GROUNDNUT FARM

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I. Summary

This profile envisages the establishment of a farm for the production of Groundnut with a capacity of 2,650 qt. per annum.

The present demand for the proposed product is estimated at 4,311 tonnes per annum. The demand is expected to reach at 8,766 tonnes by the year 2025.

The farm will create employment opportunities for 14 persons.

The total investment requirement is estimated at Birr 6.82 million, out of which Birr 1.1 million is required for Agricultural Equipment & Machinery.

The project is financially viable with an internal rate of return (IRR) of 16% and a net present value (NPV) of Birr 3.13 million, discounted at 8.5 %.

II. PRODUCT DESCRIPTION

Groundnut is a warm - season crop and is killed by frost. Most of the crop is produced in areas with 40 mm or more annual rainfall and there should be at least 20 mm rainfall in the growing season. Dry weather is required for ripening and harvesting. The most suitable soils are well - drained loose, friable, sandy loams, well supplied with calcium and with moderate amounts of organic matter. It can be grown on heavier soils, but this makes harvesting more difficult as the soil adhere to the nuts and it may also stain them. Soils which crust or cake are unsuitable because of the difficulty of peg penetration. Well -aerated soil with good drainage is essential as the crop can not tolerate water logging.

Groundnuts are the second largest source of vegetable oil, the largest being soya beans. Large quantities of groundnuts are consumed locally in the areas of production. The world trade depends largely on the European demand for groundnut oil extraction. The non-drying oil is used as a substitute for olive oil as a salad and cooking oil. It is used in the manufacture of margarine and inferior quality oil for soap, and as a lubricant. High quality oil is used in the pharmaceutical industry. The cake after expression of the oil is a high- protein livestock feed. The best quality cake may be ground into flour for human consumption.

The nuts are eaten row or after roasting. They are also used in confectionery and in curries. The green haulms makes excellent fodder and hay in general. Benishagul-Gumuz is one of the regional states of Ethiopia blessed with tremendous potentials for growing groundnuts commercially.

III. MARKET STUDY AND FARM CAPACITY

A. MARKET STUDY

1. Past Supply & Present Demand

The demand for groundnut is derived from domestic consumption and export demand. Since there is no specific data on the consumption of groundnut, data obtained form Household Income, Consumption and Expenditure Survey of the CSA is used in estimating the domestic demand for the product. According to the survey, the per capita consumption of groundnuts in the country is 54 gm. The total domestic demand for groundnut for year 2004 is, therefore estimated at 3,841.1 tonnes, making use of the projected population size of 71,131,683 for the year.

Groundnut is exported in shell as well as shelled form. Total exports of groundnut during the period 1995 - 2003 are shown in Table 3.1. Though they exhibit considerable fluctuations, exports reveal an average annual growth rate of 6.5% during the period under consideration. Making use of the average annual growth rate and considering the average export during the period under reference (i.e., 458,875.9 Kg) as the effective export demand for year 2003, the total export demand for the product for year 2004 is estimated at 470.4 tonnes. Accordingly, the total present demand for the product is estimated at 4311.5 tonnes.

Table 3.1
EXPORTS OF GROUNDNUTS (KG)

Year	Export
1995	27983
1996	-
1997	80350
1998	68965
1999	70000
2000	-
2001	-
2002	1029104
2003	1476853

***Source**: Customs Authority, External Trade Statistics, 1995-2003.*

2. Projected Demand

Since a the domestic demand for groundnut is influenced by population size and income, the 2.9 per cent population growth rate is used in projecting the domestic demand. The export demand for the product is projected using the 6.5% average growth rate of exports of the product observed during 1995-2003. Based on the proportion of the region's population and

taking into account the significant potential of the region, the region's share is estimated to be 5% of the total projected demand for the product (Table 3.2).

Table 3.2
PROJECTED DEMAND FOR GROUNDNUT (TONNES)

Year	Projected Demand (Tonnes)			Market Share of Envisaged Plant
	Domestic Demand	Export Demand	Total	
2005	3952.50	500.97	4453.47	132.67
2006	4067.13	533.53	4600.66	230.03
2007	4185.07	568.21	4753.28	237.66
2008	4306.44	605.15	4911.59	245.58
2009	4431.33	644.48	5075.81	253.79
2010	4559.83	686.37	5246.21	262.31
2011	4692.07	730.99	5423.06	271.15
2012	4828.14	778.50	5606.64	280.33
2013	4968.16	829.10	5797.26	289.86
2014	5112.23	882.99	5995.23	299.76
2015	5260.49	940.39	6200.88	310.04
2016	5413.04	1001.51	6414.55	320.73
2017	5570.02	1066.61	6636.63	331.83
2018	5731.55	1135.94	6867.49	343.37
2019	5897.77	1209.78	7107.54	355.38
2020	6068.80	1288.41	7357.21	367.86
2021	6244.80	1372.16	7616.96	380.85
2013	6425.89	1461.35	7887.25	394.36
2023	6612.25	1556.34	8168.58	408.43
2024	6804.00	1657.50	8461.50	423.08
2025	7001.32	1765.24	8766.55	438.33

3. Pricing and Distribution

According to the CSA "Average Retail Price of Goods and Services", the average price of groundnut for the region is Birr 6.06 per kg. Allowing 30 per cent for wholesale and retail margin, the envisaged plant is expected to sell its product at Birr 4.66 per kg.

