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CHAPTER - IIIMETHODOLOGY

The explanation regarding the method of analysis and concepts used in investigation carrying a special meaning is necessary for the proper understanding of the reader. Thus, the methodology adopted for the present study is described in this chapter.

3.1 SELECTION OF AREA : As stated earlier in chapter-I, the milk schemes are started by Government of Maharashtra to provide subsidiary occupation to the farmers. The study is confined to the villages in Hatkanangale tahsil of Kolhapur district. The selection of the area was purposive as the area is actively associated with the Agricultural development programmes and many of the farmers and agricultural labours in this area are having milch animals which are distributed by the Warana Co-operative Dairy Society, Taluka Panhala, District Kolhapur, especially the cross breed cows. The milk chilling centre is also established at Warananagar, in Panhala taluka, District Kolhapur. The Warananagar Milk Scheme covers almost all villages in Hatkanangale taluka.

3.2 SELECTION OF CO-OPERATIVE DAIRY SOCIETIES AND MILK PRODUCERS.

In this study 10 Co-operative Dairy Societies were selected at random from the total number of 66 Co-operative

Societies, in Warana Co-operative Dairy Society, Warananagar Kolhapur District. Name of Co-operative societies, Talsande, Kini, Top, Nagaon, Herle, Shirol, Rukadi, Alte, Hatkanangale Khumboj. From these ten co-operative dairy societies, total sample of 70 dairy farmers were drawn at random selecting 7 from each society. A list of milk suppliers of each society obtained from the record of the milk producers' societies, further verification of the milk producers was done by contacting the individuals from each of the villages, personally. It was also confirmed that the milk producer is the owner of the Cow.

### 3.3 GENERAL INFORMATION OF MILK PRODUCERS:

The various aspects such as the name of the milk producer, native place, taluka, district, age, education, occupation, land holding him etc, were studied.

While interviewing the individuals, prime importance was given to the information pertaining to number of milch animals, daily feeding, daily labour, requirement, expenditure capital investment etc.

### 3.4 CONSTRUCTION OF SCHEDULE FOR COLLECTING DATA:

A comprehensive questionnaire was prepared for interviewing the milk producers (Appendix-I). This questionnaire was divided into two parts. The first part consists of questionnaire of getting the information regarding the milk

producers' age, occupation, education and land holding. The second part consisted of questionnaire on the following points:-

- i) Feeds and fodder with current market rates and the manner of feeding,
- ii) Other items of expenditure, such as animal sheds, veterinary services, medicines, utensils etc.,
- iii) Labour required,
- iv) Milk of production and its disposal,
- v) Item of income from all sources.

Before finalising the schedule of items in the questionnaire, it was pretested by interviewing few milk producers at Hatkanangal tahsil. Pretesting was considered necessary in order to know whether;

- i) the questions formulated were properly understood by the dairy farmers or otherwise,
- ii) the sequence of the questions in the questionnaire needed any alterations,
- iii) the language used was simple and easy to follow,
- iv) there were some practical difficulties in filling up the questionnaire.
- v) any additional questions were required to be inserted as a result of some additional information obtained from the dairy farmers while pretesting.

Keeping the above points in mind necessary corrections were made and the questionnaire was finalised.

### 3.5 COLLECTION OF DATA :

In order to develop the report with the milk producers the author visited each of the selected villages 2 - 3 times. In the earlier visits, sufficient time was spent for establishing firendly relations and for winning their confidence so that they should not have any doubt regarding the use of information. They were generally contacted during the time of "Community milking" in the evening. This facilitated free and frank discussion and natural response from them to various questions in the schedule. Beginning with a firendly talk on various agricultural problems, the specific questions were asked informally during the course of discussion. This helped that author in getting a good response and required information from the Milk Producers.

### 3.6 PERIOD OF INVESTIGATION :

The investigation work was started in the month of November, 1981 and the same was completed by November, 1982. The pretesting of the questionnaire was also done during the same period.

### 3.7 TEACHNIQUE OF COSTING FOLLOWED :

While calculating cost of production of milk, important factors such as cost of feed, cost of labour,

housing cost, miscellaneous charges etc., have been taken into consideration. All the costs also can be classified into two main groups viz.,

- a) WORKING COSTS or FELT COSTS,
- b) FIXED COSTS or INPUTED COSTS.

