



सत्यमेव जयते

GOVERNMENT OF GUJARAT

Establishment of Cattle Feed Manufacturing and Processing Unit

Agro and Food Processing

Government of Gujarat



Contents



Project Concept	3
Market Potential	7
Growth Drivers	8
Gujarat – Competitive Advantage	9
Project Information	10
- Location/ Size	
- Infrastructure Availability/ Connectivity	
- Machinery suppliers/ Manpower	
- Plant & Machinery/ Raw Materials	
- Leading Players/ Key Considerations	
- Potential Collaboration Opportunities	
Project Financials	16
Approvals & Incentives	18
Key Department Contacts	20

The concept

The project aims to establish a manufacturing and processing unit for Cattle Feed in Gujarat. Given abundance in terms of dairy processing unit in Gujarat there is high demand for the quality product.

Livestock and poultry sector in India

Livestock production and agriculture are intrinsically linked, each being dependent on the other, and crucial for overall food security. According to estimates of the Central Statistics Office (CSO), the gross value added from livestock sector at current prices was about INR4 trillion during 2013-14 which is about 21.58% of the gross value added from total agriculture, forestry and fishing sector at current prices and 22.75% at constant prices (2011-12). The livestock sector is contributing about 3.88% of total gross value added of the country at current prices and about 3.92% at constant prices (2011-12).

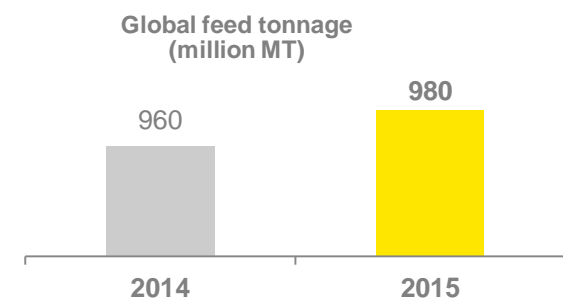
Livestock sector is an important sub-sector of the agriculture of Indian economy. It forms an important livelihood activity for most of the farmers, supporting agriculture in the form of critical inputs, contributing to the health and nutrition of the household, supplementing incomes and offering employment opportunities. According to NSSO 66th Round Survey (July 2009–June 2010), total number of workers in farming of animals is 20.5 millions as per usual status*. Farmers of marginal, small and semi-medium operational holdings (area less than 4 ha) own about 87.7% of the livestock. Hence development of livestock sector would be more inclusive.

India has vast resource of livestock and poultry, which play a vital role in improving the socio-economic conditions of rural masses. There are about 300.00 million bovines, 65.07 million sheep, 135.2 million goats and about 10.3 million pigs as per 19th Livestock Census in the country. The species wise population of animals in Livestock and Poultry population during the 2012 Censuses is given in the table below.

Livestock and Poultry Population				
SN	Species	Livestock Census 2003 (million)	Livestock Census 2012 (million)	Growth Rate (%) 2003-12
1	Cattle	79.75	99.83	25.17%
2	Buffalo	87.73	103.85	14.14%
3	Yaks	0.1	0.1	0.0%
4	Mithuns	0.3	0.3	0.0%
5	Total Bovines	283.4	300	5.9%
6	Sheep	61.5	65.0	5.8%
7	Goat	124.4	135.2	8.7%
8	Pigs	13.5	10.3	-23.7%
9	Other animals	2.2	1.48	-32.7%
10	Total Livestock	485	512.0	5.6%
11	Poultry	489	729.2	49.1%

The global feed and fodder industry

- ▶ Feed and Fodder play an important role in the food industry globally in terms of economic production of animal proteins. Feed is the largest and crucial element to ensure safe, abundant and affordable animal proteins throughout the world.



Source: Alltech 2015 Global Feed Survey



\$ 400 billion

Global commercial feed annual turnover

- ▶ Across 130 countries
- ▶ Employs over 25% of a million professionals

- ▶ The UN Food and Agricultural Organisation (FAO) estimates that the world will have to produce 60% more food by 2050 and that animal protein production will grow even more – meats will double, as well as dairy, and fish production will almost triple by 2050.