The product can get its market outlet through the existing wholesale and retail network that includes department stores, merchandise shops and supermarkets.

B. FARM CAPACITY AND PROGRAMME

1. Farm Capacity

The envisaged groundnut farm will have a production capacity of 2,650 quintals of unshelled nuts per annum from 125 hectares of land.

2. Farming Programme

The groundnut farm will start with 75 per cent capacity at its initial stage and will reach to full capacity in the second year.

IV. MATERIALS, INPUTS AND UTILITIES

A. FARM MATERIALS AND AGRICULTURAL INPUTS

Generally, seeds, packing materials and office furniture are the basic materials and inputs required for groundnuts farm. The types and amount of materials and inputs and corresponding costs are shown in Table 4.1. According to Table 4.1, the total cost estimates upto full capacity are expected to be Birr 0.165 Million.

Table 4.1
FARM MATERIALS AND AGRICULTURAL INPUTS REQUIREMENT AND COSTS

Sr. No	Description	Qty.	Cost Birr (000)
1	Seeds (qt)	1750	140
2	Packing materials		25
	Total		**165**

B. UTILITIES

Electricity , water, fuel and lubricant, telephone and office supplies will be the major utilities required by the envisaged groundnut farm. Electric power is required for lighting and for operating electrical appliances. Fuel is required to run tractors, vehicles, generators and other machinery. The utilities requirement and corresponding costs are described in Table 4.2. According to Table 4.2, the total cost for fuel and lubricant, electricity, water, telephone and office supplies are estimated at Birr 0.153 million.

Table 4.2
UTILITIES REQUIREMENT AND CORRESPONDING COSTS ('000 Birr)

S. No	Description	Qty (000)	Cost Birr (000)
1	Fuel (lt)	24.0	60.00
2	Lubricant (lt/Kg)	2.4	6.00
3	Electricity (kWh)	28.0	1.30
4	Water (m^3)	40.0	79.88
5	Telephone	-	3.60
6	Office Supplies	-	2.50
	Total		**153.28**

V. FARM OPERATION TECHNOLGY AND ENGINEERING

A. FARM OPERATION TECHNOLOGY

1. Harvesting

Land development, land preparation, sowing, irrigation water application, cultivation and harvesting are the main activities to be undertaken in groundnut production

The land development component comprises surveying and designing, land clearing, leveling and irrigation system, and access and farm roads construction. The farm machineries and equipment required for land development operation will be obtained on rental basis from other organization.

The land preparation part includes ploughing, disking, harrowing, and rigging. It is followed by sowing seeds. The land preparation activities will be carried out by tractors equipped with different machineries while sowing will be carried out by casual labourers.

Irrigation water application and cultivation will be carried out manually by daily labourers. Harvesting which is the final stage of groundnut production process will be accomplished manually by casual labourers.

2. Source of Technology

The farm machinery and equipment required for groundnut production could be obtained from Ries. Engineering, Nazareth Tractor Assemly Plant, etc. In addition, Improved seeds having a potential to give high yields could be supplied by research centers in the country.

B. ENGINEERING

1. Farm Machinery and Equipment

The types of farm machinery and equipment required for groundnut production are shown in Table 5.1. The total cost required is estimated at Birr 2.34 million, out of which 90 per cent will be in foreign currency.

Table 5.1
LIST OF FARM MACHINERY AND EQUIPMENT AND COST

Sr. No.	Description	Qty	Cost Birr (000)		
			LC	FC	Total
1	Tractor 110-125 HP	1	-	250	250
2	Disk Plough	1	-	60	60
3	Disk Harrow of set Type	1	-	90	90
4	Rigger	1	-	40	40
5	Trailers	1	90	-	90
6	Truck (medium)	1	-	400	400
8	Generator	1	35	100	135
9	Workshop(set)	1	-	30	30
10	Tools(set)	1	-	8	8
	Grand total		**125**	**978**	**1103**

2. Land, Building and Civil works

a) Land

The total land required for the groundnut farm will be about 700 ha. The land is expected to be allocated for production of groundnut and residential house, offices, stores and recreation house construction and for further groundnut farming area expansion. Rural land lease rate in BGRS ranges from Birr 15 to Birr 30 per hectare. Accordingly, the total land lease cost at the rate of Birr 30 per hectare and for 70 years of land holding, is estimated at Birr 1.47 million. Even though only a portion of the total lease cost is required to be paid in advance and the balance with in a defined period, in this project profile it is assumed that the total land lease cost will be paid in advance.

b) Buildings

The Building area of the farm will include stores, offices, workshop and recreation houses. The total cost of the construction on 2000 m^2 of land, at the unit cost of Birr 700 per m^2, is estimated to be Birr 1.4 million.

c) Civil Works

Surveying, clearing and leveling of farm land and main canal drainage access and farm road construction will be among the civil work activities to be carried out for groundnut production. The total cost is estimated at Birr 0.33 million.

