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PROSPECTS OF CATTLE FEED INDUSTRY IN INDIA AND STRATEGIES FOR UTILIZING THE MARKET POTENTIAL: A STUDY IN KERALA WITH A FOCUS ON FACTORS INFLUENCING BUYER BEHAVIOUR

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ABSTRACT

Indian feed industry is about 50 years old and it primarily consists of cattle feed and poultry feed segments. Cattle feed industry in India is gradually evolving into an organized sector and the feed manufactures are increasingly using modern and sophisticated methods that seek to incorporate best global practices. Indian cattle feed industry has got high growth potential, given the country' stop position among the world nations in respect of livestock population and also the high expected growth rate of about 4 per cent. Compounded Cattle Feed (CCF) products, particularly the branded ones is fast gaining popularity India, including in rural areas. The major drivers for the growing demand for cattle feed are the factors like (i) shrinkage of open land for cattle grazing, urbanization and resultant shortage of conventionally used cattle feeds, and (ii) introduction of high yield cattle requires specialized feeds. Earlier research studies by the present authors based on the feedback from the farmers have revealed the good growth prospects of the branded cattle feed industry, the feed consumption pattern and the relatively high share of branded feeds, feed consumption pattern based on product types (like, pellet and mash), composition of cattle feed market and the relatives hares of major brands, the major factors influencing the purchasing decisions etc. As a continuation of the earlier studies, this study makes a closer look into the exact nature of the growth potential of the market from a macro perspective, feedback from the field study with dealers and industry experts and relative significance of factors influencing buying decisions.

KEYWORDS: Animal Feed, Compounded Cattle Feed (CCF), Buyer Decisions, Dealers, Pellet and Mash

INTRODUCTION

Cattle feed industry, a major ingredient of animal feed industry is currently evolving from a fragmented industry into an organized sector. The feed manufactures are increasingly adopting modern and sophisticated methods in an effort to incorporate best global practices. This industry has got high growth potential in India, given India's top position among the world nations in respect of livestock population.

The cattle population is expected to grow at compounded annual growth rate of 4 per cent. The way the rural farmers makes their purchases of feed and have their buying priorities is quite different from those of their urban counterparts. Thus, the factors influencing the buying behavior of farmers and their relative significance needs to ascertained for the meaningful formulation of marketing strategies for cattle feed products. Equally important is the need to consider the feedback from dealers of such products and also industry experts in this field.

BRANDED CATTLE FEED INDUSTRY

The concept of branded animal feed as a packaged commodity, though not a very recent concept, is gaining popularity in the rural folks in the recent past. The packaged feed, as a product, possesses special features like hygiene, quality, convenience to handle, etc. to its advantage. The age old feeding pattern practiced in India is a mixed variety consisting of green grass, dry grass, cotton seed cake, coconut cake, rice bran etc. But, as time elapsed, due to changes both environmental and social, there has been gradual shift from the age-old pattern to Compounded Cattle Feed (CCF). The Indian milk scenario witnessed a total metamorphosis by the advent of Operation Flood; thus greatly increasing the per capita consumption of milk and sparking of high demand for cattle feed. On analyzing the factors related to the cattle feed demand, it is seen that there can be a positive change in the market demand for feeds. The major factors contributing to this are: (i) Shrinkage of open land for cattle grazing, urbanization and resultant shortage of conventionally used cattle feeds, (ii) Introduction of high yield cattle requires specialized feeds, (iii) urbanization has brought about a marked shift in people's eating habits with an increased intake of milk and other cattle-based products, thus resulting in added demand for livestock products. It is estimated that milk consumption will grow at 2.8 percent per annum.

LITERATURE REVIEW AND RESEARCH GAP

Sinha, Abhishek (2000) [1] has made an elaborate discussion on the current status, problems and challenges of cattle feed industry in India. The growing trend and favorable macro-economic and demographic factors resulting in bright prospects of the industry etc. have been discussed by the author.

Vaidya S. V (2001) in his paper, "The Indian feed industry" involving analysis of the feed industry in India has discussed in detail about the livestock industry in India, its growth pattern, issues connected with this industry. Accordingly, strategies that are suitable for counteracting these issues are suggested.

