Potential and Prospects of Dairy Business in Uttarakhand: A Case Study of Uttaranchal Cooperative Dairy Federation Limited

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Abstract

India is the leading milk producer in the world and the dairy cooperatives are the backbone of Indian dairy industry. This study has analyzed the inefficiencies existing in improving milk production, procurement pattern, marketing channels, and price spread of a dairy cooperative, Uttaranchal Cooperative Dairy Federation Ltd (UCDFL), also known as '*Anchal*' in the Kumaun region of Uttarakhand and has proposed a model for eliminating these inefficiencies. It has been found that UCDFL is focused mainly on liquid milk marketing and has not adopted product diversification, which is the need of the day. Nainital and Almora districts of Kumaon region have been selected for the study; these cover almost 40 per cent of cattle population in the division, except Udham Singh Nagar. It has been found that due to insufficient margins, the number of agents working for other private dairies has increased. Different marketing channels for milk have been identified and price spread has been calculated for all the channels. Lack of business development services related to dairy industry has been found leading the farmers to disassociate from *Anchal*. The study has suggested that *Anchal* should evolve a definite policy with regard to procurement of milk in both lean and regular periods and to sustain its members, incentive package should be provided. *Anchal* should find ways to establish fodder banks at strategic locations for providing fodder during emergencies and periods of fodder scarcity. Local sale of milk at the society level should be encouraged to increase the popularity of *Anchal* brand.

Introduction

It was in 1904 when the seed of cooperation was sown in India with the passage of first Cooperative Act. Since then, the cooperative movement has made rapid strides in all fields of socio-economic activities. The

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contribution of cooperatives to India's dairy industry is enormous. The cooperatives have ushered in white revolution in the country, because of which, India is the leading producer of milk in the world. The milk revolution started in India in 1946 in a small town called Anand (Gujarat), has made a big contribution to the socio-economic development of rural milk producers. It has also established an effective partnership between farmers and professionals in the dairy industry. Undoubtedly, dairy cooperatives are the most professionally managed sector of the Indian cooperatives.

Dairy development helps the rural poor in having additional regular income. At present, unorganized milk traders put a stiff competition to the organized milk sector. Therefore, organized milk marketing has a dual task to attract more and more producer-sellers to its fold by offering good price, and to help producers to produce more milk. Co-operatives provide their members bargaining power, fair deal, and assistance in improving the productivity of the dairy business. But, the co-operatives have to face some problems also like low literacy of member-farmers, lack of their ownership over productive assets, lack of credit/finance, lack of training facilities, etc. Today in India, there are about 75,000 dairy cooperative societies, spread all over the country with a membership of 10 million. There are nearly 70 million households engaged in milk production, of which more than 10 million are in the co-operative sector. However, except for the brand name 'Amul', most of the state federation brands are regional. These include 'Verka' in Punjab, 'Nandini' in Karnataka, 'Vijaya' in Andhra Pradesh, 'Saras' in Rajasthan, 'Anchal' in Uttarakhand, 'Mother Dairy' in Delhi and Kolkata. Dairy cooperatives account for a major share of processed liquid milk marketed in the country.

As far as dairy industry is concerned, forecasting of demand, procurement of raw milk, and transportation of processed milk are the vital components of supply chain management. On this front, Indian co-operatives are little susceptible and lag behind the multinational corporations and other private firms. Non-observance of timeliness, inefficient distribution of milk, frequent break-downs of milk vans, delays in loading and unloading at depots lead to disturbed supply of milk and its products. Though co-operatives in the Kumaun division of Uttarakhand are showing good results, there are certain inefficiencies in the supply chain management, which are hindering their fast growth. One of these cooperatives named as Uttarakhand Cooperation Dairy Federation Limited (UCDFL), popularly known as *Anchal*, focuses mainly on liquid milk marketing and has not adopted product diversification, which is the need of the day. Other brands are entering the market by 'mis-using' this channel and then penetrate into the liquid milk network. This study has analyzed the inefficiencies that exist in improving

milk production, procurement pattern, marketing channels, price spread of *Anchal* in the Kumaun region of Uttarakhand and has proposed a model for eliminating these inefficiencies.