WORKING COSTS OR FELT COSTS : This type of cost includes the costs which are paid directly and also the costs of feeds and fodders, labour and management, veterinary medicines and miscellaneous items.

FIXED COSTS OR INPUTED COSTS : This type of cost includes the costs which are not paid directly but they are to be considered while calculating the cost of milk production, while inputed costs include depreciation and interest on value of byre depreciation on animal, interest on animal investment, depreciation and interest on value of utensils<sup>a</sup> and other materials required in milk production.

3.7.1 FEED COST : The feed of dairy animals is generally divided into three categories viz., green fodders, dry fodders, and concentrates. Those are further grouped into home produced feeds and purchased feeds. Purchased feeds were valued at the purchase price plus marketing charges, if any, and home produced feeds were valued at the price charged at average market rates prevailing at the time. Almost, all the concentrates were purchased from the market. Those were, therefore,

valued at the actual market price plus marketing or transport charges and other charges, if any. Thus total feed cost for three groups was calculated separately.

3.7.2 LABOUR COST : In case of paid labour, the actual amounts paid were considered, while in case of the family labour the amount was calculated on the basis of prevailing wage rates. Total labour required, both family hired was estimated on the basis of actual time spent daily for different activities connected with the dairy enterprises such as milking, feeding, and management of animals, cleaning the cattle byres, sale of milk and milk containers etc.

3.7.3 COST OF VETERINARY MEDICINES AND CHEMICALS :

The total quantity of veterinary medicines and chemicals issued by the stores officer and used for dairy animals was considered for finding out the cost of these items. The medicines and chemicals were charged at the actual purchase price.

3.7.4 A  
APPRECIATION, DEPRECIATION OF ANIMALS  
UTENSILS AND DAIRY ASSETS.

The appreciation, depreciation on animals was calculated on the basis of age of animals i.e. 1 to 3 years, appreciation 10 % per annum, 3 to 5 years age neither appreciation nor appreciation, and above 5 years age depreciation @ 12-5 %

per annum was calculated. The equipments, utensils<sup>a</sup> and cattle byre were depreciated by adopting a straight line method of depreciation.

3.7.5 INTEREST : For lactating cows no interest on working capital was charged as the producers desired income on milk soon after they invested the money. Interest on fixed capital was charged at the rate of 10 % per annum for the period of lactation length on capital investment on animals, cattle shed and dairy equipments. But, if the milk producer had borrowed loan from any financing agency then actual interest was charged while calculating interest on capital investment on animals.

3.7.6. RETURNS : Returns from the milch animals were divided into two categories viz., returns from milk and returns from dung. While, calculating the returns, the prevailing rates in the locality (paid by the milk collection centres in case of milk) were taken into consideration.

3.8.7 ANALYSIS OF DATA : The method of analysis used is a tabular method of analysis. The meaning of the terms and concepts used in the analysis of data is given below.

(a) Total Cost: The costs means the costs which included all items of cost such as cost of feeds fodders, cost of labour, cost of veterinary - medicines. Interest of fixed capital, appreciation/

depreciation on the value of animals, byres, dairy utensils and other assets. Hence, it is the dairy sum of working and fixed costs.

- (b) Gross income : Gross income under this study is the income from all sources of animals such as income from milk and dung.
- (c) Net cost : Net cost = total cost - value of dung.
- (d) Net profit: (i) Profit at total cost = total income - total cost.  
 (ii) profit on net cost = total income - net cost.
- (e) Per unit, net cost and net income of milk production :

Net costs of milk production is worked out by subtracting income of bye-products from the total cost of milk production. Per unit net cost of milk production is worked out by dividing net cost of milk production by the total quantity of milk produced during the year.

Net income per unit ( One litre ) of milk production is worked out by subtracting the net cost incurred for production of a unit of milk from the selling price per unit.

(f) Average net income per animal : The average net income of a cow per year and per day was worked out seperately by subtracting average total cost incurred from the average gross income per animal.

(g) Output - Input ratio : Output - input ratio is worked out by dividing the total output in terms of rupees by the total cost.

(h) Break even point : The break even level of milk production was calculated on the basis of net cost of milk production.