

## Original Research Article

# Supply and Utilization Pattern of Milk in Bulandshahr District, India

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## ABSTRACT

The study was conducted in the Bulandshahr district of Uttar Pradesh state. Primary data were collected during 2014-15. Total milk supply in Bulandshahr was estimated to be 98,751 liters of milk per day. Out of this contribution of organized sector was 50,500 liters of milk per day whereas unorganized sector contributed 48,251 liters of milk per day. There are four organized agencies namely Parag Dugdh Utpadak Sahakari Sangh Bulandshahr, Kautiki Agro Products Pvt. Ltd Indara, Khurja, Sudha Co-operative Dairy Aara, Syana, Amul Gujrat Co-operative Milk marketing Federation Ltd. Anand Gujarat, which supplied 18,800, 10,700, 14,200 and 6,800 liters of milk per day, respectively. In unorganized sector 26,295 liters of milk was produced by small, medium and large sized milk dairies located in various zones of Bulandshahr. Small dairies produced 7,400 liters, medium dairies produced 8,780 liters and large dairies produced 10,115 liters of milk per day. There are terminal points or railway stations in the Bulandshahr where milk is brought by vendors or traders in country made canes of capacity 20 or 30 liters. Around 7,648 liters of milk was brought by these milk traders at various terminals every day. There are 11 roadways terminal in Bulandshahr where milk is brought by vendors or traders in the country made canes. Around 14,308 liters of milk was brought by vendors or traders per day at different roadways terminals.

### Keywords

Milk production,  
Organized sector  
and Fluid milk

## Introduction

Livestock sector in India has emerged as an important sector for employment generation as well as providing a stable source of income. With the launch of Operation Flood in 1970 and other dairy development programs, India has now emerged as the single largest milk producing country in the world where milk production grew by 4.22 per cent from 80.6 million tonnes in 2000-2001 to 121.8 million tonnes during 2010-11. Consequently, the per capita per day availability of milk in India has increased from just 120 grams (g) in 1960 to 281 g in 2010-11, thus meeting the minimum

nutritional requirement of 250 g as recommended by the Indian Council of Medical Research. Though dairy development programmes have been taking place throughout the country yet the situation in the North Eastern states is not that encouraging (1). A total of 45.7 million tonnes of milk was processed into milk products in the year 2000-01, out of which the share of the organized sector (including all cooperatives) was an abysmal 10%. On the other hand, 38.9 million tonnes of liquid milk was produced in India in 2000-01, out of which only 15.4% was processed, and the

rest was sold unprocessed (2). A study was conducted (3) related to estimated Indian milk demand for 2020 under various GDP growth rates. This study reported that if the current growth continues for the next twenty years (the nation has been growing at a rate between 5 and 7 percent over past five years), milk consumption is likely to more than double by 2020.

## Materials and Methods

Bulandshahr district was divided into five zones namely Central, Eastern, Western, Northern and Southern zone and a survey was conducted to study the sources of milk supply such as organized sector like Parag Dugdh utpadak sahakari sangh, Bulandshahr, Kautuki Agro Products Indara, Khurja, Sudha co-operative dairy Aara, Syana, Amul co-operative Anand, Gujarat and unorganized sector milk producer dairies of various sizes based on number of animal in respective dairies like small dairies (milch cows <5), medium dairies (5-10 milch cows) and large dairies (milch cows >10) and milk vendors. The sources through which milk was transported to Bulandshahr city from distant places were also categorized based on mode of transportation i.e. via railway and roadways. A survey was conducted zone wise under which each milk supplier was contacted for three consecutive days and information regarding the milk utilization pattern, quantities used in various product like raw milk, Dahi, Khoa, Ghee/butter, Paneer, Channa, Ice-cream, sweet milk and Kulfi were collected. From these three consecutive days information, average was calculated for each observation.

## Statistical formula

The average milk supply and its distribution will be estimated as.

$$\text{Mean} = \frac{\sum x_{ij}}{N}$$

Where  $\sum x_{ij}$  = Addition corresponding to rows and columns.

