

Business Plan « Feed processing » by Boqa Shuta Shaya CBBP and sheep fattening cooperative in Bonga, Ethiopia



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1. Objectives and justification

The objective of the project is to produce valuable compound feed by a farmer cooperative in Bonga, valorizing their own agricultural production. The farmer cooperative uses local available feeds which are not prepared as compound feed and concentrates as well as ingredients imported to fatten their sheep. Through the production of their own compound feed using a feed-producing chain, animals will gate a compound feed from locally available feed resources options and production costs will be reduced, and income increased.

Several basic arguments support the realization of such a project:

1. The lack of forage resources in several regions of the country. Shortage of local animal feed sources and high prices of imported feed
2. Improve feed quality as imported concentrates are often of poor quality
3. The very advantageous cost of the feed produced by the unit
4. Provide inexpensive and quality feed in times of shortage of fodder resources or when they are very costly or interrupted in the local market.
5. Need to create employment for youth and women

2. Promoter

Name of promoter: Boqa Shuta Shaya CBBP and sheep fattening cooperative

Addressee (Governorate / District): Kaffa Zone, Adiyo district, Boqa kabale

Contact (Telephone/e-mail): Heile-Mariam Gabre (+251988911301)

Cooperative chairwoman: Almaz Degu (+251946509025)

Cooperative accountant: Senait Tekle (+251942605462)

Cooperative Data collector: Atirse Arota(+251938525466)

The CBBP cooperative has 420 members but is collaborating with other six CBBP cooperatives and five youth groups, so targeting about 800 organized farmers being engaged in sheep or oxen fattening and dairy farming cooperatives. They have access to 220 V, but 380 V is in reach.

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, 20% faba bean bran, 20% wheat bran, 16 % barley, 1 % salt, 3% premix

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

A3 for ewe flushing: 30% oil seed cake, 40% wheat bran, 10% enset leaves, 10% residues of local alcoholic drinks, 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 600 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	15	25	25	25	25	25	25	25	25	25	25	280
A2	10	10	15	15	15	15	15	15	15	15	15	15	170
A3	5	5	10	10	10	10	10	10	10	10	10	10	110
Total	30	30	50	50	50	50	50	50	50	50	50	50	560

Table 2: Ingredients per month in tons

Ingredients	J	F	M	A	M	J	J	A	S	O	N	D	Total
Barley	4.8	4.8	8	8	8	8	8	8	8	8	8	8	89.6
Wheat bran	7	7	12	12	12	12	12	12	12	12	12	12	134
Fababean bran	3	3	5	5	5	5	5	5	5	5	5	5	56
Oil seed cake	10.5	10.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	196
Erythrina Tree	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	17
Enset leaves	2.5	2.5	4	4	4	4	4	4	4	4	4	4	45
Residues local alcohol	0.5	0.5	1	1	1	1	1	1	1	1	1	1	11
Bamboo grass	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	17
Premix	0.9	0.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	16.8
Salt	0.3	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5.6
Total	31.5	31.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	52.5	588

Tab 3 : Cost of ingredients per year in BIRR

Products	Unit (Ton)	Average price per unit	Quantity per year	Total price
Barley bran	T	18,000	89.6	1,612,800
Alcohol residues (atella)	T	15,000	11	165,000
Wheat bran	T	18,000	134	2,412,000
Fababean bran	T	15,000	56	840,000
Enset leaves	T	6,000	45	270,000
Erythrina tree leaves	T	5,000	17	85,000
Bamboo grass	T	5,000	17	85,000
Oil seed cake	T	32,000	196	6,272,000
Salt	T	9,000	5.6	50,400
Minerals&vit	T	15,000	16.8	252,000
Total				12,044,200

3.3 Description of proposed procedure

Collection

Farmers can bring ingredients, but cooperatives can also collect it. Cooperatives will collect it with donkey cart.

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.



3.4 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. 200 m² attached in the building.

