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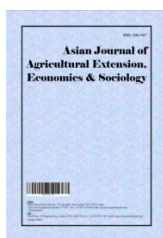
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Challenges to Overcome by the Members of the NARMUL Dairy Cooperative

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Dairy cooperatives have played an important role in improving the economy of small milk producers' households in different regions of India. Telangana is one amongst them, which is predominantly an agricultural state with an excellent potential for milk production. The study was conducted to analyze the constraints faced by dairy farmers of Yadadri- Bhongir district of Telangana. The study data was collected during March-April 2021 from 90 milk producers of NARMUL co-operative in Yadadri-Bhuvangiri district of the state. Low procurement price of milk, Lack of disease control programs, No Bonus, Lack of milk testing & animal screening facilities, Irregular visits of Veterinary staff were considered as the most serious constraints where as, Unavailability of first aid services and lack of sufficient supply of vaccines to the animals, Non availability of loan facilities, Lack of artificial insemination (A.I.) facilities in/around the village, Inadequate supply of feed and mineral mixture were considered as the least serious constraints.

Keywords: NARMUL; dairy cooperative; constraints; bhongir; members.

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1. INTRODUCTION

Livestock is a vital component of Agricultural sector in particular and Indian economy in general. It grew at Compound Annual Growth Rate (CAGR) of 8.24 percent during 2014-15 to 2018-19. Livestock's share of overall agriculture and allied sector 'Gross value added GVA' (at current prices) has risen from 24.32 percent in 2014-15 to 28.63 percent in 2018-19. In 2018-19, the livestock sector contributed 5.1% of total GVA (Economic Survey, 2021).

In livestock farming, dairy farming is a class of agricultural, or more properly, an animal husbandry enterprise, raising female cattle, goats, or certain other lactating livestock for long term production of Milk, which may be either processed on site or transported to a dairy for processing and eventual retail sale [1].

The Indian dairy industry has been witnessing rapid growth and its progress is mainly brought by the advent of dairy co-operatives. Co-operatives were envisioned as the primary vehicle for implementing dairy development programmes in India, and the cooperative framework of dairy development techniques is credited with much of the country's success during the "White Revolution" [2]. The organised system of milk production and procurement provided by the three-tier dairy cooperative system plays an important role in connecting milk producers to cities by creating a market for milk gathered at the village level, processed and packed in factories, and supplied to the final consumers [3].

In India, dairy cooperatives have played a major role in the procurement, processing, and marketing of milk and dairy products, as well as in representing farmers at the state and national levels. Dairy farming is a major source of income for many people, and dairy co-operatives are said to be the most effective way to assist dairy farmers in getting the most out of their business [4].

NARMUL (Nalgonda-Ranga Reddy Milk Producers Mutually Aided Co-operative Union Limited) is one of Telangana's leading dairy cooperatives. NARMUL was established in the year 1986, initially, procured milk mainly from two districts i.e., Nalgonda and Ranga Reddy. At that time Nalgonda district had 10 milk chilling centers and Ranga Reddy district had 2 milk chilling centers. At present, NARMUL is

operational in 5 districts viz., Nalgonda, Ranga Reddy, Yadadri-Bhongir, Suryapet, Vikarabad and it has 5 Milk Chilling Centers (MCC) and 19 Bulk Cooling Units (BCU).

The major supply of NARMUL goes to the Hyderabad city which is the largest metropolitan city of Telangana. The livestock farming provides self-employment, beneficiary income and a nutritious health to the society in rural as well as urban areas. In the present study, an effort was made to analyze the constraints of the dairy farmers of the NARMUL dairy co-operative.

2. MATERIALS AND METHODS

Multistage sampling procedure was adopted for selection of district, block and villages. From the 5 districts covered by NARMUL, Yadadri-Bhuvangairi district was purposively selected as it has the highest number of Dairy Co-operative Societies (DCS) which are about 292. Out of 17 blocks/mandals in Yadadri- Bhuvangairi district, NARMUL is operational in 7 blocks. Bhongir block has been selected purposively since it has the highest number of dairy co-operatives which are 53. From Bhongir mandal, three villages from each category of highest procurement, medium procurement and lowest procurement of milk were selected for the study. From each village, 10 members of NARMUL were randomly selected. Thus, a total of 90 respondents were selected from 9 villages. The primary data was collected from the sampled respondents by personal interview method through questionnaire during March-April 2021. The data collected were subjected to tabular analysis in order to study the problems faced by the members of the NARMUL dairy co-operative.