N = no. of observations.

The comparison will be made by normal deviate test as:

$$Z = \frac{\mu_1 - \mu_2}{N}$$

## Results and Discussion

In Bulandshahr milk is supplied by four agencies of organized sector; which are Parag Dugdh Utpadak Sahkari Sangh, Bulandshahr, Kautiki Agro Product Pvt.Ltd. Indara, Khurja, Sudha Co-operative Dairy Aara, Syana & Amul Gujrat Co-operative Milk Marketing Federation Ltd. Anand, Gujrat. Unorganised sector's contribution of milk supply is by small, medium and large sized dairies which are spread over the whole Bulandshahr. From distant remote places milk is brought by milk traders at various railway stations and via bus routes at various bus stations in Bulandshahr. Bulandshahr is surrounded by the various rural villages so some vendors of nearby villages also brought milk from near villages to markets. Mostly the urban people buy milk for their consumption from local area. In this way whole market supply has been categorized accordingly.

### 1. Organized sector

On an average 50.5 thousands liters of milk per day is handled by organized sector. Maximum (18,800 liters) milk is handled by Parag Dugdh Utpadak Sahkari Sangh, Bulandshahr with brand name "PARAG" whereas minimum (6,800 liters) by the Amul Co-operative milk marketing federation Anand, Gujrat with brand name "AMUL". Sudha Co-operative stand second in the city, by handling (14,200 liters) milk in the brand name of the "SUDHA" followed by the Kautiki Agro product with

brand name “QUALITY” which supply (10,700 liters) milk. (Table No. 1 and Fig 1). However, India is the world leader in milk production and Punjab is the 2<sup>nd</sup> largest producing state in India producing 10% of country’s milk (4).

Total milk supply in Bulandshahr through the micro agencies was recorded to be 98,751 liters of milk per day. Out of this 50,500 liters of milk was handled by organized sector while unorganized sector handled 48,251 liters of milk per day per day (Table No. 2 & Fig. 2).

### **3. Overall milk utilization pattern in Bulandshahr**

Milk utilization in Bulandshahr as whole was considered. It was observed that 98751 liters of milk was utilized in the city per day. Out of this 87345 liters of milk per day was used as raw milk which accounted 88.45 percent, while 11,406 liters of milk was utilized for the manufacturing of various milk products which accounted only 11.55 percent of total milk consumption. Considering various products of milk, it is recorded that;

**Table.1** Milk supply by organized sector in Bulandshahr (In Liters)

<b>Agencies</b>	<b>Brand</b>	<b>Fluid milk</b>	<b>Milk used for butter</b>	<b>Milk used for ghee</b>	<b>Flavour Milk</b>	<b>Milk cake</b>	<b>Total</b>
ParagDugdhUtpadakSahakariSangh Bulandshahr	Parag	10000	4000	2400	1500	900	18800
Kautiki Agro Product Pvt. Ltd. Indara, Khurja	Quality	5000	2400	1100	1000	1200	10700
Sudha Co-operative Dairy Aara, syana	Sudha	7500	3000	1400	1200	1100	14200
AmulGujrat Co-operative Milk Marketing Federation Anand Co-operative Ltd, Gujrat	Amul	2200	1400	1300	900	1000	6800
<b>Total</b>		<b>24700</b>	<b>10800</b>	<b>6200</b>	<b>4600</b>	<b>4200</b>	<b>50500</b>

