

Marketing and Consumption of Dairy Products in Himachal Pradesh

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Dairy sector has been important in national economic and socio-economic development of India even though contribution of agriculture and allied activities to GDP has declined in last two decades. Dairy sector has become an important secondary source of income for 70 million rural households of which majority workforce is women mainly due to the sustained annual growth rate of 4.04 percent in milk production. This sector plays a significant role in supplementing family incomes and generating gainful employment in the rural sector, particularly, among the landless laborers, small and marginal farmers and women, besides providing cheap nutritional food to millions of people. Livestock are the best insurance against the vagaries of nature like drought, famine and other natural calamities. Indian agriculture is an economic symbiosis of crop production and cattle rearing. Around 80 percent of total land holdings are owned by small and medium farmers and about 64 percent of the population is engaged in agriculture either as farm labourers or as cultivators. In a normal year, crop production can generate 90 to 120 man days of employment per person. For the remaining period, they are virtually unemployed. Here dairy sets right the imbalance in employment. Keeping in view this importance of dairy sector, the present study attempts to analyze processing and marketing systems of milk and its products under different dairy production systems of the state. The study also evaluates the consumption pattern and consumer behavior in respect of milk products. The study revealed that though the per capita milk availability has significantly gone up, it still remains lower than the neighboring states. It was found that deficit between economic demand of milk and its supply will continuously increase over a period of next 15 years.

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INTRODUCTION-In the Western Himalayan region of India (Jammu-Kashmir, Himachal Pradesh and Uttrakhand), farm sector is the major employer and has prospective for commercialisation as industrial potential is limited. Livestock is the largest productive asset in rural areas as size of land holdings in the rural areas is reducing because of subdivision due to increasing population. Dairying has been treated as ancillary to crop farming and so little emphasis has been laid on developing it as commercial ventures. Major problems for this sector include lack of adequate feed and absence of marketing infrastructure. Therefore, this sector needs a development strategy which will cater to its grassroots requirements and also increase production base.

Objectives:

- i. To provide a better understanding of the prevailing dairy production, processing and marketing systems in mountain areas.
- ii. To analyse the consumption, consumer behaviour and preferences towards dairy products.

RESEARCH METHODOLOGY -The study has been conducted in milk shed areas of two districts, Shimla and Kangra which also represent low and mid hill areas. The further sampling was based on the consideration that different milk marketing systems get due representation. As such Tara Devi and Rampur areas of district Shimla were selected. On the similar considerations Palampur area of district Kangra was selected for the survey of dairy farmers. In order to study the consumer preference, 60 households from Shimla city and 30 from Palampur town were randomly selected and categorized in to three income groups of low middle and high income groups. The secondary data was collected from various sources including the private and public milk marketing agencies of Himachal Pradesh, Punjab and Haryana States. Reference period for the study is 2013-14.

CONSUMPTION OF DAIRY PRODUCTS

Projections of demand and supply of milk: The projections of demand and supply of milk have been based on the expected increase in population calculated on the basis of decennial growth rate in this respect and the growth rates of demand and supply calculated on the basis of last 9 years. The projections have been made year-wise from the year 2010-11 to 2029-30 on the basis of annual compound growth rate of demand for milk during the period of last 9 years. Human

population has been anticipated to increase from about 6.8 million during 2010-11 to about 100 million during 2029-2030 (Table-1). Milk production during this period will increase from 907 million litres to 1181 million litres per annum. This calculation is based on the annual compound growth rate (CGR) of 0.22 per cent. Thus, whereas the population is likely to increase by 31 per cent the milk production will be 23 per cent lesser during this period indicating lesser per capita availability of milk in future as compared to present.

On the demand side, two types of demands have been considered, the nutritional demand and economic demand. The nutritional demand has been calculated on the basis of minimum consumption of 250 grams of milk per day per capita based on the recommendations of Indian Council of Medical Research (ICMR). On this basis the demand for milk was 626.395 million litres during 2010-11 and hence a surplus of about 280 million litres was observed. The nutritional demand for milk is likely to increase to 912 million litres during 2029-30 indicating surplus milk to the tune of 269 million litres per year.

The economic demand based on the factors listed above was observed to be higher than the nutritional demand indicating higher per capita intake of milk as compared with ICMR recommendations. The future demand of milk has been based on the current increase in State Domestic Products (SDP) of 8.8 Percent per annum during 2004-05 to 2012-13 and income elasticity of demand for milk at 0.69 percent. The income elasticity has been worked out on the basis of quick survey based on 90 urban and rural households of the state. It was observed that on the basis of economic demand of 935 million litres during 2010-11, which is likely to increase to 2623 million litres during 2029-2030. This clearly indicates that the domestic supply will not be able to keep pace with requirements and the gap between demand and supply would continuously widen from 28 million litres to 1441 million litres during projection period. This deficit in supply of milk is likely to be met by importing milk from neighbouring states, imports in 2013-24 being 28.70 million litres per annum.