Garrett's ranking technique was followed to prioritize the problems faced by the members. As per this method, respondents were asked to assign the rank for all the problems and the outcome of such ranking were converted into Score value by using the following formula:

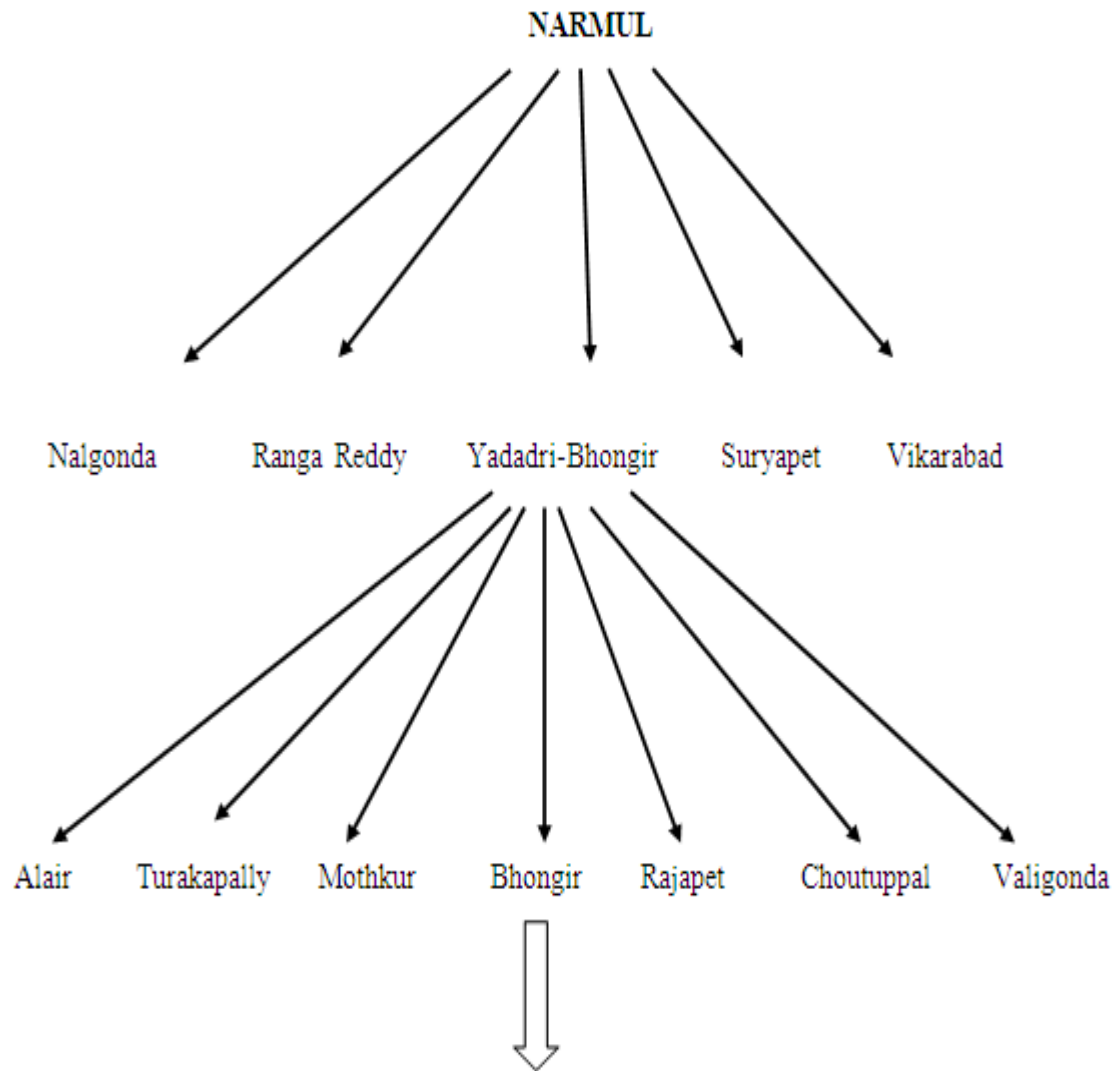
$$\text{Percentage position} = \frac{100(R_{ij} - 0.5)}{N_j}$$

Where,

R_{ij} – Rank given for the factor i^{th} variable by the j^{th} respondents

N_j – Number of variable ranked by the j^{th} respondents

With the help of Garrett's table, the percent position estimated was converted into scores. Then for each problem, the scores of each individual were added and then total value of scores and mean values of score were calculated. The problems having highest mean value was considered as the most serious problem faced by the NARMUL members [5].