Top countries	Total tonnage (million tons)
China	182.7
US	172.5
Brazil	66.2
Mexico	30.7
India	29.4
Spain	29.2
Total globally	980

Region	No. of feed mills	Total tonnage (million tons)
Africa	1,150	34.6
Asia	13,736	350.5
Europe	5,165	232.6
Latin America	3,914	144.8
Middle East	288	24.8
North America	6,790	192.8
Total	31,043	980

Source: Alltech 2015 Global Feed Survey

Feed and fodder industry in India

- ▶ **Market size:** According to the report — *The Indian Feed Industry – Revitalising Nutritional Security Knowledge* — publishes by Yes Bank in 2015, India's animal feed industry, which includes poultry, aqua and meat, is expected to double to reach US\$30 billion in the next five years from the current US\$15 billion in order to meet the growing feed and fodder requirement of the country.
- ▶ **Current consumption:** As per the report, in India, cattle currently accounts for 7.5 million tonnes of the feed, aqua industry consumes 1 MT, while the poultry industry consumes around 13 MT, with soy meal and corn being the prime consumables.

Feed requirement in India

Type	Requirement
Compound feed requirement	80 million tonnes/year
Requirement for dairy animals	30 million tonnes
Present market for compound dairy feed	5.5 million tonnes/year
Private feed sector	1.2 million tonnes
Dairy cooperatives	2.5 million tonnes
Unorganized sector	1.8 million tonnes

Source: CLFMA 2013; AHI Analysis

Market Potential:

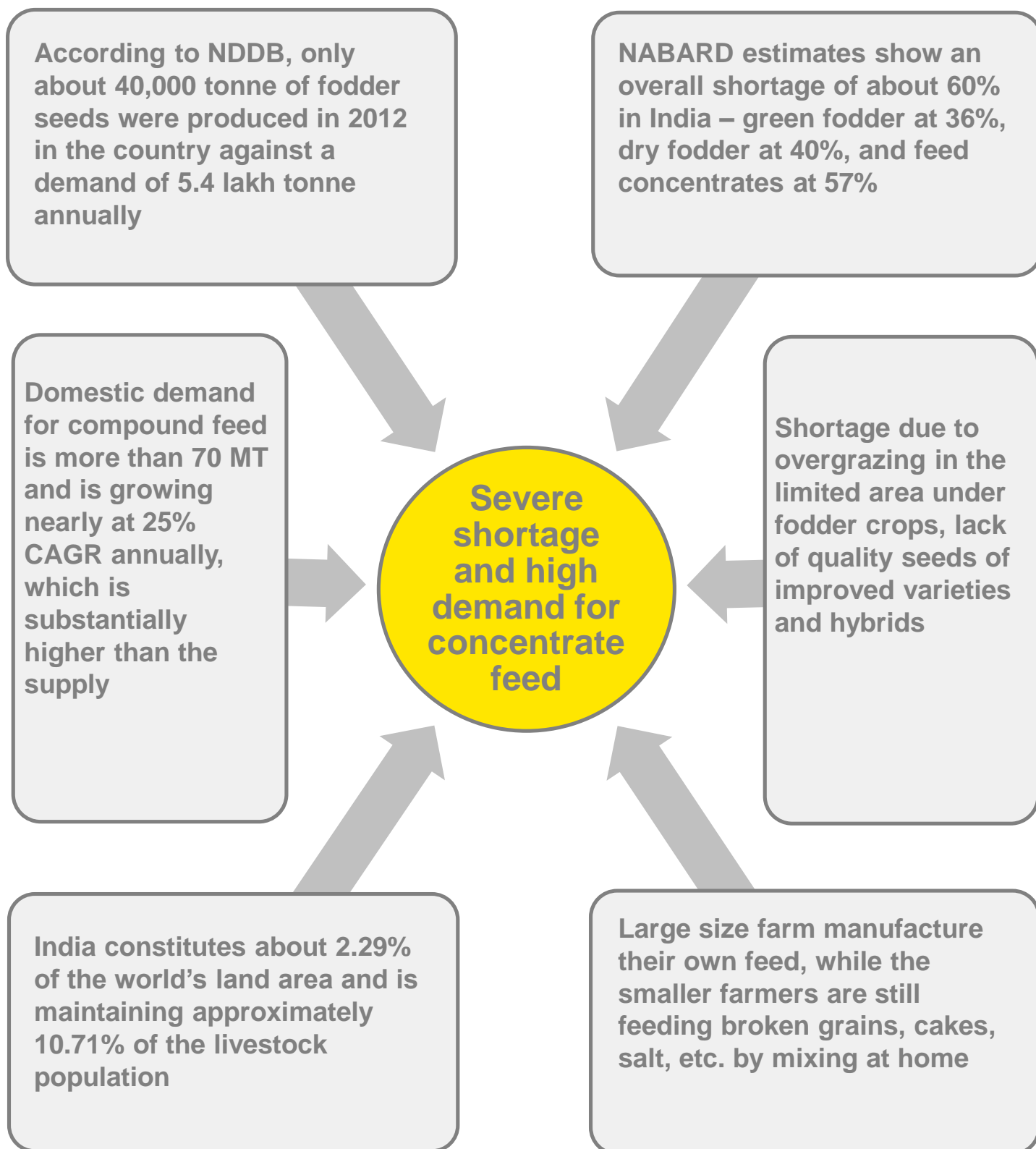
- ▶ India has witnessed a 10% increase in feed production to 29.4 million tons over 2013 tonnage, essentially due to good weather conditions and improving farming methods and technology.
- ▶ However, the current feed requirement in the country is huge at nearly 80 MT per year, so there's a severe shortage. The demand for animal protein and dairy products is expected to increase the compound feed consumption to 28 million tonnes by FY18.

