



Performance of dairy co-operative societies and milk disposal pattern of member farmers in Jammu and Kashmir

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ABSTRACT

The study examined the performance of dairy cooperative societies under Jammu & Kashmir Milk Producers Cooperative Limited (JKMPCL) and disposal pattern of milk among the member farmers. The JKMPCL is one of the organized player to which the dairy farmers are attached and collecting the milk. The primary data were collected from 160 cooperative society members selected by stratified random sampling method. For measurement of performance, secondary data were collected from secretaries of selected cooperative societies. The findings showed that overall mean performance of societies was 51.83% in Jammu and 44.00% in Kashmir, indicating that societies in Jammu performed better than that in Kashmir. The reasons for the better performance of Dairy cooperative societies in Jammu were better milk price and high productivity of animals. The study further showed that average herd size of milch animals and average household milk production in Jammu was higher compared to Kashmir region. A considerable proportion of member farmers were disposing milk to other agencies besides dairy co-operatives in both regions of J&K. The price offered for milk by different stakeholders varied significantly and thus influenced the members to adopt other agencies for sale of their marketed surplus besides being co-operative society members.

Key words: Dairying, Dairy cooperatives, Disposal, Milk production, Performance

Dairy co-operatives are the key to transforming rural economy and its overall development. Though the performances of cooperative have been much effective in certain states, it is not uniform throughout the country (Singh and Pundir, 2000). They are highly developed in the four states namely Gujarat, Maharashtra, Karnataka and Tamil Nadu which accounts for two-thirds of milk procured by cooperatives. These four states contribute only 24% of milk to the total milk production of the country (Bardhan and Sharma 2011). In order to replicate similar model of dairy development, the state of Jammu & Kashmir had adopted the idea by establishing Jammu and Kashmir milk producers co-operative Ltd (JKMPCL) in the year 2004 with the twin objectives of (1) increasing the milk production besides providing producers with remunerative price for milk and (2) supplying the consumers with quality milk and milk products at reasonable prices. The National Agricultural Research Project (NARP) had classified the state of Jammu & Kashmir, into four agro-climatic zones namely: Low altitude Sub-Tropical Zone, Mid to high altitude Intermediate Zone, Mid to high altitude Temperate

Zone and Cold-Arid Zones having their own specific geo-climatic condition, which determines the cropping pattern and productivity. The state has a total of 1.37 million breedable cows and 0.59 million breedable buffalo population (Livestock census, 2007). The cattle population is predominated by crossbreds of Holstein Friesian and Jersey while Murrah and Nili Ravi form the major chunk of buffalo population (Information hand book 2013–14). The total milk production of state is 16.31 tonnes (NDDB, 2012–13) in which 37% is marketable surplus (Planning Commission, 2009). But still the sector is under developed as milk producers are poorly organized and suffer from severe handicaps in marketing of their milk profitably (Wani and Mathur, 1992). The milk produced is handled by both organized and unorganized players. The organized players handle only 1.70% of the total liquid milk production, which makes only 5% of the total marketed surplus of the milk (Wani and Wani 2010).

JKMPCL is facing various constraints starting from village level cooperative to federation level which are hampering growth of JKMPCL. The State's Milk Producers Cooperative Limited (JKMPCL) has its network limited only to the neighbourhood of Srinagar and Jammu cities. Lack of a regular outlet of milk has made the producers extremely dependent on the milk vendors/ shops, who exploit them by not paying remunerative prices, thereby leaving the producers with no incentive to increase their

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milk production. The present study was carried out with the objectives to investigate the performance of dairy cooperative societies running under JKMPCL and disposal pattern of milk among the member farmers of these co-operative societies, so that the performance of Dairy co-operative societies (DCSs) and disposal pattern of milk among the members may be understood to improve these societies in J&K and bring these members under more procurement process of organised sector and remunerative prices.

MATERIALS AND METHODS

The study was carried out in two purposively selected agro-climatic zones, Jammu and Kashmir zones, of the state of J&K. There were 8 and 9 milk collection routes in Jammu zone and Kashmir zone respectively. Four routes from each zone were selected by stratified random sampling technique. A total of 16 dairy cooperative societies were selected randomly, consisting of two societies from each selected route. The societies should have been registered for last 3 years was the minimum criteria for their selection. Ten primary milk producers or member farmers, who were supplying milk to cooperative society at least 180 days in one year, were selected randomly from each selected society. Thus a total of 160 respondents were selected from 16 societies as a sample. The primary data was collected by personal interview method using a pretested and structured interview schedule. The performance of cooperative societies was measured by using the index developed by Singh (1995) which was suitably modified to fit the present study. The secondary data required for measuring performance were collected from secretaries of the selected societies. The procedure used for calculating the performance by using above mentioned index is explained as under. The performance of societies was measured in two steps. In first step, score of each indicator was calculated and in the second step, the performance score of the each co-operative society was calculated. The indicator score was obtained by summation of key score got under each indicator multiplied by its weightage. Finally the performance scores were obtained by summation of

indicator scores of each co-operative society. Procedure for calculation of indicator score and performance score of DCSs is represented as under:

A) Calculation of indicator score

The score of individual indicator was calculated by the following formula:

$$IS = \sum KS \times W$$

where, IS represents the indicator score and KS represents the key score, and

$$\sum KS = \sum Ksi \text{ and } \sum Ksi = Ks1 + Ks2 + Ks3$$

where, Ks1, is the key score for the first year; Ks2, is the key score for the second year; Ks3, is the key score for the third year, and W, is the weightage assigned to the indicator.

B) Computing the performance score of DCSs

The performance score (PS) of each DCS was calculated by the following formula:

$$PS = \sum IS_i$$

where,

$$\sum IS_i = IS_1 + IS_2 + IS_3 + IS_4$$

where, IS_1 is the indicator score of first indicator of DCSs; IS_2 is the indicator score of second indicator of DCSs; IS_3 is the indicator score of third indicator of DCSs; IS_4 is the indicator score of fourth indicator of DCSs.

The performance percentage of DCSs was calculated by dividing the performance score of each society by the maximum possible performance which in our case was 123 and then multiplying by 100.

RESULTS AND DISCUSSION

Performance of dairy co-operative societies: The JKMPCL is having an organized network of milk collection centre as compared to other players in the state. The JKMPCL has 17 defined routes to collect the milk from 354 village level milk producer cooperative societies. JKMPCL was procuring 54.90 lakh litres, of milk annually from its more than five thousand members (JKMPCL Annual report, 2011). The performance of the dairy co-operative societies (DCSs) was estimated to ascertain their current level of functioning and to compare their status in

Table 1. Performance of DCSs of Jammu and Kashmir divisions

Milk Cooperatives Societies	Jammu Division		Kashmir Division	
	Performance score	Performance percentage PS / MPS × 100	Performance score	Performance percentage PS / MPS × 100
1	62	50.40	63	51.22
2	95	77.23	60	48.78
3	70	56.91	60	48.78
4	66	53.66	59	39.84
5	57	46.34	58	47.15
6	55	44.71	53	43.09
7	52	42.28	44	35.72
8	53	43.09	46	37.40
Mean	63.75	51.83	54.12	44.00

PS- Performance Score, MPS- Mean Performance Score.

two selected divisions. In the present study, the indicators used were annual change in (a) membership of societies, (b) percentage households covered in villages, (c) milk collected per member and (d) milk price per litre over the period of three years. These indicators were given weightage of 1, 2, 3 and 4 respectively.

The close perusal of data presented in Table 1 show the performance scores and performance percentage of DCSs in two zones of J&K. The performance percentage of cooperative societies in Jammu zone ranged from 42.28 to 77.23%, with the mean performance percentage of 51.83%. The performance of cooperatives in Kashmir zone ranged from 35.77 to 51.22%, with mean performance percentage of 44.00% only which was lower compared to that of Jammu zone. The reasons for better performance of DCSs in Jammu zone might be due to the cumulative effect of factors like socio-personal, economic and psychological characteristics of member farmers and management committee members.

The reasons cited by Singh and Tyagi (2001), for better performance of dairy co-operative societies of Gujarat was due to higher economic motivation, higher extension contact and higher milk sale. Baviskar (1998) cited reasons like guaranteed market for milk at fixed prices, cattle feed at reasonable cost, efficient and effective extension services at farmers door step to be responsible for highly successful dairy co-operatives working under Anand pattern. The co-operative societies in Jammu and Kashmir zones were found lacking in support service facilities provided by the JKMPCL, which was reported by Wani *et al.* (2013).

The mean performance gap which is 100 minus mean

performance percentage, calculated for cooperative societies of Jammu zone was 48.17% and in Kashmir zone was 56.00%. The high values for the performance gap indicate that there is a lot of scope in improving the performance of the cooperative societies. The performance of dairy co-operative societies was also assessed indicator wise, to highlight the relative importance of different indicators. The indicator wise performance percentage is presented in Table 2. It is clear that the co-operative societies in Jammu were performing better with respect to indicators; average milk collection per member and average milk price per litre paid to members, yearly over a period of 3 years.