CLFMAI (2012) [2] Compound Livestock Feed Manufacturers of India (CLFMAI) in its industry analysis on Livestock Feed Industry in India has studied the trend and pattern of the growth in this industry, the growth prospects of the industry and also the drivers of this growth.

Varmudy, V (2012)[15] has pointed out the huge market potential of animal feeds in India comprising primarily of 2 segments viz. cattle and poultry feeds. It has been observed that, "India has enough opportunities to meet the new market demands, but there needs to be an improvement in the health and productivity of farm animals". Based on his analysis of the market, the author has suggested ten strategies for meeting the challenges faced by the animal feed industry in India.

John M P &Manoj P K (2013) (a)[3] in their research paper have analyzed the purchasing pattern and buyer behavior in respect of cattle feed products with reference to the cattle feed market in Kerala. The major factors influencing their purchasing decision like price and quality, convenience etc. have been pointed out in the paper. The purchasing pattern in respect of different product-types (pellet and mash) and brands (KFL, KSE etc.) have been discussed, and broad marketing strategies have been suggested.

John M P &Manoj P K (2013) (b) [4] in their research paper have made a detailed analysis of the dynamics of cattle feed industry in India with a focus on Kerala state. Feed consumption pattern, composition of the cattle feed market, pattern of cattle holdings vis-à-vis feed consumption, milk-yield vis-à-vis use of branded cattle feed, factors influencing purchasing decisions etc. have been studied. The paper has suggested strategies for effective marketing of cattle feed and hence increasing the market share.

John M P Manoj P K (2014) in their research paper has studied in detail the significance of product type (pellet-type and mash-type) and brand in the buying decisions of farmers. Accordingly, strategies have been suggested for exploiting the market potential based on the findings of the study. In view of the foregoing, it is noted that focused studies on factors influencing buying decisions of farmers and relative significance of such factors, extent and nature of demand for cattle feed products in the future particularly from the viewpoints of dealers and industry experts, etc. are virtually nil in the recent past. It is this research gap that this study seeks to bridge.

OBJECTIVES OF THE STUDY

- To make an overall study of the nature, trend and pattern of the demand for animal feed products in India with a focus on cattle feed, and accordingly to assess the future market potential for cattle feed products in India;
- To make a detailed study of the dynamics of cattle feed market in Kerala state of the Indian union, the market structure and competitive position, including the feedback from dealers of cattle feed products and industry experts;
- To make a detailed study of the factors influencing the buying decision in respect of cattle feed products, and relative significance of these factors in deciding their behavior based on a field study in Kerala;
- To suggest meaningful marketing strategies for effective cattle feed marketing, particularly from the perspective of KFL – a Government company, based on the findings of the study.

HYPOTHESIS OF THE STUDY (NULL)

- Each factor under study playsan equally important role in buyer decision making.

METHODOLOY OF THE STUDY

Methodology

The study is both analytical and exploratory. It is analytical to the extent that it seeks to analyze the current market structure, trend and pattern of growth, and future prospects of cattle feed industry in India. It is exploratory as it seeks to suggest suitable strategies and approaches for marketing of cattle feed products, based on the feedback from the field-based study.

- **Data Collection:** Both primary and secondary data are collected for the study. Primary data are collected from samples of 180 dairy farmers, and 45 dealers of cattle feed products from central Kerala using two different carefully designed, pre-tested Questionnaires. Besides, opinion 21 experts in the field of feed industry are collected using an Interview Schedule. Secondary data are collected from authentic sources like publications of the Ministry of Agriculture of the State and Central Governments, Reserve Bank of India, National Council for Agricultural Research (NCAR), reports of industry associations like CLFMAI, research journals etc.
- **Sampling Frame:** A Multi-stage Sampling methodology is adopted for data collection. In the First Stage (Geographical Sampling), among the3 regions in Kerala (ie. Southern, Central and Northern) the Central Kerala region is chosen for detailed study; as the Central Kerala is noted to be representative of the entire Kerala based

on earlier preliminary studies by the same authors. Accordingly, of the 14 Districts in Kerala, 6 Districts located at Central Kerala region (Malappuram, Palakkad, Thrissur, Ernakulam, Kottayam and Idukki) are chosen for detailed study. In the Second Stage (Random Sampling) a sample comprising of proportionate number of farmers and dealers of cattle feed products are selected from each of the 6 Districts in Central Kerala as noted above. Random Sampling (lottery method) is adopted to identify the members to be included in the sample from among the total population. As per the above sampling procedure, 180 farmers and 45 dealers are included in the sample. Besides, 21 experts in the field of feed industry are also selected using Purposive (Judgmental) sampling procedure.