Feed and Fodder gap in India

SN	Type of Fodder	Demand (Million Tonne)	Availability (Million Tonne)	Gap (Million Tonne)
1	Dry Fodder	416	253	163 (40%)
2	Green Fodder	222	143	79 (36%)
3	Concentrate	53	23	30 (57%)

Source: Annual Report - Department of Animal Husbandry, Dairying & Fisheries (14-15)

Scope for feed industry in India primarily stems for its shortage and high demand



Increasing awareness and better farming practices

- ▶ The demand for feed has risen on account of Increasing awareness about the use of cost effective and nutrition rich compound.
- ▶ Growing trend towards contract farming (Vertical Integration) has also been driving demand for feed in India, as buyer companies offer high quality supplies including feed, medications and veterinary supplies to farmers.

Health awareness and demand for organic food

- ▶ Raising awareness and increasing middle class population will encourage higher discretionary spending and changing food consumption patterns in the country.
- ▶ The organic food market in India is growing at a rate of 25-30% per annum and is estimated to reach approximately US\$1.36 billion by 2020.

Growth of livestock industry

- ▶ The Livestock sector expanded by 5.5% during 2013-14 against the total agriculture, forestry and fishing sectors growth of 3.7% during the same period at 2011-12 prices.
- ▶ To keep pace with the country's livestock GDP, the feed industry is expected to grow by 8% to 40 million tonnes in 2020 from 28 million tonnes in 2014-15.

High demand in poultry feed sector

- ▶ Poultry feed accounts for about 60% of the total feed market in India with an estimated demand of 21-23 million tonnes and is forecasted to grow at a CAGR of around 15% during 2015–2020.
- ▶ Entry of more organized players, higher integration and stable feed prices are driving the demand for poultry feed.

Government's FDI promotion initiatives

- ▶ Government of India has recently relaxed the norms of animal husbandry by doing away with the requirement of 'controlled conditions', which has restricted multinational R&D agencies from entering India.
- ▶ This is expected to invite leading bio-genetics firms to introduce their technology to improve animal breeds and thus increase yield for farmers and milk producers.

Gujarat - Competitive Advantage



Strong push by the Government of Gujarat (GoG) in the agri and animal husbandry sector and related services

Sector contribution to state GDP	
Livestock	5-5.5%
Agriculture & allied sector	25%

Total Population	
Livestock	27,128,200
Poultry	15005751

Dairy industry	FY04	FY15
Milk production (in lakh tones)	64.2	161.91
Per capita availability of milk (in gram/day)	333	492

Source: Directorate of Animal Husbandry, Gujarat

- ▶ Gujarat has a remarkable position in the country as far as livestock wealth and development concerned. Central programs like National Dairy Plan, National Dairy Mission, ASCAD, FMD-CP, Fodder Development Programs, NADRES are also contributing significantly in the Animal Husbandry sector of State.
- ▶ Gujarat's leading organization in dairy industry, Gujarat Co-operative Milk Marketing Federation Ltd. (GCMMF) is the largest producer of cattle feed in India with 12 cattle feed plants and a combined production capacity of more than 7000 MT per day.