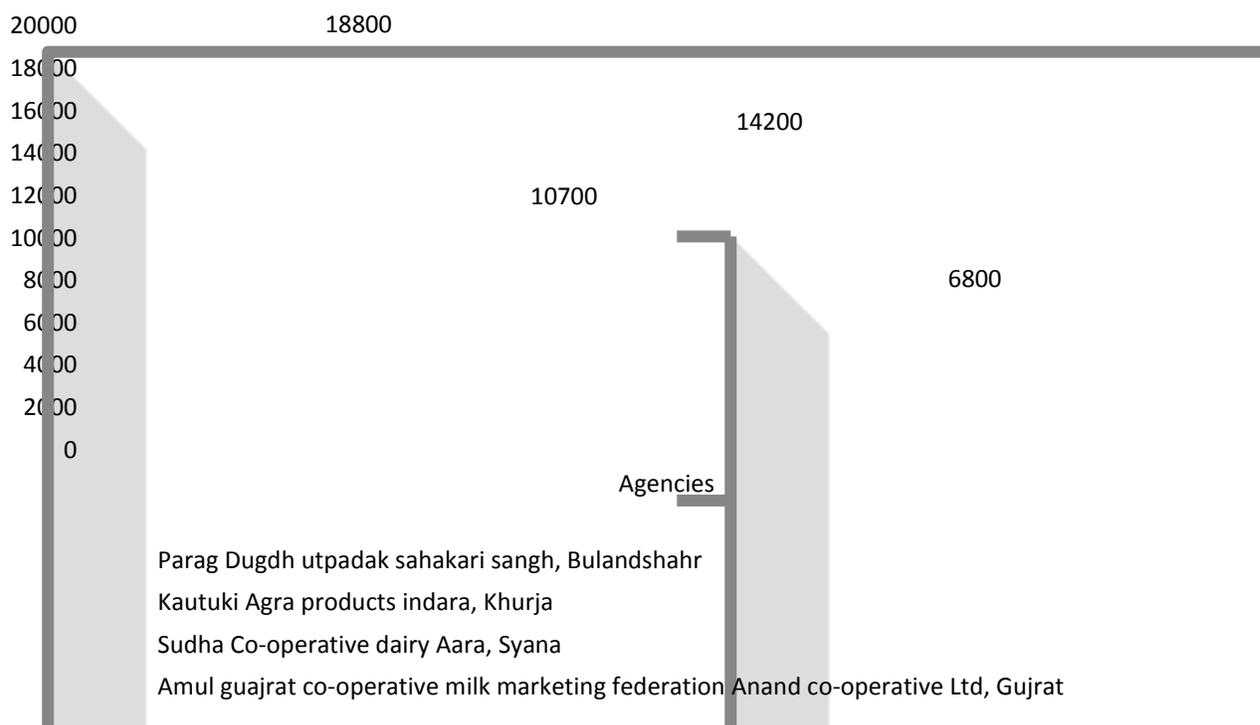
**Table.2** Total milk supply by organized and unorganized sector in Bulandshahr

<b>Agencies</b>	<b>Amount of milk(in liters)</b>	<b>Contribution in percent</b>
Organised sectors	50500	51.13
Unorganised sectors	48251	48.87
Milk producers(dairies)	26295	54.50
Railway milk supply	7648	15.85
Roadways milk supply	14308	29.65