Research Methodology

Primary data for the study were collected through personal interviews of the dairy farmers, cooperative employees, and other stakeholders about the status of dairy farmers' milk production, consumption pattern, problems and opportunities with UCDFL association, milk procurement pattern by other commercial dairies, frequency of procurement and price, etc. Secondary data on milk cooperatives for studying the procurement and marketing pattern were culled from magazines, Internet and from official records of the veterinary department and Dairy Research Development Authority to get estimates of livestock population.

For the study, districts of Almora and Nainital of the Kumaun region were selected on the basis of their annual milk production and *Anchal*'s network coverage. Three blocks were selected from each district. These were Betalghat, Ramgarh and Haldwani from Nainital and Hawalbagh, Lamgarha and Dwarahat from Almora. Fifty farmers were selected from each selected district using multi-stage sampling technique.

Results and Discussion

Characterization of Dairy Sub-sector

The state of Uttarakhand is one of the difficult and economically developing region of India. Subsistence agriculture holds very little potential for further development in this region, primarily because a large proportion of the terrain of both the selected districts was covered by hills. The region has a high potential of dairying because of the following facts:

1. Practically, every household in the rural and semi-urban areas own livestock, a mixture of cows and buffaloes.

2. Most of the households own more than one cattle head, so milching is available throughout the year by rotation.

3. Small scale dairies and milk collection centres are coming up on their own throughout the region, competing at times with the state-owned dairy (*Anchal*), sometimes complementing it by acting as its outreach nodes, and at times servicing areas that are neglected by the government network.

4. There is a dormant demand for fodder and grass, and the few entrepreneurs who have commercially ventured into providing 'feed' on business lines have achieved success.

5. People have shown interest for the AI facilities to upgrade the local breed of animals. Presently, local breeds dominate in the Kumaun hills.

Thus, dairying has a high economic potential in the region.

Characteristics of Population

The cattle population in the selected districts has been shown in Table 1. Both these districts covered nearly 40 per cent of the total cattle population of the region (except Udham Singh Nagar). It was found that a majority of cattle in Almora were of the local breed and there was only a marginal difference between the numbers of female cows and female buffaloes of local breed. In the cross breeds, the number of female and male cows was more than that of female and male buffaloes in the district. While there were almost equal numbers of male cows of the local breed (110000) as cows, there were few crossbred bulls. In the case of male buffaloes also, crossbreds were very few (276) as compared to local breeds (5656).

In the Nainital district, the population of cross bred female cows was significantly higher than that of female buffaloes, but the trend was reverse in the case of their local breeds. Despite being adjacent districts, this marked contrast was due to the average height of hilly regions Almora district is higher than that of Nainital and also three out of the eight blocks in the

Table 1. Cattle population in districts of Almora and Nainital and Kumaun region

Cattle	Almora		Nainital		Kumaun region (except Udham Singh Nagar)	
	Local	Cross breed	Local	Cross breed	Local	Cross breed
Male cow	118933 (29.8)	2470 (11.6)	62697 (15.7)	4692 (22.1)	399232 (100)	21232 (100)
Male buffalo	5656 (10.6)	276 (2.6)	11117 (20.9)	1672 (16.2)	53272 (100)	10314 (100)
Female cow	108936 (23)	7404 (8.6)	80678 (17.1)	22516 (26.4)	472825 (100)	85318 (100)
Female Buffalo	101022 (19.34)	3040 (7.2)	98149 (18.8)	12168 (28.8)	522215 (100)	42118 (100)

Source: *Livestock Census*, 2003
Note: Figures within the parentheses show percentages

Nainital district were situated in plains, where buffaloes were found more suitable for production. Cows were more suited for higher altitudes than buffaloes.

Most of the farmers in the Almora district had more than one milch animal. They could procure milk throughout the year by rotation. Also, farmers were becoming more conscious gradually and were ready to bring better germplasm from outside for better productivity. Overall, in Almora district, population was more of buffalo than cow. The reason for maintaining more than one animal despite having difficult livestock-rearing conditions, was that the farmers earned their livelihood from this profession.

In the Nainital district, most of the farmers had a single animal — cow or buffalo. This district has both hilly and plain regions. In the plains, crossbred animals (mostly Jersey and Holstein Friesian) were very popular and therefore, the average productivity per animal was higher (1.97 litres) in Nainital than Almora. In its three blocks lying in the plains, trend was of rearing buffaloes in the households, while in the hilly regions, the preference was for rearing cows. The studies on milching status in the Nainital district have revealed that out of nearly 98 thousand milching cows, 80 thousand were in milk at the time of this study.