Cattle and Buffalo Development in Gujarat FY15	
Cattle Breeding Farm	4
Buffalo Breeding Farm	1
Gasushalas	667
Panjarapoles	269
Intensive Cattle Development Programme	
Blocks	23
Sub-Centres	1042

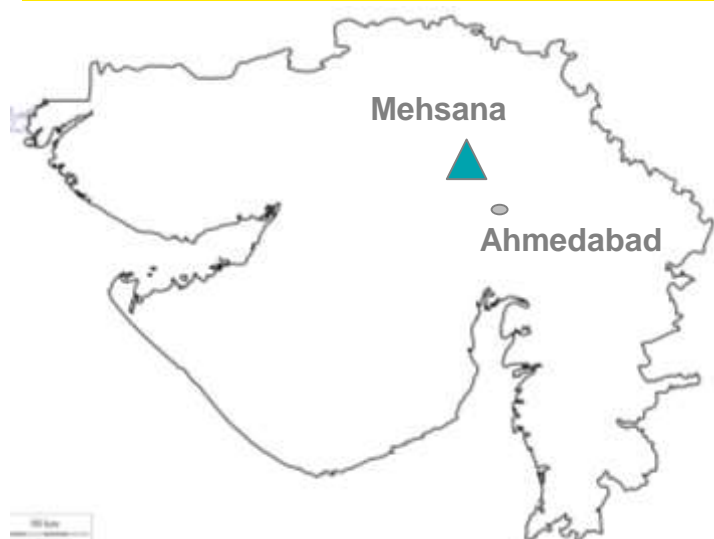
Fodder Development in Gujarat FY15	
Regional Station for Foarge Production	1
Foarge Research Station	1
Fodder Seed Production Farms	2
Village Fodder Production Farm	6
Demonstration Plots/Minikits Distributed	7000
Health Package Minikits Distributed	7500
Krishi Mahotsav Minikits Distributed	183,100
Chaff Cutter subsidised Distributed	3146

Source: Directorate of Animal Husbandry, Gujarat

Project at a Glance

Project Name	Cattle feed manufacturing unit
Location	Mehsana, Gujarat
Area of the Estate	4394 sq. kms
Focus Sector	Feed, fodder, agriculture & allied activities, food processing
Target Audience	Amul, Gujarat Ambuja, United Fodder, Gopaljee, Hindustan Animal Feeds, Godrej Agrovvet, Gokul

Proposed location site – Mehsana (Gujarat)



282,945 cows

538,269 buffaloes

102,697 goats

- ▶ Located in North Gujarat, about 75 km from Ahmedabad, and is divided into nine talukas.
- ▶ Major crops of Mehsana are wheat, cotton, castor seeds, brinjal, potatoes, tomatoes, okra, mango, citrus, sapota, fennel seed, psyllium and cumin.
- ▶ Asia's second largest dairy 'Dudhsagar Milk Cooperative Dairy' and largest market yard 'Unjha' is located in Mehsana.
- ▶ There is a huge potential of new MSMEs in
 - ▶ Agro based industries: cotton, mini oil mill, cotton ginning & pressing, cattle feed and poultry farm, groundnut farming & processing, cotton seed & absorbent cotton and surgical cotton bandage.
 - ▶ Livestock based industries: leather footwear and leather good, bone meal, cattle, poultry, garments and sports good, leather tanning and dairy.