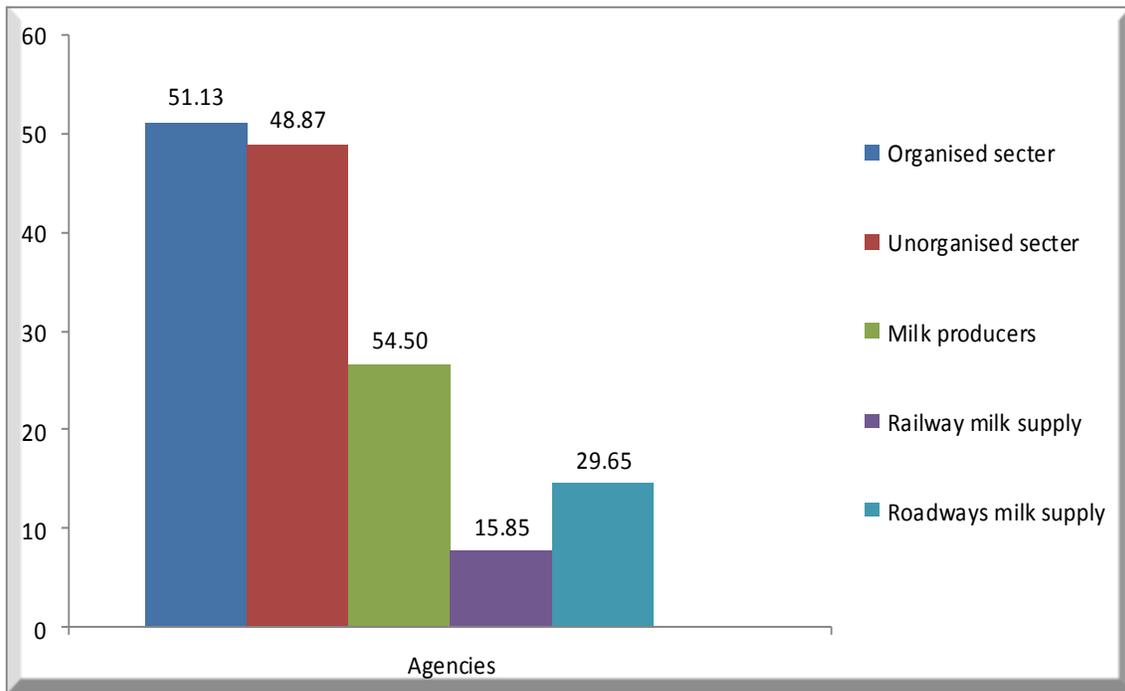
**Table.3** Utilization pattern of milk in overall of Bulandshahr

S.No	Products	Amount of milk in liters	Percent
1	Fluid milk	87345	88.45
2	Dahi	3051	3.09
3	Tea	583	0.59
4	Sweetend milk	306	0.31
5	Khoa	592	0.60
6	Paneer	1669	1.69
7	Ghee/Butter	1669	1.69
8	Chhana	938	0.95
9	Ice-cream	1690	1.71
10	Kulfi	908	0.92
<b>Total</b>		<b>98751</b>	<b>100.00</b>

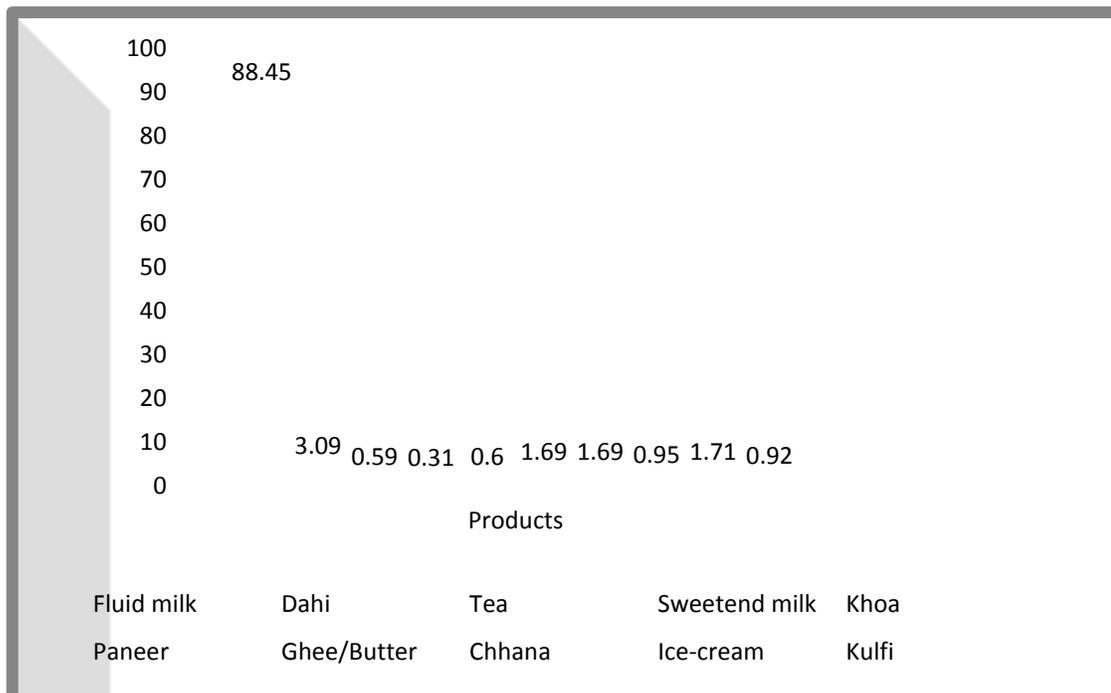
**Fig.1** Milk supply by organized sector in Bulandshahr (In liters)