Out of the 19 villages, 9 villages will be selected based on highest, medium and low procurement, 3 villages per each.



From each village 15 farmers will be selected. Thus a total of 135 respondents will be selected from the 9 villages.

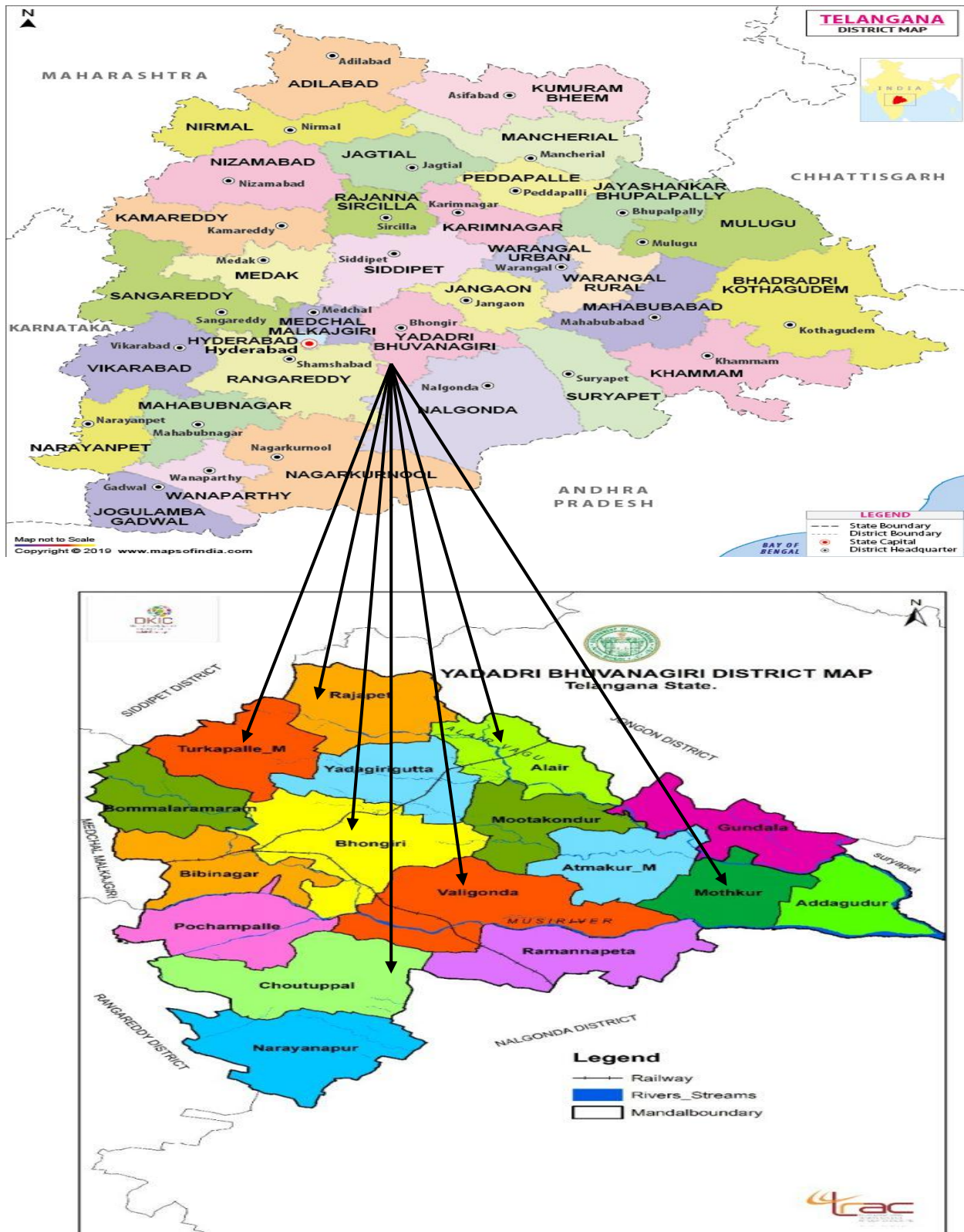


Fig. 1. Map of Telangana state showing 33 districts and selected district Yadadri – Bhuvangiri showing the operational areas of NARMUL