Sources: Development Commissioner Ministry of Micro, Small & Medium Enterprises; Global Gujarat

Infrastructure availability

Logistics & Connectivity



Rail

- ▶ The total length of railway lines in the State as on 31st March 2014 was 5,258.49 route kilometres (~9% of India)
- ▶ India's first bullet train to run between Mumbai and Ahmedabad by 2023



Road

- ▶ Out of the total road length of 79,755 kilometres., the length of surfaced roads was 77,725 kilometres. (97.45%) in 2015
- ▶ National Highways – 3,884 kilometre
- ▶ State Highways – 18,017 kilometre
- ▶ IRI (International Roughness Index) for Gujarat is less than 4 meters/kilometre,



Air

- ▶ 9 operational domestic airports
- ▶ 1 International airport – Ahmedabad
- ▶ 6 new airstrips are being developed in Ankleshwar, Dahej, Palitana, Ambaji, Morbi and Dwarka



Port

- ▶ 46 ports along 1,600 kilometre coastline, including 1 major port at Kandla and 45 minor ports
- ▶ Gujarat leads in project clearance in coastal areas with a success rate of 93%

Utilities



Water

- ▶ An extensive water grid network of 75,000 kilometre for irrigation and drinking
- ▶ Currently, the Gujarat Water Supply and Sewerage Board (GWSSB) is providing water to 490 villages in 22 districts



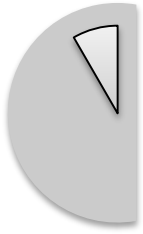
Power

- ▶ 2nd largest state in terms of installed power capacity after Maharashtra
- ▶ Power generation capacity : 29,431.13 MW
- ▶ Per capita power consumption was 1,839 units in 2014-15 against the national average of 1010 units

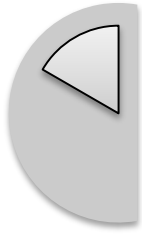
Gujarat has the longest surfaced road network in the country and is a power surplus state with the longest coastline and the largest number of air strips in the country

Project Information

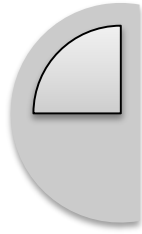
Product Manufacturing Process



Feed Ingredients Precision Weighing



Feed Ingredient Handling And Processing



Feed Ingredient Grinding



Feed Ingredient Mixing



Feed-mix Packing



Labelling

Project Information



List of Feed Plant Machinery Suppliers

Ashok Engineering Works, Hubli	Khare Engineering Industries, Miraj
B I Industries, Hyderabad	Kiran Engineering Works, Batala
B K Allied Industries, Punjab	Paragon Enterprise Industries, Baroda Dist.
Buhler (India) Ltd., Mumbai	Power Tech, Baroda
Cremach Designs, Baroda	Precision Products, Ahmedabad
Forms and Gears, Madras	Shakti Engineering Works, Batala
Hard case Engineering Works Ltd., Secunderabad	Sri Guru Siddheshwar Engineering Works, Hubli
Indian Fabricators, Ahmedabad	Spectoms Engineering Pvt Ltd., Baroda
Jaspal Steels & Allied Industries, Chandigarh	Standard Equipment Co., Amritsar
Jaymes Engineering Co.Ltd., Mumbai	Troika Processes Ltd., Mumbai

Sources: NABARD

Manpower requirement

Responsibility	Number
Manager	1
Accounts Officer	1
Maintenance Engineer	1
Sales Officer	1
Chemists	2
Floor supervisors	3
Operators	3
Stores Supervisor	1
Assistant Accountants	1
Electrical Supervisor	1
Mechanical Supervisor	1
Skilled workers	21
Total	37
Incentives and Perks (30% of the salary)	-
Total monthly payments	-

Sources: NABARD

Project Information



Raw material availability in Gujarat

Food Grains and Oilseed- Planning [Area in lakh ha; Prod. in lakh MT; Yield in Kg/ha.

SN	Crop Group	2014-15			2015-16			2016-17		
		Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1	Cereals	42.67	119.26	2795	44.08	131.89	2992	45.58	145.70	3197
2	Pulses	9.84	9.90	1006	10.12	10.74	1061	10.40	11.63	1118
Total food Grains		52.51	129.16	2460	54.20	142.63	2632	55.98	157.33	2810
3	Oilseed	33.88	63.69	1880	34.71	67.75	1952	35.57	72.21	2030

Crop	Tri-annum Average (2010-11 to 2012-13)			2013-14		
	Area (000 ha)	Prod. (000 MT)	Yield (kg/ha)	Area (000 ha)	Prod. (000 MT)	Yield (kg/ha)
Rice	782	1666	2131	787	1616	2054
Wheat	1321	4010	3035	1500	4800	3200
Bajara	779	1386	1778	693	1295	1868
Jowar	110	129	1172	128	165	1293
Maize	513	852	1660	461	692	1502
Ragi	17	14	821	14	14	984
Mung	210	100	477	183	103	564
Math	27	13	491	30	18	595
Udad	102	67	660	91	60	655
Tur	250	267	1068	210	239	1137
Gram	184	202	1099	247	284	1150
Total Food grain	4294.1	8705	2027.2	4344	9286	2137.7