Productivity of Milch Animals by Season

The milk productivity was found to vary not only between cows and buffaloes, but also across seasons. Therefore, information on productivity of milch animals was collected separately for two seasons, viz. summer and winter. In the Nainital district, Haldwani block was found having households with highest (8.84 litres) average milk production per day. It was because of the easy availability of both green and dry fodders throughout the year. The Betalghat and Ramgarh blocks, due to their high altitudinal location, had lower average milk production per day. The average productivity figures were also higher in this district and people could sell milk round the year. In fact, after Udham Singh Nagar, Nainital was the second in average household milk production in the Kumaun division.

Players in Milk Marketing

Three types of main players in milk marketing in the area were:

1. Milk collectors appointed by the dairy societies formed by the *Anchal* dairy. They get honorarium of Rs 200 to Rs 2000 per month from the *Anchal* dairy, depending on the quantity of milk collected and supplied to the dairy. These milk collectors are also called secretaries, as they are members of the dairy 'societies' formed by *Anchal* dairy and collect
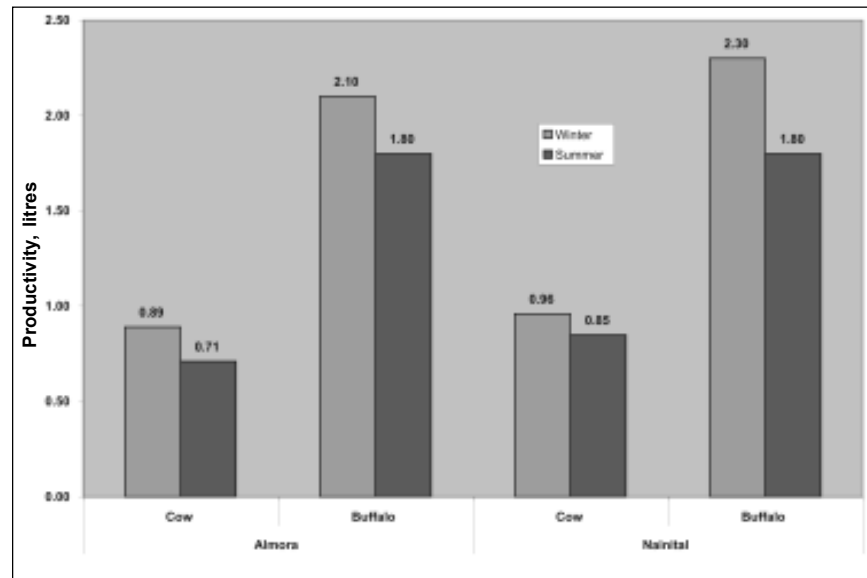
Figure 1. Average seasonal productivity of milch animals

milk from all the members of the society. They also check quality (Fat and SNF) of milk by lactometer and Garber's centrifuge. These instruments were provided free to the society at the time of its formation. The secretary disburses the payment to the members on the basis of milk collected from them, at the end of the month. In this way, the secretary was found as the link person between the members and *Anchal* dairy. His main duty was to deliver milk daily to the vehicle of *Anchal* dairy. For this work, he got 15 paisa per litre per km. In some places, the secretary himself/herself does the work of a head loader, while in some other places other persons were employed for it.

2. There were private milk collectors (middleman) who collect milk from 20-25 households in the village and supply it to the shops in the nearby market and in lieu they get a commission of Rs 2 to Rs 5 per litre.