- **Analytical Tools and Software Packages:** Various popular statistical tools of data analysis like Chi-Square test, t-test, ANOVA etc. are used for the analysis of data. Statistical packages like SPSS, STATA etc. are used for data analysis.

INDIAN FEED MARKET: PROSPECTS

India has got a prominent place in the global livestock population. In respect of buffaloes it is No.1 while in respect of both cattle and goat it is No. 2 each and is No.3 in respect of sheep. This shows the huge demand for feed products in India (Table 1).

Table 1: Global Livestock Population (2008-09)

Type	Percentage	Rank in the World
Cattle	12.7	2
Buffaloes	56.7	1
Goat	14.5	2
Sheep	06.0	3
Duck	03.0	5
Chicken	03.2	5
Camel	02.5	10

(Adapted, www.Faostat.org)(Varmudy, 2012)[16]

The estimates of livestock population in India are quite commendable. The projected figures of the livestock population in India are shown in Table 2.

Table 2: Livestock Population Estimates (Millions)

Year	Cattle	Buffalo	Sheep	Goat	Total
2015	202.3	102.4	4.4	11.8	322.0
2020	207.4	107.3	4.5	12.5	333.0
2025	212.5	112.2	4.6	13.2	344.0

(**Source:** X Plan Documents, Govt. of India)

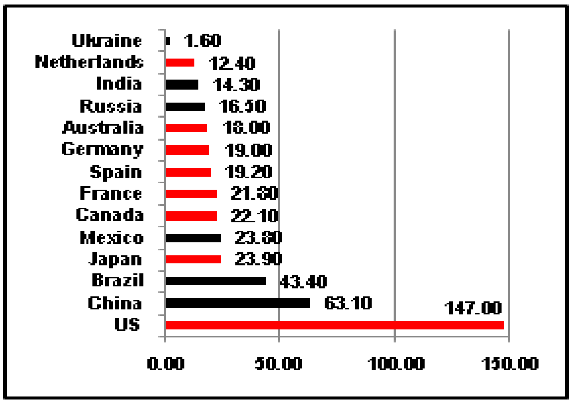
As the present level of manufacture of feeds in India is quite lesser than its market potential, India has got high level of attractiveness as a destination for manufacture of feeds.

While a few countries (viz. US, Japan, Canada, France, Spain, Germany, Australia and Netherlands) have high level of feed production vis-à-vis their market potential, a few other countries (China, Brazil, Mexico, Russia, India and Ukraine) have very lower level of production vis-à-vis demand. India is a very glaring example. (Table 3, Figure 1).

Table 3: Production by Feed Industry (Million MT)

Country	Production	Country	Production
US	147.0	Spain	19.2
China	63.1	Germany	19.0
Brazil	43.4	Australia	18.0
Japan	23.9	Russia	16.5
Mexico	23.8	India	14.3
Canada	22.1	Netherlands	12.4
France	21.8	Ukraine	01.6

(**Source:** Feed International, Rabobank, 2005)



(**Source:** Feed International, Rabobank, 2005)

Figure 1: Production by Feed Industry (Million MT)

In short, it may be noted that in spite of huge market demand and hence high growth potential for feed industry in India, the level of production is very low at present; pointing to its high growth prospects.

FINDINGS OF A FIELD SURVEY IN KERALA

- **Expected Growth of Animal Population**

Growth of animal population will have a direct and positive impact on cattle feed consumption. Increase in cattle feed consumption is linked to increase in animal population. While 54.44 per cent of farmers expect an increase in animal population, only 16.11percent expect a negative growth. This is a positive indication for the cattle feed industry Table 4.