Source: Agriculture & Cooperation Department, Govt. of Gujarat

Project Information



Equipment and machinery requirement

Machine	Quantity	Cost (INR lakhs)
Intake and grinding section	1	7.33
Mixing section	1	2.32
Bagging and services	1	3.4
Electricals	1	1.64
Steel structures	1	2.97
Erecting and commissioning	Lumpsum	0.95
Hopper speed control and hopper & misc. equipment	Lumpsum	1.8
Transportation, insurance	Lumpsum	3.55
Boiler	1	3.1
Pellet Mill	1	18.34
Lab equipments	Lumpsum	7.5
Weighing machine	Lumpsum	7.5
Office furniture and computers	Lumpsum	7.5
Total		67.94

Sources: NABARD

Raw material requirement

Poultry Feed	Cattle Feed
Maize, Jowar	Deoiled Cakes (cotton seed, sunflower, corngluten, etc.)
Rice Polish, Rice Kani	Deoiled Cakes (cotton seed, sunflower, corngluten, etc.)
DEO Rice Polish, DEO Groundnut cake, DEO Soyabean meal	Deoiled rice bran
Sunflower meal/extract	Tapioca Products
Limestone powder	Salt
Dicalcium Phosphate	Mineral (bone ash, lime, etc.)
Salt Pure, Shell Grit/Marble Grit	Molasses
Poultry Mineral Mixture	Urea
Vitamin & Probiotics Mix	
D.L. Methionine, L.Lysine	