The reason for this better performance of DCSs in Jammu was the more productivity of milch animals and more average price for their milk because their milk mainly came from buffalo. But the co-operative societies in Kashmir zone were performing better with respect to indicators, change in membership and percentage change in households covered in village yearly over a period of 3 years. The probable reasons for this might be less marketed surplus available with co-operative members and less involvement of other marketing channels in the study area.

Milk disposal pattern

Average herd size, milk production and consumption: The herd size and milk productivity are the two important parameters affecting the marketed surplus of the milk among the producers. The average herd size of milch animals per household in the study area was 3.31 with average herd size in Jammu and Kashmir zones being 3.46 and 3.16

Table 2. Indicator wise performance of cooperative societies

Indicators	Weightage	Performance in Jammu		Performance in Kashmir	
		score	%	score	%
Yearly increase or decrease in membership over a period of three years	1	61	50.83	80	66.67
Yearly average of milk price in rupees per liter paid to the members over a period of three years	4	128	33.33	96	25.00
Average quantity of milk collection in litres per member per year over a period of three years	3	243	84.37	159	52.21
Percentage of households covered by a VLMPCS in a year in the whole village over a period of three years	2	68	35.42	123	66.12

Table 3. Average herd size, milk production, marketed surplus and sale and per capita milk consumption in Jammu and Kashmir divisions of the state

										(Qty. in litres /day) n=160	
Division of state	Average herd size per household			Average milk production			Milk sold			Milk sold as percentage of total production	Per capita milk consumption (g /day)
	Cow	Buffalo	Pooled	Cow	Buffalo	Total	Cow	Buffalo	Total		
Jammu	1.20	1.99	3.46	6.60	8.90	15.50	5.54	7.36	12.90	83.22	462
Kashmir	3.16	–	3.16	10.55	–	10.55	7.92	–	7.92	75.07	490

respectively (Table 3). The most probable reason for smaller herd size in Kashmir division was attributed to non-remunerative price for milk, high cost of milk production and scarcity of green and dry fodders especially in winter months. Further it was found that animal herd in Jammu comprised mainly of buffaloes (1.99 / household) and also of cows (1.20 / household), while milch animals in Kashmir division consisted of only cows (3.16/ household). The proportion of buffaloes, CB cows and indigenous cows in the study area was found to be 29.72, 52.36 and 17.92% respectively.

The average daily milk production per household in the study area was found to be 15.50 litres in Jammu and 10.55 litres in Kashmir region of the state. In Jammu zone buffaloes and cows made respectively, contributions of 8.90 litres and 6.60 litres daily. The reason for more daily average milk production in Jammu was due to more average herd size and comparatively better feed and fodder availability in this zone compared to Kashmir zone.

The per capita availability of milk in the state is 352g/day. A close perusal of Table-3 reveals that the average daily per capita milk consumption in Jammu zone was found to be 462 g/day and in Kashmir zone was 490 g/day, which is higher than the ICMR recommendation of 300g/day and also more than national per capita milk availability which is 290g/day.

Marketed surplus and sale of milk: The marketed surplus of milk is determined by the amount of milk production and indicates the quantities of milk handled by different marketing agencies. The marketed surplus of milk in Jammu and Kashmir zones was 83.22 and 75.07% of the total average daily milk production respectively. From the data presented in the Table 3 it is clear that average daily milk sale per day in Jammu and Kashmir zones was found to be 12.90 litres and 7.92 litres respectively. The most probable reason found for the lower marketed surplus and higher per capita consumption in Kashmir were reported to be high production cost and non-remunerative price of milk which were most important factors discouraging farmers to increase their size of herd and sale of surplus milk available with them.

The disposal pattern of milk to different agencies was based on customer preference, existing marketing channels, price offered and quantity of milk produced in households. The results presented in the Table 4 revealed that although majority of the member farmers (63.13%) were disposing off their marketed surplus to co-operative societies only, but a considerable proportion of the members (36.87%) was disposing off their produce of milk to other agencies. The other marketing agencies which were preferred by the members to dispose their surplus of milk comprised of milk vendors (17.50%), private milk plants (11.87%) and direct consumers (7.50%). In Jammu zone, a good percentage (23.75%) of respondents was disposing marketed surplus of milk to private milk plants followed by 12.50% and 6.25% of the respondents, disposing their milk to vendors and directly to consumers respectively, besides providing

