

Business Plan « Feed processing » by youth groups in Doyogena , Ethiopia



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1. Objectives and justification

The objective of the project is to produce valuable compound feed by a youth group in Doyogena, valorizing their own agricultural production. The youth group uses a large amount of expensive imported concentrates to fatten their sheep. Through the production of their own compound feed using a feed-producing chain, feeding and production costs will be reduced, and income increased.

Several basic arguments support the respiration of such a project:

1. The lack of sufficient forage resources, shortage of local animal feed sources and high prices of imported feed
2. The abundance of by-products like “spent grains” of the nearby beer factories that can be valorizes for feeding livestock
3. Improve feed quality as imported concentrates are often of poor quality
4. The very advantageous cost of the feed produced by the unit
5. Provide inexpensive and quality feed in times of shortage of fodder resources or when they are very costly or interrupted in the local market.
6. Need to create employment for youth

2. Promoter

Name of promoter: Sarara Bokata Male and female mix sheep fattening cooperative

Address : Kambata Tamibaro zone, Doyogena District.

District Level: Gebriel Binchamo (+251913704896), Head of Livestock office District.

Kebele Level: Alemu Bufebo (+251 920992019) and Desalech Markos (+251973526378) Data collectors.

Group Level: Halefe Handiso (+251 931612558), Sarara Bokata sheep fattening cooperative, Chairman.

The cooperative has 50 members but is collaborating with other eight groups, so targeting about 450 organized youth and farmers being engaged in sheep fattening and or breed improvement cooperatives.

3. Production of compound feed

3.1 Description of final product

The final product is compound feed based on several combinations of cereals, legumes and by-products. The product will be served directly to small ruminants as a rich supplementary feed.

Depending on the availability of crops and by-products in the promoter region and the specific need of small ruminants at different stages (ages), the following formulas will be used along the year:

A1 for growing sheep (more than one year): 40% oil seed cake, 10% faba beans, 20% wheat bran, 10% sorghum, 10% vetch, 6 % barley, 1 % salt, 3% premix.

A2 for breeding ram: 30% oil seed cake, 10% tree lucerne, 20% wheat bran, 20% enset leaves, 10% lupines, 6 % barley, 1 % salt, 3% premix.

A3 for ewe flushing: 30% oil seed cake, 40% wheat bran, 10% enset leaves, 10% faba beans, 6 % barley, 1 % salt, 3% premix.

3.2 Production capacity and monthly production

The machine has a production capacity of about 2 tons per day (250 kg / h). Assuming 25 working days per month a production capacity of 50 t / month will be used for basic calculations. It is planned to convert 520 tons of primary materials into about 500 tons of feed per year.

Table 1: Monthly use of primary materials (in tons)

Formula	J	F	M	A	M	J	J	A	S	O	N	D	Total
A1	15	25	25	25	25	25	25	25	25	15	15	15	260
A2	10	15	15	15	15	15	15	15	15	10	10	10	160
A3	5	10	10	10	10	10	10	10	10	5	5	5	100
Total	30	50	50	50	50	50	50	50	50	30	30	30	520

Table 2: Ingredients per month in tons

Ingredients	J	F	M	A	M	J	J	A	S	O	N	D	Total
Barley	1.8	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1.8	1.8	1.8	31.2
Wheat bran	6	10	10	10	10	10	10	10	10	6	6	6	104
Sorghum	1.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.5	1.5	1.5	26
Faba bean	2	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2	2	2	36
Oil seed cake	10.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	10.5	10.5	10.5	182
Tree lucerne	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1	1	16
Ensel leaves	2.5	4	4	4	4	4	4	4	4	2.5	2.5	2.5	42
Lupines	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1	1	1	16
Vetch	1.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.5	1.5	1.5	26
Premix	0.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.9	0.9	0.9	15.6
Salt	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.3	5.2
Total	29	48	48	48	48	48	48	48	48	29	29	29	500

Table 3: Cost of ingredients per year (in ETB)

Products	unit	Average price per unit (Birr)	Quantity per year (t)	Total price (Birr)
Barley	t	35,000	31.2	1,092,000
sorghum	t	30,000	26	780,000
Wheat bran	t	19,000	104	1,976,000
Faba bean	t	40,000	36	1,440,000
Enset leaves	t	6,000	42	252,000
Tree lucerne	t	8,000	16	128,000
lupines	t	60,000	16	96,000
Oil seed cake	t	50,000	182	9,100,000
Vetch	t	25,000	26	650,000
Salt	t	13,000	5.2	67,600
Minerals&vit	t	15,000	15.6	234,000
Total			500	15,815,600

3.3

Description of proposed procedure

Barley, wheat bran, faba bean and other feed resources are either brought by farmers to the processing unit or the cooperative collects it at farmers site and local and regional markets. Transport to local markets will be done by donkey cart. For long distance a lorry will be hired.

3.4 Feed manufacturing

The products (cereals, legumes) are crushed by a grinder (hammer mill) and are transported by a conveyer screw to a mixer where additives like vitamins and minerals are added. The appropriate proportions (depending on the formulas) will be mixed thoroughly and leave the mixer through an opening where 50 kg bags are attached. The bags will be closed by a hand operated stitching machine, labeled, and stored.



3.5 Description of site and equipment

For this type of project, the site must include:

- At least 200 m² covered with a height of 4 m (metal frame). The floor must be cemented, and the walls can be from corrugated iron sheets or bricks. The entry door must be wide enough to allow easy flow and movement of bags carrying employees. Proper locking of the building must be assured (security). The building must be well ventilated as the production process is very dusty. Access to water (mainly for cleaning purposes) and to 220 V must be guaranteed.