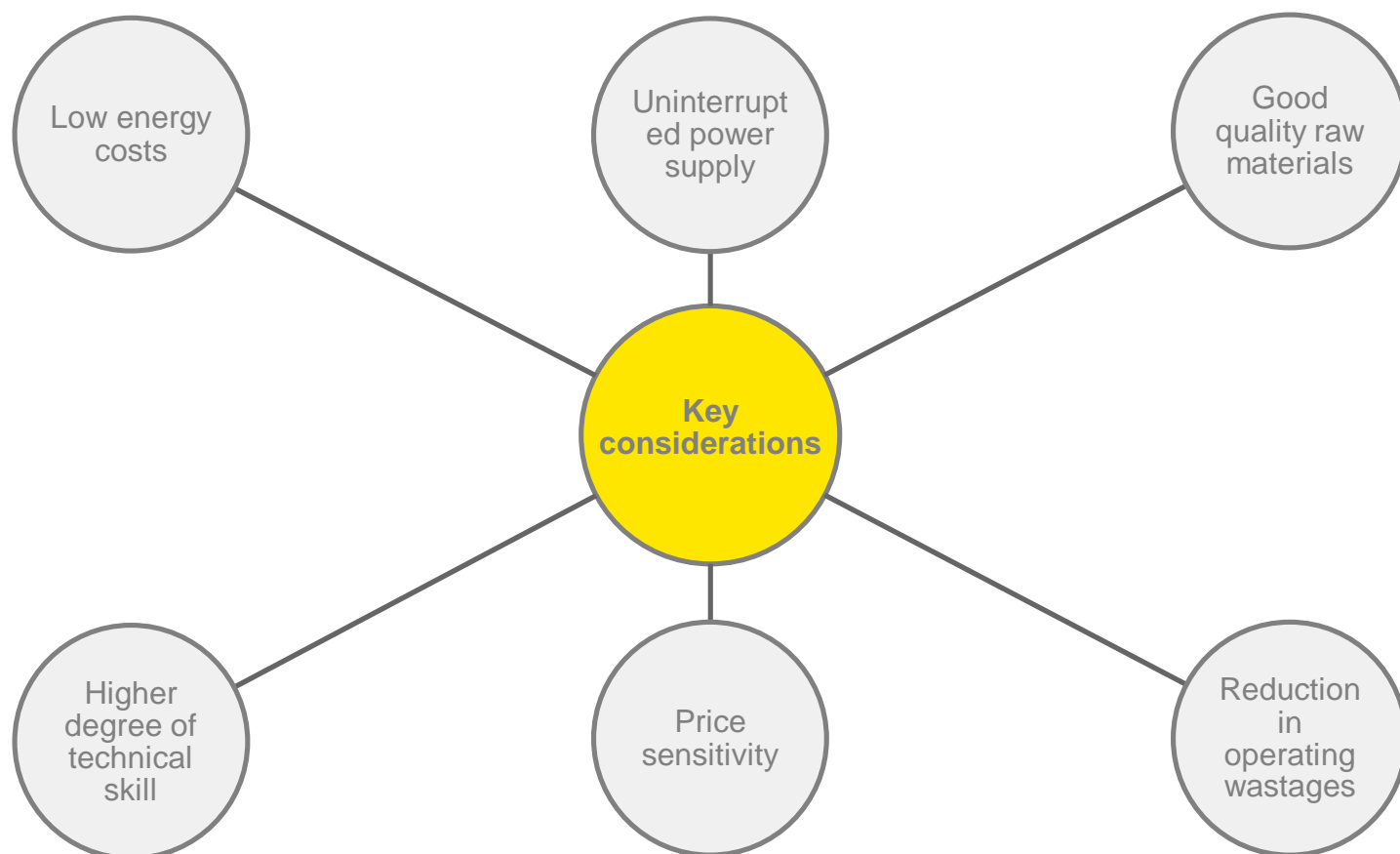
Sources: NABARD

Project Information



Leading players

Avanti Feeds Ltd.	Gujarat Ambuja Exports Ltd	Godrej Agrovet Ltd.
Gopaljee Dairy	Hindustan Animal Feeds	Dudhsagar Dairy
Kerala Solvent Extractions Ltd.	SKM Animal Feeds & Foods (India) Ltd	Gujarat Co-operative Milk Marketing Federation Ltd



Potential collaboration opportunities

- ▶ **National Bank for Agriculture and Rural Development:** NABARD serves as a apex refinancing agency for the institutions providing investment and production credit in India.
- ▶ **Food and Agriculture Organization of the United Nations:** FAO in India goes beyond the realm of food production, covering issues like access to food and nutrition, livelihoods, rural development and sustainable agriculture.
- ▶ **The International Crops Research Institute for the Semi-Arid Tropics:** ICRISAT takes a catalyst role to help rural communities develop their own solutions and engage the actors needed to bring the vision to reality.

Project Financials



Estimated Project Cost for feed plant with 100 MT capacity

S. No	Cost parameters	Quantity	Unit	Unit cost	Total cost (INR lakhs)
1	Land	7	acres	50,000/acre	3.5
2	Land and site development				
a.	Land levelling	70,000	cuft	2/cuft	1.4
b.	Barbed wire fencing	850	r.mts.	1000/r.mts.	1.28
c.	Internal roads	300,000	lumpsum	-	3
d.	Gate	50	r.mts.	1000 r.mts.	0.5
e.	Security cabin	30	Sq.mts.	3,000/sq.mt s.	0.9
	Sub total				10.58
3	Civil structures				134.33
4	Plant and Machinery				45.44
5	Misc. fixed assets				22.5
6	Vehicles				8
7	Electricals (including generator, transformer, and external lighting etc.)				20
8	Water supply system				2.5
	Total				253.93
9	Preliminary and pre-operative expenses				
a.	Company formation expenses	2.5% of item no.1-8			15.21
b.	Capitalisation of interest				0
10	Margin money on working capital	25 % of total working capital requirement			0
	TOTAL PROJECT COST				68.21
	MARGIN MONEY	25 % of the project cost			17.01
	BANK LOAN				51.16

Project Financials



Calculation of working capital requirements (in INR lakhs)