Table 4. Distribution of milk marketing agencies, quantities supplied and price offered by different agencies in Jammu and Kashmir Divisions of the state

Division of state	Agencies preferred by members			Price paid by different agencies (Rupees)			Quantity of milk supplied to different agencies (Qty. in litres /day)			
	Cooperatives + vendor + consumer + private milk plant			Cooperative	Milk society	Consumer vendor	Average milk plant	Cooperative Household consumption	Milk society	Private plant
	only	+ vendor	+ consumer	Total	Cooperative	Consumer vendor	Private	Household consumption	society	consumer vendor
Jammu	46 (57.50)	10 (12.50)	5 (6.25)	19 (23.75)	19.80*	24.50	25.00	6.32 (40.80)	2.72 (17.55)	1.13 (7.26)
Kashmir	55 (68.75)	18 (22.50)	7 (8.75)	0 (0.00)	17.50*	20.50	18.00	5.30 (50.24)	1.64 (15.54)	1.01 (9.57)
Average	63.13	17.50	7.50	11.87	—	—	—	45.52	16.55	8.42

(Figures in parenthesis indicate percentage). Disposal pattern of milk and price offered by different agencies.

milk to cooperative societies. In Kashmir zone, none of the members provided milk to private plants while 22.50% of the respondents were disposing milk to vendors and 8.75% to consumer directly besides the cooperative societies. The reason behind this preference pattern for different marketing agencies was found to be price motivation provided by these agencies besides cash or advance payments. The other probable reason being one time milk collection system adopted by JKMPCL, which forced members to sell their milk to other market players, since milk is a perishable item.

Quantities disposed to different marketing agencies: The percentage distribution of milk disposal pattern presented in Table 4 clearly shows that 20.32% (16.00% in Jammu and 24.64% in Kashmir) of the total liquid milk produced in the study area was used for household consumption. Out of total liquid milk production, 45.52% (40.80% in Jammu and 50.24% in Kashmir) was disposed to cooperatives, followed by 16.55% (17.55% in Jammu and 15.54% in Kashmir) to local vendors, 8.42% (7.26% in Jammu and 9.57% in Kashmir) directly to consumers and 9.19% (19.39% in Jammu and 0.00% in Kashmir) to private milk plants. The other reason of changing food habits due to increased per capita income was also found to be responsible for higher household consumption.

Price offered by different agencies: The average price of milk offered by different agencies indicated that the co-operative societies were procuring milk at price of ₹ 19.80/liter in Jammu and ₹ 17.50/litre in Kashmir, which was much lesser than the price offered by other agencies. The member farmers were getting maximum price by selling their milk directly to consumers who provided ₹ 29/liter in Jammu and ₹ 25/liter in Kashmir. Further milk vendors and private players were procuring milk at rate of ₹ 24.50 and ₹ 25.00 in Jammu, while the farmers in Kashmir region were getting ₹ 20.50 and ₹ 18.00 from milk vendor and private milk plant respectively. The price offered in the DCSs in the study area is based on fat and SNF content of the milk. The higher price offered for milk in Jammu compared to Kashmir is due to the fact that former has more fat content being buffalo milk or mixture of cow and buffalo milk. The other probable reasons for continuing to supply milk to co-operatives in spite of providing lowest prices were regular and guaranteed market provided by co-operatives besides motivation by the management committee members and hope that co-operatives will prosper one day.

The study concluded that the average herd size of milch animals, and average daily household milk production was small and a significant number of co-operative society members were disposing their marketed surplus to the other market players besides co-operatives. The average daily milk production per household was found to be 15.50 liter in Jammu and 10.55 liter in Kashmir region. The farmer used to supply 40.80 and 50.24% of their milk to cooperative societies while 43.20 and 25.11% was sold to other market players in Jammu and Kashmir zones respectively. The dairy

cooperative societies in the Jammu region were found performing better in comparison to Kashmir division with performance percentage of 77.23 and 51.22 respectively. The co-operative network was also found to be limited in its coverage. Thus the need of the hour is to make dairying remunerative by providing competitive prices. Besides this, the co-operative network needs to be enhanced to cover the hitherto uncovered villages and areas. Various input supply services like AI facilities, supply of concentrates and veterinary aid should be managed by JKMPCL to motivate dairy farmers to join co-operative movement in J&K. Trainings should be arranged by JKMPCL on methods of cultivation of area specific fodder varieties and their storage techniques to solve the problem of feed and fodder shortage by collaborating with sister departments to make the dairying a profitable venture.

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