- The equipment must include:
 - A hammer mill (grinder)
 - A conveyor screw
 - A feed mixer

4. Economic analysis

4.1 Purchase of raw materials

Depending on each technical formula (appropriate proportions of each type of feed), raw materials will be bought from farmers or on the market (salt, mineral and vitamin supplements, barley, Faba bean, wheat bran, etc)

4.2 Sale of feed (including marketing strategy, demand, distribution channels)

The reference prices of sales of the compound feed to be produced is estimated at 34,000 Birr / ton. This price is lower than the price of industrial concentrate in Ethiopia which currently the ton fluctuates between 34,000 and 36,000 Birr/ton

Distribution

- via sellers of cattle feed (point of sale), retailers
- at the production point
- creation of some own sales outlets
- distribution to other cooperatives

Marketing strategy

- Distribution of free feed (of a limited quantity) at the beginning to make known and appreciate the new product by the livestock farmers of the area.
- Prepare and distribute the technical sheets on the feed, leaflets and posters
- Advertising in local radio and other media, including social media
- Awareness Days and announcement at public meetings

Consumers / Direct beneficiaries

- Short term: Minimum 750 livestock farmers (including two sheep fattening youth groups) in the Doyogena district and 8,000 sheep
- Long term: Livestock farmers in the other nearby districts.

4.3 Profitability of the Project

4.3.1 Operating costs

This item includes staff costs, inputs and overhead (for one year)

Designation	Unit	Quantity	Unit price BIRR	Total BIRR	Total
1 – Labor costs					
Producing and stocking compound feeds (# workers and months), including social costs (CNSS), evtl distributing	Manpower / month	36 (3 man x 12 month)	1200	43,200	
Total Labor costs					43,200
2 – Purchase of primary materiel (ingredients for feed like barley, etc)					
Barley	t	31.2	35,000	1,092,000	
Sorghum	t	26	30,000	780,000	
Wheat bran	t	104	19,000	1,976,000	
Faba bean	t	36	40,000	1,440,000	
Enset leaves	t	42	6,000	252,000	
Tree lucerne	t	16	8,000	128,000	
Lupines	t	16	60,000	96,000	
Oil seed cake	t	182	50,000	9,100,000	
Vetch	t	26	25,000	650,000	
Salt	t	5.2	13,000	67,600	
Minerals & vitamins	t	15.6	15,000	234,000	
Total Primary materiel					15,815,600
3- Other costs					
Maintenance of Equipment (machine, soap, etc)	Flat rate			5,000	
50 kg bags	bag	10,000	30	300,000	
Water	liter	1,000	1	1,000	
Energy (electricity) for feeding unit (300 days x 8h/d x 15kw)	kwh	36,000	2.124	76,464	
Management costs (stationery, etc)	Flat rate			1,000	
Transport of products (ingredients) and final feed, rent a lorry	day	50	400	20,000	
Marketing and communication (flyer, etc)	Flat rate			2,000	
Total other costs					405,464
TOTAL operating costs					16,264,264

4.3.2 Working Capital Fund (FR)

For this project, working capital is estimated at 25% of operating costs.

FR = 0.25 * total operating costs = aprox 4,000,000 Birr

4.3.3 Investment (InV)

In addition to working capital, some investments like construction of a store and office, acquisition of means of transport and equipment, and approach costs might be necessary.

Designation	Quantity	Unit price (BIRR)	Total (Birr)	Total
1 – Civil engineering				
Construction of building 200 m ²	lumpsum	400,000	400,000	
Total Civil Engineering				400,000
2 – Means of transport				
Donkey with chart	1	20,000	20,000	
Total Means of transport				20,000
3- Equipment				
Feed processing unit	1	620,000	620,000	
Scale	1	8,000	8,000	
Small materiel	lumpsum	4,000	4,000	
Fire extinguisher	1	1,200	1,200	
Palettes	2	1,700	3,400	
Total Equipment				636,600
4- Other costs				
Transport and installation of feed processing machine	1	35,000	35,000	
Total Approach Costs				35,000
TOTAL INVESTMENTS (InV)				1,091,600

4.3.4 Depreciation

Designation	Amount	Depriciation rate	Depriciation
Civil engineering	400,000	5 %	20,000
Equipement (including feed processing unit)	636,600	10 %	63,660
Means of transport	20,000	20 %	4,000
Other Costs	35,000	25 %	8,750
TOTAL DEPRICIATION			96,410

4.3.5 Financing/Funding

Designation	Amount
Own funds	10,000
Long term loan from Omo MFI (2 year, 9% interest rate/year for 4,000,000)	360,000
TOTAL FINANCING/FUNDING	370,000

4.3.6 Cost-effectiveness of the project

Désignation	Amount
1 - Costs	
Operating costs	16,264,264
Financial costs	370,000
Depriciations	96,410
Total Costs	16,730,674
2- Turnover	
500 tons final product x (34,000 BIRR / ton)	17,000,000
Total Sale	17,000,000
Net income before tax (RNAI)	269,326

Profitability calculation

- Economic profitability ratio**= (Total sales - income taxes) / (own funds + financial debt)
 $17,000,000 - 0 / 4,010,000 = 4.2$
- Financial profitability ratio**= (Total sales - income taxes - interest paid to financial debts) / (own funds) = $17,000,000 - 360,000 / 10,000 = 1,664$
- Profitability threshold** = (Depreciation of fixed costs) / [(Turnover - variable expenses) / Turnover]
 $96,410 / (17,000,000 - 16,264,264) / 17,000,000 = 2,242,093$
- Break-even (in days)** = (Profitability Threshold) / (Annual Turnover / 365)
 $2,242,093 / 46,575 = 46,14$

The entrepreneur begins making profit from the 47th day onwards.

Note: No tax as it is an agricultural product (exonerated)