This scenario makes apparent that the state would remain a milk deficient state in near future. There is likelihood that import from other states would increase. The problem is likely to be further compounded by quality aspect of milk. The poor availability of fodder

in many areas, decreased milch animal population and predominance of local breeds, results in poor milk (in both quality and quantity) which is low in fat percentage (2-3%) and hence cannot be marketed as per provisions of PFAA which makes 4.5% fat and 8.5% SNF (Solid Not Fat) a minimum requirement. The commercialization of agriculture towards vegetable and fruit crops reduced the availability of crop by-products to animals. Moreover, average land holding in the state is decreasing due to increase in human population, resulting in decrease in livestock holding. The dairy development programmes in future should therefore, concentrate on improvement of milk quality as well as its quantity.

Table- 1: Projections of milk production, nutritional requirement and economic demand for milk in Himachal Pradesh.

Year	Projected population*	Milk production**	Nutritional requirement***	Economic demand****	Surplus/deficit	
					Nutritional	Economic
2010-11	6864602	907.00	626.395	935.7	280.605	-28.7
2011-12	7001894	1119.866	638.923	987.867	480.943	131.999
2012-13	7141931	1138.612	651.701	1042.94	486.911	95.672
2013-14	7284770	1141.117	664.735	1101.088	476.382	40.029
2014-15	7430465	1143.627	678.030	1162.478	465.597	-18.851
2015-16	7579074	1146.142	691.590	1227.287	454.552	-81.145
2016-17	7730655	1148.663	705.422	1295.710	443.241	-147.047
2017-18	7885268	1151.190	719.531	1367.949	431.659	-216.759
2018-19	8042973	1153.722	733.921	1444.215	419.801	-290.493
2019-20	8203832	1156.260	748.600	1524.733	407.66	-368.473
2020-21	8367909	1158.803	763.571	1609.740	395.232	-450.937
2021-22	8535267	1161.352	778.843	1699.486	382.509	-538.134
2022-23	8705972	1163.906	794.420	1794.236	369.486	-630.33
2023-24	8880091	1166.466	810.308	1894.268	356.158	-727.802
2024-25	9057693	1169.032	826.514	1999.877	342.518	-830.845
2025-26	9238847	1171.603	843.045	2111.375	328.558	-939.772
2026-27	9423624	1174.180	859.905	2229.088	314.275	-1054.91
2027-28	9612096	1176.763	877.104	2353.364	299.659	-1176.6
2028-29	9804338	1179.351	894.646	2484.568	284.705	-1305.22
2029-30	10000424	1181.945	912.539	2623.088	269.406	-1441.14

*On the basis of annual population growth 2%; **Based on ACGR 0.22 %; ***Based on per capita per day minimum requirement of 250 gms of milk as recommended by Nutritional Advisory Committee of ICMR, New Delhi

****Based on annual growth in State Domestic Product (SDP) 8.08% & Income elasticity of demand for milk 0.69

Milk Supply in the state through formal channels-There are two separate scenarios of formal milk marketing in the state. The milk

produced within the state is processed by both Milkfed and private dairies, which was about 57 percent of the formal demand during 2013-14. Milkfed procured 39 percent milk in the state, of which about 20 per cent (4958460 litres) was supplied to National Milk Grid (NMG). As such the H.P. Milkfed meets out about 19 percent of total demand being fulfilled through formal channels and private dairies meet out about 18.34 percent demand of the state. Rest of the milk (i.e. 43%) finds its way from Punjab and Haryana. The milk federation/Unions of Punjab accounts for about 13 per cent and Haryana about 6 per cent of total milk marketed. The rest of milk (about 24%) is being supplied through private dairies, milk brand 'Super' being most prominent among them. The milk supplied by outside agencies makes a difference of only 2.52 per cent in per capita milk availability. In absolute terms it increased from 455 ml per day to 466 ml per day.

MILK MARKETING SYSTEMS-Marketing channel is a sequence in which the product moves from producer to consumer through various intermediaries and functionaries in the market. Various middlemen and related agencies are involved in the purchase and sale of milk and its products as they move from producers to consumers. They buy and sell for their own gain.

Producer-Consumer Channel: This marketing channel is the most favourite with the dairy farmers whose villages are located near to towns. Since there is no middleman involved, farmers receive full price paid by consumer. Milk is distributed door to door in the morning to a set number of regular customer households and prices are collected once at the end of the month.