3. Proposed Location

The location is proposed to be near perennial rivers with adequate and suitable land for groundnut production. Hence, Metekel zone is identified to be one of the possible area for the envisaged groundnut farm.

VI. MANPOWER AND TRAINING REQUIREMENT

A. MANPOWER REQUIREMENT

The envisaged farm requires 14 permanent work force. The manpower requirement for the envisaged project is given in Table 6.1. According to Table 6.1, the total cost for permanent and casual labour is estimated at Birr 150.7 thousand and Birr 225 thousand, respectively.

Table 6.1
MANPOWER REQUIREMENT AND LABOUR COAST

Sr. No.	Description	Req. No.	Monthly Salary, Birr	Annual Salary Birr (000)
1.	Manager	1	1850	13.2
2.	Cashier /secretary	1	600	7.2
3.	Irrigation Agronomist	1	1400	16.8
4.	Accountant	1	600	7.2
5.	Sales / Purchaser	1	700	8.4
6.	Driver	1	700	8.4
7.	Tractor Operator	1	800	9.6
8.	Generator Operator	1	400	4.8
9.	Mechanic	1	600	7.2
10.	Ass. Mechanic	1	400	4.8
11.	Guard	3	600	21.6
12.	Office girl/boy	1	200	2.4
	Sub- total	**14**		**120.6**
	Employee benefits 25%			30.1
	Total			**150.7**
	Casul labour			225.0
	Grand Total			**375.7**

B. TRAINING REQUIREMENT.

No special training is required for the envisaged groundnut farm.

VII. FINANCIAL ANALYSIS

The financial analysis of the Groundnut farm project is based on the data presented in the previous chapters and the following assumptions:-

Construction period	1 years
Source of finance	30 % equity
	70 % loan
Tax holidays	6 years
Bank interest	7.5 %
Discounted cashflow	8.5 %
Land lease value	Based on estimated land lease cost of the region
Repair and maintenance	5 % of the total equipment and machinery
Accounts receivable	30 days
Raw material, local	30 days
Raw materials, import	90 days
Work in progress	1 day

Finished products	30 days
Cash in hand	5 days
Accounts payable	30 days

A. TOTAL INITIAL INVESTMENT COST

The total initial investment cost of the project including working capital is estimated at 6.82 million, of which 15.21 per cent will be required in foreign currency.

The major breakdown of the total initial investment cost is shown in Table 7.1

Table 7.1
INITIAL INVESTMENT COST

Sr. No.	Cost Items	Total ('000 BIRR)
1	Land lease value	1,470.00
2	Site preparation	330
3	Building and Civil Work	3,500
4	Farm Machinery and Equipment	1,103
5	Office Furniture and Equipment	25
7	Pre-production Expenditure*	400.36
8	Working Capital	48.71
	Total Investment cost	**6,828.36**
	Foreign share	**15.21**

B. FARMING COST

The annual farming cost at full operation capacity is estimated at Birr 1.53 million (see Table 7.2). The material and utility cost accounts for 20 per cent, while repair and maintenance take 3.48 per cent of the farming cost.

* *N.B Pre-production expenditure includes interest during construction (Birr 400.36 thousand), and (Birr 5 thousand) costs of registration, licensing and formation of the company including legal fees, commissioning expenses, etc.*

Table 7.2
ANNUAL FARMING COST AT FULL CAPACITY ('000 BIRR)

Items	Cost	%
Raw Material and Inputs	165	10.74
Utilities	153	9.66
Maintenance and repair	55	3.48
Labour direct	330	20.83
Farm overheads	30	1.90
Administration Cost	45	2.85
Total Operating Costs	**779**	**49.11**
Depreciation	378.80	26.26
Cost of Finance	379	23.92
Total FarmingCost	**1,537**	**100**

C. FINANCIAL EVALUATION

1. Profitability

According to the projected income statement, the project will start generating profit in the first year of operation. Important ratios such as profit to total sales, net profit to equity (Return on equity) and net profit plus interest on total investment (return on total investment) show an increasing trend during the lifetime of the project.

The income statement and the other indicators of profitability show that the project is viable.

2. Break-even Analysis

The break-even point of the project including cost of finance when it starts to operate at full capacity (year 2) is estimated by using income statement projection.

$$BE = \frac{\text{Fixed Cost}}{\text{Sales} - \text{Variable cost}} = 31\ \%$$

3. Pay-Back Period

The investment cost and income statement projection are used to project the pay-back period. The project's initial investment will be fully recovered within 7 years.

4. Internal Rate of Return and Net Present Value

Based on the cash flow statement, the calculated IRR of the project is 16.% and the net present value at 8.5% discount rate is Birr 3.13 million.

D. ECONOMIC BENEFITS

The project can create employment for 14 persons. In addition to supply of the domestic needs, the project will generate Birr 0.28 million per annum in terms of tax revenue when it starts to operate at full capacity. Moreover, the Regional Government can collect employment, income tax and sales tax revenue. The establishment of such a farm will have a foreign currency earning effect to the country by increasing the current export level of the produce to foreign market.