**Fig.2** Total milk supply in Bulandshahr (In liters)



**Fig.3** Milk utilization pattern overall in Bulandshahr (in percentage)



3.09 percent of milk is utilized for Dahi preparation, 1.69 percent of milk is used as paneer making as well as Ghee/Butter preparation respectively. 1.71 percent of milk is utilized for Ice-cream, which was followed by Chhana( 0.95 percent), Kulfi( 0.92 percent), and Tea( 0.59 per cent). Khoa & sweetened milk preparation accounted 0.60 percent and 0.31 percent, respectively. When this data of consumption pattern is compared with national utilization pattern it was observed that comparatively low percentage of milk was utilized for Dahi, Khoa, and Ghee/Butter making respectively. Milk utilized by various ways (5) reported that from rural and urban areas of Northern Tripura district in 2008, it was found that 80 percent sample households consumed milk powder, 66 percent liquid milk, 64 percent sweets, 36 percent used ghee and 34 percent consumed curd. In urban areas, 90 percent household consumed milk powder, 80 percent sweets, 70 percent liquid milk, 42 percent used ghee and 40 percent consumed curd.

It is concluded that in the present investigation a survey was conducted to study the source of milk supply and its uses for different purposes in Bulandshahr district. It was observed that on an average 98,751 thousand liters of milk, per day was supplied by organized and unorganized sectors. Out of this 50,500 liters of milk was handled by organized sector channels such as Parag Dugdh Utpadak Sahakari SanghBulandshahr, Kautiki Agro Products Pvt. Ltd Indara, Khurja, Sudha Co-operative Dairy Aara, Syana, Amul Gujrat Co-operative Milk marketing Federation Ltd. Anand Gujarat. Unorganized sector handled 48,251 liters of milk per day which is the summation of milk production of different sizes of dairies (26295 liters), milk transported through Railway (7,648 liters) and Roadways (14,308 liters) per day to Bulandshahr district

from distant places. Overall 88.45% of milk is being utilized as fluid milk, 3.09% as Dahi, 1.71% as Ice-cream, 1.69% as paneer, 1.69% as Ghee/Butter, 0.95% Chhana, 0.92% kulfi, 0.59% Tea, 0.60%, 0.31% and rest for Khoa & sweetened milk etc.

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### **References**

- Basic Animal Husbandry Statistics (2010) Ministry of Agriculture, Dept. of Animal Husbandry Dairying & Fisheries, Govt. of India.
- Gulati, Ashok, Sharma Anil, Sharma Kailash , Das Shipra and Chhabra Vandana (1996) "Export Competitiveness of Selected Agricultural Commodities", NCAER, Global Business Press,
- Datta, T. N. and B. K. Ganguly (2002) "Analysis of Consumer Expenditure Pattern in States with Special Reference to Milk and Milk Products." National Information Network, NDDB (National Dairy Development Board) in press.
- Goyal, P., Banga, G. K. and Chahal, H. (2010) Preference for packaged and unpackaged milk-A study of consumers in Ludhiana. *International Journal of Commerce and Business Management*, 3(2): 195-198.
- Das, G., Verma, N. K. and Jain, D. K. (2011) Consumption pattern of milk product across different socio economic group of north Tripura district (Tripura). *Journal of Dairying Food & Home Sciences*, 30(4): 230-238.