Producer-Other producer-Consumer Channel: This channel is almost similar to the one described above except that the milk vendor in addition to his own produced milk also buys milk from some other producers, who have very small quantity of marketable surplus and don't find it feasible to sell it themselves in city or who don't have enough manpower available with them to undertake the marketing activity themselves. The payments for such milk purchases are normally on monthly basis.

Producer-Trader-Consumer Channel: In those villages, which do not have easy access to towns, the role of milk traders has gained

importance. Farmers sell milk to trader who in turn sells it direct to consumer. This is the most prevalent milk marketing channel in Himachal Pradesh. Milk is sold door to door to the regular customer households and teashop owners in the city. This method is popular in those villages, which are away from urban consumption areas.

Producer-Milkfed (through VDCs)-Retailer-Consumer Channel: In order to provide an efficient marketing channel to small dairy farmers of such areas where there is no marketing outlet the Government of Himachal Pradesh has encouraged formation of Village Dairy Co-operative Societies (VDCs). The structure of the dairy co-operatives consists of Primary Milk Producers Societies at the village level and Milk Supply Union at the district level. In Himachal Pradesh dairy co-operatives are organised at village level and the milk is supplied to Himachal Pradesh State Co-operative Milk Producers' Federation (Milkfed). The VDCs are concerned with: i) helping the members to increase milk production; and ii) arranging for its profitable sale in the consumer markets through Milkfed.

Under this marketing channel members of VDCs bring milk to the collection centre at pre-fixed time in the morning where the vehicle of Milkfed comes for procurement. Milk is measured and checked for viscosity before it is accepted. The milk thus collected is first transported to chilling centre and then to dairy processing plant. After standardisation and pasteurisation milk is packed in 500 ml and 1000 ml polypacks. These polypacks are transported to retailers for sale to the consumers. The chilled loose milk is also sold to the consumers by the Milkfed through its mobile tankers at some specified places and time in some cities/towns. Some milk of dairy plants is further processed for ghee and pasteurised fluid milk.

Producer-Private dairies- Retailer-Consumer Channel: The private dairies assemble the milk from farmers through its milk assemble centre at village level. After processing the milk is sold through retailers to the consumer. The farmers bring milk to the milk collection centre in the morning, where the vehicle of dairy cows for procurement. The milk is measured and checked for viscosity before it is accepted. After pasteurisation, the milk packed in 500 ml polythene pouches and sold through retailers in the cities.

MILK PROCESSING-It has been observed that the commercial milk processing in the selected milk shed area is almost non-existent. The milk produced is either sold or is retained for the domestic consumption. Whatever processing is done is for the domestic consumption. For this purpose the milk is converted into ghee (clarified butter) by traditional methods. The milk processing for the commercial purpose is done only by Himachal Pradesh Milk Producers' Co-operative Federation (Milkfed). It has five milk processing plants of which three located at Chakkar in Mandi district, Dhagwar in Kangra district and Duttnagar in Shimla district, have a capacity of 20,000 litres per day each while the capacity of fourth dairy plant at Rohru in district Shimla has a capacity of 5000 litres per day during 2013-14. At Duttnagar powder milk plant is also in functioning with the capacity of 5000 litres per day.

All the milk, received at the processing plants, is standardised, pasteurised and packed in polythene pouches. These plants produce standardised milk (containing 4.6% Fat & 8.6% SNF), toned milk (containing 3.1% fat & 8.6% SNF), double toned milk (containing 1.6% fat & 9.1 % SNF) and skim milk (containing 0.1% Fat & 9.1 % SNF), depending upon the requirement and preference of milk consumers. Milk plant, Dhagwar has also facilities to produce sterilised flavoured milk and ice cream.

CONCLUSION:-Demand and supply projections suggest that excellent opportunities exist for significant growth in small holder dairying with a rise of possibly about 100 percent in milk demand over the next 15 years. Training of farmers in integrated dairy development for enhancing supply of milk on farms is very essential. To improve efficiency of milk marketing systems, there is need for training and advocacy of co-operative principles. Existence of a marketing channel is a pre-condition for augmenting surplus milk production. Supply (of a market structure) creates its own demand. The price of milk offered by the Milkfed is quite low and reported to be non-remunerative by the farmers. But Milkfed claims that the milk offered for sale is below the standard as prescribed by the PFAA. In remote areas of the state there is considerable quantity of milk available for sale but cannot be disposed off, as there are no marketing facilities. In some areas where traders operate the prices offered are low. The dairy farmers located in such areas do not have the knowledge of co-operative milk marketing.

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