Table 4: Expected Growth in Cattle Population

Sl. No	Response	Nos	Percent
1	Positive	98	54.44
2	Negative	29	16.11
3	No change	43	23.89
4	No response	10	5.56
	Total	**180**	**100.00**

(**Source:** Survey Data)

- **Present Feed Consumption Pattern**

The pattern of feed consumption is studied to have new insights into the current behavior of farmers; as knowing this aspect, helps to frame strategies for capacity building in feed production and promotion of cattle feed could be made more effectively. Table 5 shows that 31.67 per cent gives Natural and branded feed, 26.11 per cent gives all the category of feeds. In effect, as high as 57.68 per cent uses branded feeds and also other feeds. This points to 'nearing maturity' market condition, one that absorbs the ready-made CCF as regular feed for milking cows.(Table 5)

Table 5: Present Feed Consumption Pattern

Sl. No	Response	Nos	Percent
1	Natural feed	5	2.78
2	Fodder	8	4.44
3	Branded feed	34	18.89
4	Natural and fodder	6	3.33
5	Natural and branded	57	31.67
6	Fodder and branded	23	12.78
7	All the feed category	47	26.11
	Total	**180**	**100**

(**Source:** Survey Data)

- **Composition of Cattle Feed Market**

Among the users of the branded cattle feed products as high as 53.33 percent of the pellet type products are supplied two major brands KSE and KFL. The rest 46.66 percent is shared by all other brands. However, in respect of Mash type products, only one major brand (viz. KSE) is offering this product, and not KFL. Hence, the balance as high as 91.11 percent of the total supply relates to all other brands including unbranded products. Thus, unlike in the case of Pellet type products, the prominence of major brands is very poor in respect of Mash type products Table 6.

Table 6: Relative Share of Cattle Feed Market

Sl. No	Brand Name (Manufacturer)	Pellet Type (Percent)	Mash Type (Percent)
1	KSE	27.78	08.89
2	KFL	25.56	0
3	Others	46.66	91.11
	Total	**100.00**	**100.00**

(**Source:** Survey Data)

- **Cattle Holdings and Consumption Pattern**

Analysis to find the average cattle holding and consumption pattern in respect of both pellet and mash type of feeds has been done in the three regions under study (Table 7). It is noted that mash consumption is quite higher than pellet consumption. Mash consumption is 82.32 kg per cattle per month whereas pellet consumption is 65.62 kg. The average mash consumption per month is 680 kg while that of pellet consumption is 542 kg table 7.

Table 7: Cattle Holdings and Feed Consumption

Sl. No	Particulars	Unit	Quantity
1	Average cattle holding per month	No.	8.26
2	Average pellet consumption per month	kg	542
3	Average mash consumption per month	kg	680
4	Pellet consumption per cattle per month	kg	65.62
5	Mash consumption per cattle per month	kg	82.32

(**Source:** Survey Data)

- **Milk-yield and Use of Branded Cattle Feed**

Frequency of farmers who felt the yield trend is positive is as high as 79.44 percent and only 12.22 percent among them has felt a negative need, while 7.22 percent felt no change in the per cent felt there is no change. It is noted that there is a positive attitude towards branded cattle feed Table 8.

Table 8: Milk Yield and Branded Cattle Feed

Sl. No	Response	Nos	Percent
1	Positive	143	79.44
2	Negative	22	12.22
3	No change	13	7.22
4	Non response	2	1.12
	Total	**180**	**100**

(**Source:** Survey Data)

- **Other Major Findings from the Field Study**

It is found that 26.11per cent of the farmers use all types of feeds and 18.89per cent depends only on branded feeds. Hence, there is good scope for bringing conventional feed users towards branded products. The consumption of pellet form of feed is increasing and has got regional brand leaders. The consumers of pellet feed showed a positive attitude towards the animal farming and further use of pellet.

Price, convenience, availability and quality are the major factors influencing the purchase decision of farmers. Quality as a single reason has low priority. Over half of the farmers seek advice of Doctors.

Factors Influencing Buying Decisions

Based on the field study in Kerala, the major factors influencing the buying decisions of buyers are as shown in Table 9.