Particulars	Period	Cost (INR/ton)	Year			
			1*	2	3	4
Capacity Utilisation	---	---	70	80	90	100
Raw materials consumption including wastage (tonnes per day)			70.7	80.8	90.9	101
Raw materials inventory	45days	5433	172.85	197.54	224.24	246.93
Work in progress	1 day	5937	4.2	4.8	5.4	6
Packing material	30days	305	6.47	7.39	8.32	9.24
Power and Fuel	15days	160	1.7	1.94	2.18	2.42
Finished goods inventory	7 days	6193	30.65	35.03	39.41	43.79
Sundry debtors	7 days	6908	33.85	38.68	43.52	48.36
Less : Sundry creditors	7 days	5433	26.62	30.42	34.23	38.03
Total working capital requirement			223.09	254.96	286.83	318.7
Margin money on working capital			55.77	63.74	71.7	79.67
Incremental margin on working capital				7.97	7.96	7.97
Working capital loan			167.32	191.22	215.13	239.03
Interest on working capital loan (@18% per annum)			15.06	34.42	38.72	43.03

* During first year the plant will be operated for 6 months only

Approvals

- ▶ For approvals, the project report should be submitted to respective District Industries Centres (DICs). DIC will forward the proposal to Industries Commissioner who will submit the report to State Level Approver Committee (SLAC) for final approval.
- ▶ Additionally, The proposed unit will have to register itself with Secretariat of Industrial Approvals (SIA), Ministry of Industries and Government of India, by filing Industrial Entrepreneur's Memorandum (IEM), as it will have plant and machinery investment of more than INR 10 million.
- ▶ Since it will be an export oriented unit, the peanut butter needs to be approved by food authorities of exporting countries, apart from registration with Indian and state food administration.
- ▶ Bureau of Indian Standards has laid the quality norms in their standards and it is obligatory to meet provisions under the PFA act for all ingredients and quality aspects for marketing the product in the Indian market.

Incentives/ Initiatives from Government of Gujarat

Gujarat government announced its **Agri Business Policy – 2016** with emphasis on promoting agro and food processing industry by developing the entire value chain of exporting locally grown farm produces.

- ▶ Capital investment subsidy at 25% of eligible project cost subject to maximum INR50 million for cold chain, food irradiation processing plants and packaging houses
- ▶ Back ended interest subsidy at 7.5% on term loan with maximum amount of INR40 million for a period of 5 years for setting up infrastructure project in Agro & Food Processing sector (including packaging houses)

PROPOSED: The Government of Gujarat is proposing to establish Agri Export Zones (AEZ) for Groundnut, and few other agricultural products. The main objective of AEZ is to provide higher returns to the farmers by enhancing their accessibility to export and extending their capacity to produce export specific quality products.

Incentives from Government of India

The National Livestock Mission was launched in FY15 with an approved outlay of INR28 billion during the 12th Five Year Plan.



Launched a sub-mission on Feed and Fodder Development to overcome the shortage of feed and fodder and to improve the nutritive value in the country.



Under the National Livestock Mission there are Eight Regional Fodder Stations located in different agro-climatic zones of the country, including one in Gujarat. These stations have produced 315.28 tonnes of fodder seeds, conducted 9,660 demonstrations, and organized 149 training programmes and 139 farmers fairs/field days during FY14.



The GoI is in the process of formulating a National Policy on Feed and Fodder to increase feed and fodder production in various parts the country by providing financial assistance to the States and UTs

Incentives from Government of Gujarat

91 fodder depots distribute fodder at the concessional rate of INR2 per kg



Assistance of INR25 per animal per day to every Gaushala and cattle feeding houses managed by NGO/trusts in scarcity-hit areas.



Provide an incentive of INR5000 per hectare for the cultivation of fodder.



A special allocation of INR75 crore has been approved for providing free-of-cost seeds and fertiliser kits to the farmers with 2 acres of land.

Department of Animal Husbandry, Dairying and Fisheries

<http://dahd.nic.in/>

Gujarat Livestock Development Board

<https://glodb.gujarat.gov.in/index.htm>

National Rainfed Area Authority (NRAA)

<http://nraa.gov.in/index.php>

Agriculture and Co-operation Department

www.agri.gujarat.gov.in/index.htm

Gujarat Industrial Development Corporation

www.gidc.gov.in/

Industries Commissionerate

www.ic.gujarat.gov.in

This project profile is based on preliminary study to facilitate prospective entrepreneurs to assess a prima facie scope. It is, however, advisable to get a detailed feasibility study prepared before taking a final investment decision.

For further details:

iNDEXTb
INDUSTRIAL EXTENSION BUREAU
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