3. Private milk collectors who supply milk from the village to private households in towns directly.

Figure 2 depicts milk supply of farmers to different players. It was found that some dairy farmers supply milk through more than one channel for deriving more benefits. Through local sale, they could realize higher price for their milk and were also deriving the benefits from different back-end services of *Anchal* by supplying milk to the *Anchal* network.
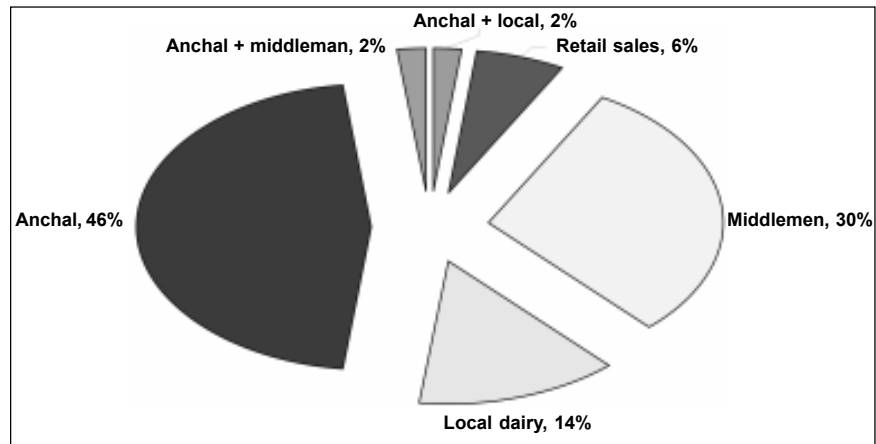
Figure 2. Milk supply by farmers to different players (percentage)

Some farmers (2.0%) preferred selling milk to both Anchal and middlemen. These middlemen gave advances to farmers for their household needs, which was a good trap to receive a regular supply of milk.

Cost Comparison in Procurement and Marketing

Different channels of milk procurement being followed in the study area can be depicted by flow diagrams and through these diagrams, the cost components can be evaluated. Figure 3 shows *Anchal*'s model for milk marketing in the Kumaun region. In this model, price realization at each level has also been shown. It will help in calculating the price spread in *Anchal* and comparing it with other competitors.
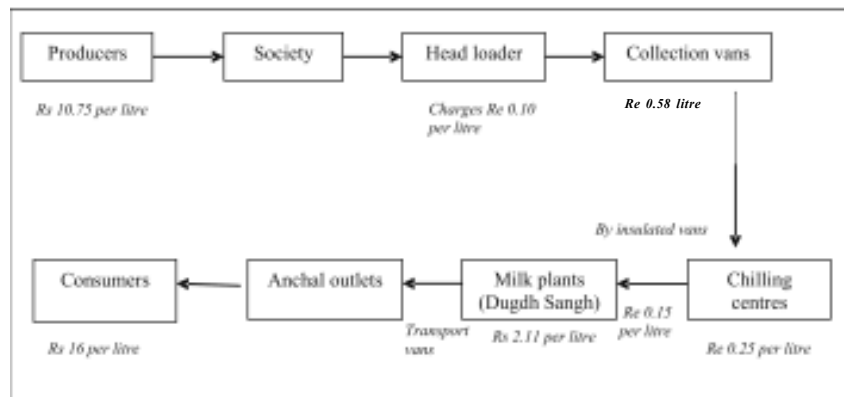

Figure 3. *Anchal*'s milk flow pattern from producer to consumer
Note: All calculations were carried out based on the price of standard milk of *Anchal* in the market

The cost incurred by *Anchal* while procuring milk through this channel was worked out by the following method:

Total Expense = Rs 10.75 + 3.86 = Rs14.61/litre

Commission to agent = 80 paisa/ litre

Price for consumer = Rs 16 (Std. Milk) Fat = 4.5%, SNF = 8.5%

Margin per litre = Rs 16.00 – 15.41 = 59 paisa

Average fat content of collected milk = 5.34%

Fat saved per litre (Std. milk) = 5.34 - 4.5 = 0.84%

Fat saved in DTM = 5.34 - 1.00 = 4.34%

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Total milk procurement (Society)	16213494 litres
Total milk handling	21742252 litres
Total city milk sale	16095409 litres
Total packed milk sale	2296786 litres
Total national milk grid (NMG) milk sale	1327414 litres
Anchal's share in total production	62%
Share of local sale/Middleman's channel	30%
Share of private dairies	8%