Table 9: Factors Influencing Buying Decision

Factors	Response (f)
Price	13
Convenience	23
Availability	19
Quality	1
Price and Convenience	4
Price and Availability	8
Price and Quality	70
Convenience and Availability	2
Convenience and Quality	2
Availability and Quality	19
All the factors	18

(**Source:** Survey Data)

- **Testing of Hypothesis (Influencing Factors)**

Considering all factors to be of equal importance, expected frequency for the data is defined as follows:

Chi-Square variate, $\boxed{C = \sum [(f-e)*(f-e)/e]}$ where,

f=observed frequency, e=expected frequency

e = Average of all factors considered for study =16.27

The Null and Alternate Hypotheses for this study may be defined as follows:

H_0: All factors play important role in buyer decision towards a brand.

H_1: Any specific character plays a key role to attract buyers.

The contingency table for the data given in Table 9 with the pooled rows to satisfy application of Chi-Square test may be prepared as in Table 10.

Table 10: Computation of Chi-Square Value

Observed (f)	Expected (e)	(f-e)	Chi-Square
13	16.272	-3.272	0.658
23	16.272	6.728	2.782
19	16.272	2.728	0.457
5	32.544	-27.544	23.312
8	16.272	-8.272	4.205
70	16.272	53.728	177.403
23	48.816	-25.816	13.653
18	16.272	1.728	0.184
		Sum	**222.653**

(**Source:** Based on Survey Data)

Chi-Square value calculated is 222.65. Chi-Square value tabulated with 8 degree of freedom at 5% LOS is 15.507

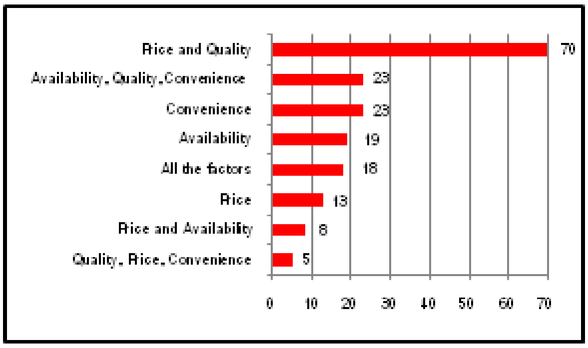
- **So, Null Hypothesis is Rejected at 5% LOS.**

From the above test result regarding the significance of individual factors on buying behavior of farmers, it may be inferred that all factors are not alike, and that some factors exert more influence on their buying decisions. Accordingly, it is worthwhile to rank or prioritize the factors as in Table 11 in order to facilitate meaningful strategy formulation. Based on the above logic the factors influencing buyer decisions are shown in Figure 2 in the priority order.

Table 11: Factors in the Order of Priority

Factors	Response (f)
Price and Quality	70
Convenience	23
Availability, Quality, Convenience	23
Availability	19
All the factors	18
Price	13
Price and Availability	8
Quality, Price, Convenience	5

(**Source:** Based on Table 10, suitably prioritized)



(**Source:** Based on Table 11, Prioritized factors)

Figure 2: Factors in the Order of Priority

Survey of Dealers of Cattle Feeds

As already noted 45 dealers of cattle feed products and 21 industry experts have been surveyed as part of the study. These 45 dealers are drawn from 6 districts in central Kerala (i.e. 08 each from Ernakulam, Thrisur, Palakkad, Malappuram; 06 from Idukki and 07 from Kottayam). Majority of cattle feed dealers (60 percent) are in the business for more than 10 years, while 20 percent have upto 05 years and the rest 20 percent 6 to 10 years' experience. Two-third of the dealers (66.67 percent) are dealing with feed supplements. While 44.44 percent are handling conventional feeds, the rest 55.56 percent are not handling conventional feeds. It is noted that 48.89 percent of them are dealing with KFL (Kerala Feeds Ltd.) products while the rest 51.11 percent are not dealing with KFL products. It is noted that the major reasons for not dealing with KFL products are improper dealings, non-availability, poor demand etc.

