	4,000,000	-	-	-	-	-
Gross Revenue	-	1,810,227	2,946,054	4,076,282	5,191,325	5,268,125
Total Receipts	**5,624,960**	**1,810,227**	**2,946,054**	**4,076,282**	**5,191,325**	**5,268,125**
B) CASH PAYMENTS						
Capital Payment						
Machinery & Equipments	2,033,600	-	-	-	-	-
Utility Equipment	1,420,000	-	-	-	-	-
Office equipments	220,000	-	-	-	-	-
TOTAL	**3,673,600**	-	-	-	-	-
(ii) Operating Expenses						
Depreciation	-	734,720	734,720	734,720	734,720	734,720
Change in working capital	1,951,360	30,934,816	35,479,752	40,031,688	44,602,604	44,602,604
Sub total	**1,951,360**	**31,669,536**	**36,214,472**	**40,766,408**	**45,337,324**	**45,337,324**
(iii) Financial Expenses						
Repayment of Term Loan	-	800,000	800,000	800,000	800,000	800,000
Interest on Term Loan	-	480,000	384,000	288,000	192,000	96,000
Value Added Tax	-	1,853,280	2,162,160	2,471,040	2,779,920	2,779,920
Corporate Tax	-	452,556.8	736,513.6	1,019,070.4	1,297,831.2	1,317,031.2
Sub total	-	3,133,280	3,346,160	3,559,040	3,771,920	3,675,920
Total cash payment (ii)-(iii)	**1,951,360**	**28,536,256**	**32,868,312**	**37,207,368**	**41,565,404**	**41,661,404**
Net cash flow c/f	1,951,360	28,536,256	32,868,312	37,207,368	41,565,404	41,661,404

APPENDIX XIV
BALANCE SHEET PROJECTION

Year of comm. Operation	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
ASSETS	**N'000**	**N'000**	**N'000**	**N'000**	**N'000**	**N'000**
(i) Fixed assets						
Machinery and Equipments	2,033,600	-	-	-	-	-
Utility equipment	1,420,000					
Office Equipment	220,000					
Value at Acquisition	-	3,673,600	3,673,600	3,673,600	3,673,600	3,673,600
Less Cumulated Depreciation	-	734,720	1,469,440	2,204,160	2,938,880	3,673,600
Net fixed assets	**3,673,600**	**2,938,880**	**2,204,160**	**1,469,440**	**734,720**	**0**
(ii)Current Assets/ liability						
Stock of Raw Materials	1,200,000	3,419,840	6,894,564	10,065,387	27,149,004	15,152,700
Debtors /prepayment	-	1,453,000	2,098,000	3,308,000	4,139,000	5,653,000
Bank and Cash Balances	751,360	4,150,024	5,160,031	6,170,539	7,180,674	7,180,741
Creditor / accruals	-	(4,074,000)	(6,039,000)	(8,947,000)	(11,013,000)	(13,785,000)
Company Tax	-	(452,556.8)	(736,513.6)	(1,019,070.4)	(1,297,831.2)	(1,317,031.2)
Net current assets	**1,951,360**	**4,496,307**	**7,377,081**	**9,577,856**	**26,157,847**	**12,884,410**
TOTAL NET ASSETS	**5,624,960**	**7,435,187**	**9,581,241**	**11,047,296**	**26,892,567**	**12,884,410**
(ii) FINANCED BY						
Equity Capital	1,624,960	1,624,960	1,624,960	1,624,960	1,624,960	1,624,960
P&L	-	1,810,227	2,946,054	4,076,282	5,191,325	5,268,125
Retained Profit	-	-	1,810,227	2,946,054	4,076,282	5,191,325
SHAREHOLDERS FUND	1,624,960	3,435,187	6,381,241	8,647,296	10,892,567	12,084,410
Long Term Loan	4,000,000	4,000,000	3,200,000	2,400,000	1,600,000	800,000
TOTAL EQUITY & LIABILITY	**5,624,960**	**7,435,187**	**9,581,241**	**11,047,296**	**26,892,567**	**12,884,410**