For liquid milk, *Anchal* had competitors mainly in the form of *dudhiyas*, followed by producer cum-sellers and some private dairies like Gopaljee, Uttarakhand, Karishma and Gagan. Their channels of milk procurement and marketing were as follows (prices have been shown on per litre basis):
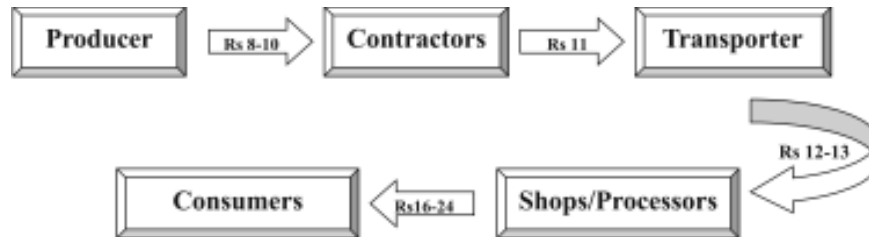
Channel I
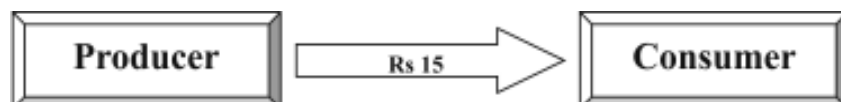
Margin of producer in this channel is nearly Rs 4 to Rs 5/litre. As the only cost involved is on transportation, the cost of production is Rs 10/litre on an average.
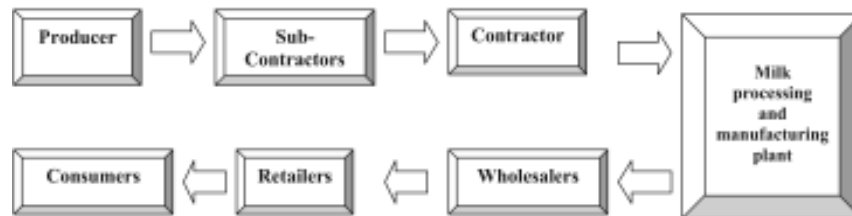
Channel II
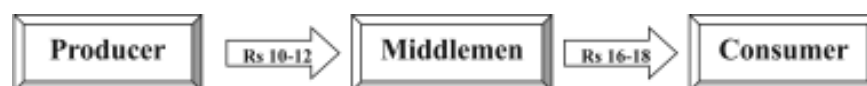
In this channel, the major chunk of profit (Rs 2 to Rs 4 per litre) goes to the middleman. It was being marketed in the name of quality and freshness of milk (e.g. Deewan's dairy in Almora).

Channel III

In this channel, the major chunk of profit goes to the processors. It was because they didn't have to follow strict standards like those of *Anchal*. Milk was not pasteurized and was sold only in the local market. The main motivation for farmers to supply through this channel was frequent cash realization and advances as and when required. Consumers perceived this supply to be fresh and pure (though the fact was not so). Also, most of the consumers purchasing milk and milk products through this channel were from the salaried class who paid to the shop at the end of the month, whereas in *Anchal* outlets they had to buy in cash only.

Channel IV

The fourth channel was of the private dairies. They did not procure milk from the local area but received supply through the market. '**Gopaljee Dairy',** a Bulandshaher-based company, was procuring milk from the whole UP through its insulated vans and was directly marketing it in the towns. Cost break-up of this channel could not be explored, as none of the private dairies was willing to reveal the data. However, their MRP was more than that of *Anchal*. This was a marketing gimmick followed by them so that customers could bargain on this price and felt that they were getting good quality milk at lower prices. Margins for the agents were also high in this channel than *Anchal* network.

This channel was being followed by the private dairies in the Kumaun region. In this channel, the activities up to 4th step were carried out in the adjacent states like Uttar Pradesh and Delhi, and marketing was done in this region. The price spread in different channels of liquid milk marketing has been provided in Table 2. A perusal of Table 2 revealed that except in

Table 2. Price spread in different milk marketing channels

Main channels	Producers price, Rs	Consumers price, Rs	Price spread %
Producers → consumers (Channel-I)	16	16	100
Producers → middlemen → consumers (Channel-II)	12	18	66.7
Anchal network	10.75	16	67.2
Producer → contractor/subcontractor → shops → consumer (Channel-III)	10	20	50.0
Private dairies (Channel-IV)	10	18	55.5

Chanel-I, *Anchal* had the best price spread for the producers. If the contribution of other facilities provided by *Anchal* were added to it, then it would surpass all the channels and was proved to be the channel from where farmers could derive maximum benefit, in addition to cash realization.

Marketing Strategies

It has been found that all the existing players employ different strategies to attract the target groups of customers. Table 4 enumerates the points for comparing the strategies of different players. The different points taken for comparison were both back-end and front-end related, where the *Anchal* was actually failing. The points were procurement, transportation, timings of procurement, middlemen involved, margin of agents, point of sale, target customers, mode of payment, etc.

Table 3. Marketing related problems

- Leakage loss was 1.0 to 1.5 per cent in the polythene packs.