Table 1. Selection of the study villages and respondents- Members and Non-members

| District | Mandal | Procurement Category | Villages | Procurement Capacity (in litres/day) | Members | Non-Members |
|---------------------|---------|----------------------|----------------|--------------------------------------|---------|-------------|
| Yadadri-Bhuvanagiri | Bhongir | High | Baswapur | 1000 | 10 | 5 |
| | | | Chandupatla | 700 | 10 | 5 |
| | | | Kunoor | 500 | 10 | 5 |
| | | Medium | Raigiri | 300 | 10 | 5 |
| | | | Bandasomaram | 260-300 | 10 | 5 |
| | | | Bommaipalle | 220-250 | 10 | 5 |
| | | Low | Mustyalapalle | 70-100 | 10 | 5 |
| | | | Kesaram | 60-100 | 10 | 5 |
| | | | Cheemalakondur | 40-100 | 10 | 5 |
| Total | | | | | 90 | 45 |

3. RESULTS AND DISCUSSIONS

In the present study, efforts were made to study the constraints faced by the NARMUL members and also some suggestions were given to improve the milk procurement. The results were presented and discussed in the following sections.

3.1 Socio-economic Profile of the Sample Households

Nearly 51.11 per cent of members were in the age group of 41-55 years. Majority of the respondent members (40.00 per cent) were educated up to secondary school. In terms of annual income from agriculture, majority of the households (42.22 per cent each) earn between Rs. 25000 to Rs. 50,000 annually. In terms of annual income from dairy also, majority of the respondents of members (55.55 percent) are in the income group of Rs. 25001-50000. Majority of the farmers had taken membership during 2001-2021, which may be due to more awareness about NARMUL and its services to the members.

Problems faced by the members were given in Table 1. Low procurement price of milk was given 1st rank with the Garrett score 79.26 which says it was the most serious constraint faced by the members. Lack of disease control programs was given 2nd rank with the Garrett score of 61.74. The 3rd rank was given to No Bonus with the Garrett score of 58.77, lack of milk testing & animal screening facilities was given 4th rank with the Garrett score of 51.42, Irregular visits of Veterinary staff was given 5th rank with the Garrett score of 49.3 which indicates it was not a serious constraint, 6th rank was given to Unavailability of first aid services and lack of sufficient supply of vaccines to the animals with the Garrett score 43.33, Non-availability of loan facilities was given 7th rank with the Garrett score 40.23, Lack of A.I. facilities in/around the village was given 8th rank with the Garrett score 39.25, Inadequate supply of feed and mineral mixture was given 9th rank with the Garrett score 26.56 which implies it was the least serious constraint. Members of the Mustyalapalle village complained about the improper functioning of the milk tester at the collection center due to which they were not getting payments based on the milk fat percentage. The members replied that they were

Table 2. Socio-economic profile of the surveyed farmer households

| S. No | Particulars | Members | |
|----------|------------------|-----------------------|------------------|
| | | Number of respondents | Percent to total |
| 1 | Age | | |
| a | 25- 40 years | 24 | 26.66 |
| b | 41 -55 years | 46 | 51.11 |
| c | >55 years | 20 | 22.22 |
| 2 | Education | | |
| a | Illiterate | 20 | 22.22 |
| b | Primary | 8 | 8.88 |

| S. No | Particulars | Members | | |
|-------|---|--------------------------------|------------------|-------------------------------|
| | | Number of respondents | Percent to total | |
| c | Secondary | 36 | 40.00 | |
| d | Higher Secondary | 22 | 24.44 | |
| e | Graduation and above | 4 | 4.44 | |
| 3 | Annual income from agriculture (Rs.) | | | |
| a | Up to 25000 | 25 | 27.77 | |
| b | 25001- 50000 | 38 | 42.22 | |
| c | 50001- 75000 | 7 | 7.77 | |
| d | 75001- 100000 | 16 | 17.77 | |
| e | >100000 | 4 | 4.44 | |
| 4 | Annual income from dairy (Rs.) | | | |
| a | Up to 25000 | 6 | 6.66 | |
| b | 25001- 50000 | 50 | 55.55 | |
| c | 50001- 75000 | 18 | 20.00 | |
| d | 75001- 100000 | 4 | 4.44 | |
| e | >100000 | 12 | 13.33 | |
| 5 | Total milk produced | Share of total milk production | | |
| | | Sold to NARMUL | Sold to vendors | Retained for home consumption |
| a | Cow milk | 94% | 0% | 6% |
| b | Buffalo milk | 87% | 3% | 10% |
| 6 | Distribution of farmers in terms of taking membership with NARMUL | | | |
| | Number of farmers | Period | Percent to total | |
| a | 8 | 1970-1980 | 8 | |
| b | 12 | 1981-1990 | 13 | |
| c | 16 | 1991-2000 | 17.7 | |
| D | 24 | 2001-2010 | 26.6 | |
| e | 30 | 2011-2021 | 33.3 | |

