Abstract:
Amongst the producers of milk and the consumer of milk, ‘Price of milk is the topic which is closer to their hearts. With the increasing affluent standard of living, demand for milk is also increasing. But the traders, co-operative unions in the milk production business could not bring moderate price for milk either from milk production unions or from the milk producers that would make customers happy. At the same time Government also failed to introduce the rates of milk that would please to customers the present paper discuss the same scenario in detail.

1. Introduction:
Since thousands of years milk is being used for infants, young ones and for adult also. Milk has become an integral part of food for both vegetarians and non-vegetarians. Therefore, prices paid by customers must be affordable to him. The government has also considered fixation of prices of milk, as an important duty. In this research essay an attempt has made to evaluate the procedure of pricing of milk fixed by state government.

Pricing of milk is always based on its cost incurred by the farmers and price paid by the customers. Actually cost of milk is a complex phenomena, as prices of various feed material related to cost differs from region to region, period to period and market to market.

Factors Deciding the Prices of Milk
Pricing structure should be based on the following principles.

i) Prices should be remunerative to producers, so as to cover the cost of milk production.

ii) Prices should be competitive to local market prices

iii) Prices should discourage the adulteration by producers and promote quality consequences.

iv) Prices should be based on milk constituents i.e. FAT and SNF.

In Mumbai (Maharashtra), the Government milk scheme took place in 1947. The buffaloes in Mumbai city were moved in Arey in 1951. Since then, Arey milk colony is well known for milk producers and by the government. In the beginning, it was a binding on milk producer to give all the milk to Arey milk colony, even though milk was not sufficient to complete the demand of Mumbai city. So the milk was supplied to Mumbai from Gujarat, mainly from Anand area. Therefore, the Government of Maharashtra started in 1958 Department of Dairy Development. The department also established the market of processed milk in rural areas, which provided a supplementary business for rural population. Government milk schemes were started in various districts for enhancing milk production in rural areas. The objective behind this activity was to provide market for milk in all the seasons of the year and to provide the cost based milk price to milk producer.

2. Government's Efforts in Respect of Pricing of Milk
Due to the population growth and increasing demand for milk the prices of milk were high in the market, hence the government adopted a policy to fix the milk prices. Accordingly in rural area primary co-operative milk societies were established. However the prices of milk were unstable. Therefore different committees were appointed by Government.

On 7th March, 1983, the report of milk pricing committee i.e. Dravid Committee was accepted by Government of Maharashtra.
On 31.12.1985 the report of the Basak Committee appointed by the Government of Maharashtra was accepted. This committee evaluated the Operation Flood Programme in Maharashtra. The Basak Committee found that, the district level co-operative milk unions use to make unauthorized deductions from the price of milk paid to the producer and that should be curtailed.

In December 1986 the Tata Consultancy Services report was published. It reported that, “all income groups in Bombay find the current price of milk very high and it must priced economically.

On August 31, 1987 again the Dravid Committee was submitted its report the committee which was appointed by the Government of Maharashtra with regard to revision of price of milk. This committee suggested the concentration of milk by adopting reverse osmosis process to remove a part of water from it. As a result of this transport cost would be lowered and consumer preference for high fat milk would possibly be favoured its marketing.

The recommendations made by the above different committees, even though appointed by government were neglected by the different Government, who were in the power from time to time, and no firm decision was taken.

3. Present Methods of Milk Pricing

Milk has two major constituents (FAT and SNF) and the pricing can be based either on FAT alone or both FAT and SNF. The milk pricing structure in the country is based on FAT contents of milk, while this method has provided justified price for buffalo milk. The cow milk has always been paid low price as the SNF contents of cow milk has never been given into consideration. Therefore, various methods were based on FAT and SNF. These contents have been assumed to provide justified and remunerative price to cow milk. Accordingly, three different models of milk pricing are discussed below.