- Crate leakage was 0.1 per cent.

- Vehicles going to Bageswar (80-km from Almora) depicted leaking problems higher than average due to friction in crates.

- There were two prominent seasons when demand supply fluctuations were very prominent. From Oct- Jan, production was more and henceforth supply was more but demand was less. Hence, excess milk was supplied to Mother Dairy via NMG agreements at lower prices. This led to a crash in procurement prices from farmers and paved the way for farmers demotivation.

- From April to June, milk procurement decreased due to decline in productivity. But demand increased and rates started skyrocketing. Again, this led to entrance of private players in the market for earning more profits through the channel.

- The margins provided to the agents were not sufficient.

Table 4. Marketing strategies of *Anchal* vis a vis other players

Points for comparison	Players			
	Anchal	*Dudhiyas*	Pvt. dairies	Local sale
1. Procurement	Penetration in villages through societies in the villages	Collection from households	Collection from other places where it is cheaper	Collection from own households
2. Transportation	Vans	Cycle or bikes	Middleman through vans	Cycle/walk
3. Timing of processing	Once/Twice	Twice	Twice	Twice
4. Selling through	Agents	Self	Dealers/C&F	Self
5. Margin of agents	Less	N.A.	More	N.A.
5. Point of sale	Outlets	Home delivery	Outlets	Home delivery
6. Customers	Salaried classes, tea stalls, restaurants, institutional sale	Salaried classes, tea stalls	Salaried classes, institutional sale	Wage earners, Restaurants, hotels
7. Mode of payment	Cash	Monthly system	Cash	Monthly system
8. Bargain on M.R.P.	No	Yes	Yes	Yes
9. Packaging	Not very attractive	N.A.	Very attractive	N.A.
10. Attributes (Positioning strategy)	Year round availability, Govt. certification	Convenience of procurement	Price, taste and keeping quality	Freshness and taste

Recommendations and Suggestions

Livestock Management

(a) Arrangements for animal feed should be made during lean months. There is a need to establish fodder banks at strategic locations for providing fodder during emergencies and periods of fodder scarcity. At

regular intervals, on a fixed day, veterinary doctors should make visits at the village level and check up all the animals. The expenses for this should be borne by the *Anchal* dairy, and the personnel of the rural and veterinary departments should be involved.

(b) Breed development of the hilly region has to be done through better natural breeding as well as A.I. facilities. Training should be provided to the secretaries of societies regarding A.I. procedures.

Milk Procurement

(a) The monthly payment should be changed to weekly mode. The payment of the head loader should be fixed keeping in mind the distance and the terrain. Payment system of the *Anchal* can be modified and should be based on quantity of milk supplied to the society.

(b) The available quantity of milk should be fixed season-wise, and it should be kept in mind as to why the quantity of milk decreased and who was actually responsible. Milk measuring cans should be calibrated as it creates losses for both farmers and the dairy.

(c) Milk quality testing should be improved to eliminate anomalies among society level and union level testings. Persons marketing cow milk should be encouraged and compensated for low percentage of fat and SNF in this milk. Incentives should be given to farmers for supplying more milk throughout the year.

(d) Milk should be sold at subsidized prices to the member-farmers when they would be requiring it on some occasions

Milk Marketing

• Local sale of milk at the society level should be encouraged to increase the popularity of *Anchal* brand. Focus should be on institutional sales. Active participation during farmers' fairs, festivals and exhibitions is required to increase the popularity. There should be monthly meetings at the village level where the people should be provided proper guidelines to increase milk production. *Anchal* can go for sponsorship of events related to animal husbandry and pet shows.

• Milk vending machines should be installed in the main district towns and tourist locations like Haldwani, Bhimtal, and Nainital, etc.

• Awareness programs were required in areas where *dudhiyas* were more in number. Customers should be given live demonstrations of the milk adulterations done by *dudhiyas*.

- Locations of *Anchal* bars have to be decided strategically.

- Business development services (BDS) were required in the whole region because there were very few service providers in this region.

- Focus has to be given on value-added products, region-wise, and had to follow consumer's taste and preferences. To popularize products like ice cream, butter, paneer, mattha, lassi in the rural areas, a regular supply of these products (after properly analyzing the demand) was required. These could be started by poviding subsidized sale of refrigerators to the societies for keeping these products.

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