Table 3. Prioritizing the problems faced by the NARMUL members

| S. No | Problems | 100 (Rij-0.5/Nj) | Garrett Score | Total value of the Garrett Score | Mean Value of the Garrett Score | Rank |
|-------|---|------------------|---------------|----------------------------------|---------------------------------|-----------------|
| 1 | Low procurement price of milk | 7.16 | 78 | 7134 | 79.26 | 1 st |
| 2 | Lack of disease control programs | 28.64 | 61 | 5557 | 61.74 | 2 nd |
| 3 | No Bonus | 33.45 | 59 | 5290 | 58.77 | 3 rd |
| 4 | Lack of milk testing & animal screening facilities | 47.90 | 51 | 4628 | 51.42 | 4 th |
| 5 | Irregular visits of Veterinary staff | 50.24 | 50 | 4439 | 49.3 | 5 th |
| 6 | Unavailability of first aid services and lack of sufficient supply of vaccines to the animals | 62.09 | 44 | 3900 | 43.33 | 6 th |
| 7 | Non-availability of loan facilities | 66.54 | 42 | 3621 | 40.23 | 7 th |
| 8 | Lack of A.I. facilities in/around the village | 68.14 | 40 | 3533 | 39.25 | 8 th |
| 9 | Inadequate supply of feed and mineral mixture | 85.92 | 29 | 2391 | 26.56 | 9 th |

getting paid Rs. 27 for cow milk and Rs 35 for buffalo milk irrespective of the fat percentage and they have also said that it's been more than 6 months, but still none of the officers were looking into the issue. The members of the village have also complained about delay in payments. The members replied that sometimes they will get payments after 2- 3 months which creates a major problem for feed and other costs.

4. CONCLUSIONS AND RECOMMENDATIONS

- ❖ NARMUL should acknowledge the serious problems faced by the members viz., low procurement price, lack of disease control programs, lack of bonus, lack of milk testing and animal screening facilities, irregular visits of veterinary staff, unavailability of first aid services and lack of sufficient supply of vaccines and it should try to solve their problems as soon as possible.
- ❖ NARMUL should make sure that all its procurement villages have proper milk testing facilities, in case of any repairs in the milk tester; it should be solved as soon as possible, so that the members can get premium price for their milk.
- ❖ NARMUL should also think upon increasing the procurement price for the members in order to cope up with other co-operatives and private dairies.
- ❖ Services like Animal health care, A.I., vaccines and medicines should be made available at least 50% subsidized which helps the members in cost reduction, ultimately leading to higher returns and also attracts the non-members in taking membership.
- ❖ It should also conduct training programs for fodder production, quality milk production and health camps regularly which helps in attracting more number of villagers to take membership. It should provide some incentives to its members in the form of bonuses.
- ❖ Timely feedback and responses from the members helps in sustainable milk procurement. NARMUL should focus on extending its network to other districts of Telangana which helps in widening its brand image.

The study can be concluded that the low procurement price of milk was the most serious constraint faced by the NARMUL members.

There is a need that the government should intervene to have a flexible pricing policy for the members and it also helps in increasing the membership of NARMUL, ultimately leading to more milk procurement. NARMUL should provide some services like animal health care, A.I., vaccines, and medicines at least 50% subsidy rates which helps the members in cost reduction, ultimately leading to higher returns and also attracts the non-members in taking membership. All the members should adopt scientific practices in dairy cow farming which helps in increasing the productivity of buffaloes and local cows. The studies of Akarsh Chaudhary and Ankit Singh, 2021 and Dhanavandan, 2016 also reported similar findings.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

CONSENT

As per international standard or university standard, Participants' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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