- 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 28000 Birr / ton. This price is lower than the price of industrial concentrate in Ethiopia which currently the ton fluctuates between 32000 and 35000 Birr/ton. A business study will be carried out by the research center free of charge.

Distribution

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

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 7,000 livestock farmers (including 800 members from CBBP and cooperatives) in the Bonga district and 247,000 sheep
- Livestock farmers in the Boqa Kabele and around.

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)	1000	36,000	
Total Labor costs				36,000	
2 – Purchase of primary materiel (ingredients for feed like barley, etc)					
Barley bran	t	89.6	18,000	1,612,800	
Alcohol residues (atella)	t	11	15,000	165,000	
Wheat bran	t	134	18,000	2,412,000	
Fababean bran	t	56	15,000	840,000	
Enset leaves	t	45	6,000	270,000	
Erythrina tree leaves	t	17	5,000	85,000	
Bamboo grass	t	17	5,000	85,000	
Oil seed cake	t	196	32,000	6,272,000	
Salt	t	5.6	9,000	50,400	
Minerals&vit	t	16.8	15,000	252,000	
Total Primary materiel				12,044,200	
3- Other costs					
Maintenance of Equipment (machine greasing, soap, etc)	Flat rate			5,000	
50 kg bags	bag	2,500	20	50,000	
Water	liter	4000	0.3	1,200	
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			1000	
String to close the bags	Role	5	200	1000	
Marketing and communication (poster, etc)	Flat rate			2000	
Total other costs				136,664	
TOTAL operating costs (FE)				12,216,864	

3.1 Working Capital Fund (FR)

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

$$FR = 0.25 * FE \text{ (approx 3,000,000)}$$

3.2 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	1		100,000	
Total Civil Engineering				100,000
2 – Means of transport				
Donkey with chart	1	20,000	20,000	
Total Means of transport				20,000
3- Equipment				
Feed processing unit	1	620000	620000	
Scale	1	8,000	8000	
Small materiel	lumpsum	4000	4000	
Fire extinguisher	1	1,200	1,200	
Palettes	3	1,700	5,100	
Total Equipment				638,000
4- Other fix Costs				
Transport and installation of feed block machine	forfait	40,000	40,000	
Total other fix Costs				40,000
TOTAL INVESTMENTS (InV)				798,300

3.3 Depreciation

Designation	Depriciation rate	Depriciation
Civil engineering	5 %	5,000
Equipement (including feed processing unit)	10 %	63,800
Means of transport	20 %	4,000
Other fix Costs	25 %	10,000
TOTAL DEPRICIATION		82,800

4 Financing/Funding

Designation	Amount
Own funds	20,000
Short term loaning	
Mid term loaning	
Long term loaning (2 year, 18% interest rate/year for 3,000,000)	540,000 / year interest
TOTAL FINANCING/FUNDING costs	

5 Cost-effectiveness of the project

Désignation	Amount
1 – Costs	
Operating costs	12,216,864
Financial costs	540,000
Depriciations	82,800
Total Costs	12,839,646
2- Turnover	
500 tons final product x (28000 BIRR / ton)	14,000,000
Total Sale	14,000,000
Net income before tax (RNAI)	1,160,354

Profitability calculation

- Economic profitability ratio**= (Total sales - income taxes) / (own funds + financial debt)
 $14,000,000 - 0 / 3,020,000 = 4.6$
- Financial profitability ratio**= (Total sales - income taxes - interest paid to financial debts) / (own funds)
 $14,000,000 - 540,000 / 20,000 = 673$
- Profitability threshold** = (Depreciation of Fixed costs) / [(Turnover - variable expenses) / Turnover]
 $82,800 / (14,000,000 - 12,216,864) / 14,000,000 = 650,091$
- Break-even (in days)** = (Profitability Threshold) / (Annual Turnover / 365)
 $650,091 / 38,356 = 16,94$
 The entrepreneur begins making profits from the 17st day onwards.

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