3.1. Pricing on Pro-rata Fat Basis:
The price of milk is fixed proportional to the fat variation in milk or the price is paid according to the fat percentage present in milk. Guided by the prevailing market forces, the cost of one Kg. of Fat is fixed by the Management and this rate differs from season to season. The formula can be shown as below;

Formula: \( (\text{Kg.Fat Rate}) \times (\% \text{ of Fat Content}) \) .... (i)

3.2. Pricing on Two-axis Basis:
Pricing on pro-rata Basis, no consideration is given to SNF content of milk. Therefore, Two-Axis Formula was used in which both FAT and SNF contents were taken into account. Considering FAT and SNF as two main milk constituents, the milk price was decided by certain market price of Ghee and SMP as if they are purchased separately. This method of fixing of price on both FAT and SNF basis is called the two-axis pricing.

Formula:

\[
\text{Price of 100 Kg. Milk) = (Kg.Fat Rate x Fat\%)} + \text{ (Kg.SNF Rate x SNF \%)} \]

3.3. Pricing on Equivalent - Fat - Unit (E.F.U.) - Basis:

This concept is again a part of two-axis-formula with little change. In this case, the SNF Units were converted into Equivalent Fat Units in proportion to the relative market prices of the two constituents. However to work out the cost of Equivalent-Fat-Unit, the average Fat
% and SNF % in milk received by the plant in previous year was taken as a base. Thus, the SNF valued at 2/3rd price of Fat on Unit Basis.

**Formula** : Price of 100 Kg. of Milk = (Equivalent-Fat-Units) x (Rate per E.F.U.). (III)

In above three methods, the cost of processing, distribution, procurement was not considered. If those factors were taken into consideration, the producer gets less price for his produce. Also these methods decided the price for milk on the basis of the price of Fat in the market, means the price for Fat was decided in the market by demand and supply equilibrium. Therefore, we can say that above three methods only consider the demand and supply factors in the market and not the cost of milk production, such as cost of animal feed, fodder, medicines, wages, etc.

4. **Defects in Pricing of Milk in Maharashtra:**

There were many shortcomings in the Pricing Models fixed by Government and the N.D.D.B. The costs of milk procurement, processing and distribution of milk were not considered. The change in the milk price needs be done as per formulas I, II, III. The expenses of the producers were not taken into consideration.

The prices given in the model takes into consideration only the price of Ghee. This price did not take into account, the cost of procurement, processing and distribution cost.

Therefore, many problems were raised in the development of the dairy business. Since long back, Deotale Committee of 1973 had recommended that the rate should be based on the cost of production. In 1982 another committee i.e. Nilangekar Committee accepted the formula of milk pricing given by Deotale Committee. But Nilangekar Committee made some new amendments about the rate of milk. The Committee stated that, the rate should be separate in Flush - Season (September to February) and in Lean Season (March to August). Also, there should be separate rates for buffalo milk and cow milk.

The details which were taken for consideration in Deotale Formula were as follows:

5. **Items of Deotale Committee in Fixing Milk Pricing**

5.1. **Items of Cost of Milk For Producers**

A. **Total Expenditure For Milk**:

1. **Feeds** :
   a) Cost of Green and Dry Fodder and feed :
      i) 400 days for cow. (Calving Period)
      ii) 450 days for buffalo(Calving Period)
   b) Concentrate :
      i) 400 days for cow.
      ii) 450 days for buffalo

   Feed Cost ex-farmer’s door step = a + b

2. **Labour Charges** :
   Per day wage of labour x 400 days(Calving Period) in the case of cows (10 cattles) OR 450 days(Calving Period) in the case of buffalo

3) Light, water, medicine etc.  4) Replacement cost 20% per lactation intercalving period. 5) Interest on Capital per annum 12%. 6) Miscellaneous Expenses (Insurance, Veterinary Aid etc.) 7) Animal Shed Depreciation 6% per annum.