It is worth pointing out here that as high as 86.67 percent of the dealers have reported that farmers (customers) seek product quality from them, and only the balance 13.33 percent do not seek their advice regarding quality. Thus, dealers can play a definite role in sales promotion of cattle feed products. Similarly, gifts given to dealers have got definite influence on promotion of products, as 66.67 percent of dealers have reported accordingly. Sales commission is the most favored benefit expected by the dealers, as per the feedback from 88.89 percent of the dealers. The business meets do not have much bearing on market promotion.

Survey of Experts in the Field

As far as the experts are concerned, Pellet form is the most preferred form of feed with specified advantages like balanced diet, convenience to use and better yield. However, they expressed concern that there are also complaints about CCF, though not ascertained about the merit of complaints. The experts have also high opinion about organic feed which may be a pointer to the future, regarding the form of cattle feed preferred. Experts have given a positive opinion on the use of CCF and 84 per cent prefer pellet form. There is a definite positive reaction regarding trend of organic feed.

Suggestions Based on the Findings

The demand for compounded cattle feed (CCF) is registering a gradual increase. Market consolidation is happening, with a preference for CCF that too the pellet-type products, rather than the conventional ones. KFL, KSE, MILMA, OK etc. are the leading brands in Kerala that are enjoying sizeable market share. KFL, Government of Kerala owned company, has attained a good market standing since its commissioning. However, KFL has not been able to increase its sales level to further heights, particularly in southern and northern regions, as the production levels are getting saturated. Suggestions for improving the performance of cattle feed manufacturers, particularly KFL, are as follows:

- In order to retain the market share and to achieve a higher market share, it is essential for KFL to increase the production through expansion, merger or acquisition. Thus to overcome its inability to meet market demand in Southern and Northern regions, in addition to the ongoing expansion of the existing unit, setting up of new units would be the quite advisable. KFL can further enhance its market share by locating plants both in Northern and Southern parts of Kerala, for more effectively catering to the needs of those regions, preferably adjacent to the railway line suitable for railway siding.

- Though Pellet form of feed have to be preferred by KFL as suggested by the growing market demand, the company must launch Mash product also. This helps it to catch up with companies like KSE by broadening its product range, and hence improving its brand image and sales.

- KFL must initiate planned strategies for building up its brand through effective promotion and advertising; because many buyers are not aware of KFL brand.
- Dealers can play an important role in promotion as vast majority of the farmers seek advice regarding product quality from dealers. Thus, KFL must gain the acceptance of dealers through gifts, better dealings, sales commissions etc.
- Typical cattle feed manufacturers, including KFL must try to enhance the service quality and value delivered in order to improve their sales and market. Invariably, the cattle feed produced should be of the high quality as the consumers are found to be quality conscious.
- As the factors influencing buying decisions are not alike in their individual impact, based on the relative significance of each such factors, marketing strategies have to be designed and redesigned periodically. Factors like Price and Quality, Convenience, Availability etc. need to be given higher priority by companies like KFL.
- A restructuring of market plan based on logistics need to be implemented. To increase the market penetration, systematic, strategically planned, aggressive schemes are to be developed. Options like creation of district-wise sole selling agents, introduction of new schemes like extra quantity, distribution of food supplements along with the cattle feed, gifts to the dealers, simple and effective brochures, advertisements, massive promotion for quality cattle feed to be used in households as supplementary feed etc. in a professional way, may be thought of.

In short, meticulously planned and carefully designed marketing strategies are vital for sustained business growth and profitability of cattle feed manufacturers in Kerala. For the public sector player viz. KFL which is already having a good reputation and brand equity, an expansion strategy to more effectively cater to Northern and Southern parts of Kerala is found to be an imperative for survival and growth, rather than an option.

CONCLUDING REMARKS

In view of the foregoing, it may be noted that there is excellent potential for feed products in India, particularly cattle feed. Compounded Cattle Feed (CCF), though a relatively new entrant in the market, is fast gaining momentum in the recent past. The livestock population in Kerala mainly consists of cows, buffaloes and goats. On the basis of the survey results, it can be reasonably assumed that the demand for CCF will grow by at least 5 per cent in the future. Because of good prospects and growing demand for CCF, by adopting marketing strategies as the ones suggested above the market can be very effectively tapped by players like KFL.

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