Total Expenditure - Item 1 to 7
B. **Less Receipts:**
   i) Sale of Manure  ii) Sale of Gunny Bags  iii) Sale of Calf  
   \[ \text{Total Receipts } B = I + II + III \]  
   \[ \text{Total of A = Total of B} \]  
   \[ \text{Items of Cost of Production of Milk for Producer} = \frac{\text{Total Milk in Litres}}{\text{Total Milk in Litres}} \]  

6. **Items to be considered fixing Price of Milk For Consumer:**

6.1. **Price of Milk Paid by Milk Union to Producer**

6.2. **Cost of Procurement:**
   i) Commission For Dairy Co-operatives ii) Cost of Instruments  
   OR Depreciation of Instruments, which provided to Primary Co-op Societies,  
   iii) Transportation Charges for Procurement iv) Risks, Insurance.

6.3. **Cost of Processing:**
   The following items of cost in processing were considered.  
   i) Cost of Chilling and Pasteurization, Refrigeration Facilities, ii) Cost of Standardization  
   iii) Cost of Packaging iv) Handling Loss v) Cost of Cleaning (C.L.P.) vi) Quality Control and Lab  
   vii) Loss in by-products viii) Fuel, Electricity, Water

6.4. **Cost of Distribution:**
   i) Commission For Seller ii) Transportation upto Seller iii) Advertising iv) Leaksage

6.5. **Essential Input Cost and Development Activities Cost:**
   i) Veterinary Service Expenses ii) Training and Development Programmes  
   iii) Official, Clerical Work Expenses (Managerial Costs,Stationery, Communications)

6.6. **Cost of Infrastructure:**
   i) Interest on Capital ii) Depreciation of Machinery and Plant iii) Maintenance and Repair

6.7 **Wage Burden.**

6.8 **Insurance and Taxes, etc.**

7. **Milk Prices Scenario : High Margin to Middlemen –**

   The below table shows that always the producers and consumers are at loss. On the one side the milk producers complain that the cost of the milk is not recovered from the milk price and on the other hand the consumers are unable to pay high price to milk. The question stands before the thinkers; then Why this situation since long? The answer is that middlemen and even the co-operative milk unions are taking high margin for per liter of milk sold in the market. The table shows that Rs. 11.50 and Rs.13.75 margin is taken by the middle agency for per little of milk sold in Mumbai market and as well as in Kolhapur market. A milk collected in Kolhapur District, if it is sold in Kolhapur city after processing then margin of Rs. 10.50 is taken by the co-operative milk union. Is the per liter cost of collection, processing, marketing etc. is of Rs.10.50? No. This is not true. The co-operative unions can take fair margin so as to cover their cost of production and some amount of profit for future investment and risk. Therefore, one has to re-think about pricing of milk. If the co-operatives ‘no-profit no loss’ institutions then high margin is nothing but cheating to the illiterate and innocent farmers.
Table No. 1.1
Milk Prices Scenario in June 2012
Producers to Consumers price distribution (Amount in Rs.)

<table>
<thead>
<tr>
<th>Location</th>
<th>Quality of Milk</th>
<th>Price paid to Producer (Rs.)</th>
<th>Price paid by Consumer (Rs.)</th>
<th>Difference (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FAT SNF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.Mumbai</td>
<td>Cow</td>
<td>8.5</td>
<td>18.50</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Buff.</td>
<td>9.2</td>
<td>27.25</td>
<td>41</td>
</tr>
<tr>
<td>2.Kolhapur</td>
<td>Buff.</td>
<td>7.9</td>
<td>26.50</td>
<td>37</td>
</tr>
</tbody>
</table>

Source: Market Survey and milk union information.

**Conclusion:-**

As there is inflationary situation in economy each month or quarter the prices of inputs are increased and hence, there is need to increase the milk prices. But this is rarely accepted by milk unions and the milk traders. As a result of this situation either the producer not the consumer is satisfied. This again results into the adulteration in milk at large-scale, which hampers the health of public, especially the poor consumer.

**References :**

**Websites:**
2. India Dairy.com/Facts and Figures
3. www.jstor.com

**Others :**
   Documents from office of the Dairy Development Officers in Kolhapur District.