CHAPTER - II
RESEARCH DESIGN AND METHODOLOGY

The issues focused in this chapter include significance of dairying, statement of the problem, review of literature relating to women in dairy in terms of their participation, employment creation, income generation, consumption pattern, savings, asset holding, standard of living etc and finally empowerment. Further, need for the study, objectives, sampling design and size, data collection, tools of analysis, scope and limitations and chapter scheme are discussed.

1. Significance of the study

In India, at the end of March 2011, it is provisionally reported that in the total population, men constitute 51.54 per cent while women, 48.46 per cent. Therefore, there can be no progress unless the needs and interests of women are fully met. The need of the hour is to improve female literacy since education holds the key to empowerment through development. Men are at the center of power and dominate women. Women empowerment does not mean reserving seats for women in parliament and state legislatures etc. They need to be empowered economically.
educationally etc and provided proper health care and platform to show their potential. The last decades have witnessed some basic changes in the status and role of women in the society. There has been a shift in policy approach. This has further accelerated some sections of women to become increasingly self-conscious of their being discriminated against in several areas of family and public life.

The latest news items regarding violence committed against women reveal that women's position has worsened. The discrimination and deep-rooted gender bias are highlighted in the literature. It still exists in all sectors on the basis of caste, community, religious affiliation and class. A large number of women are either ill equipped or not in a position to propel themselves out of their traditionally unsatisfactory socio-economic conditions. They are poor, uneducated and insufficiently trained. They are often absorbed in the struggle to sustain the family physically and emotionally and, as a rule, are discouraged from taking interest in the affairs outside home. Oppression and atrocities against women are still rampant. Patriarchy continues to be embedded in the social system, denying a majority of women the choice to decide how they live. The over-riding importance of community in a patriarchal sense ensures that women rarely have an independent say in community issues. Female infanticide continues to be common. Statistics show that there is still a very high preference for a male child. Domestic violence is widespread and associated with dowry.

A review of government's programmes for women empowerment reveals that little has been done or achieved through these programmes. The discrepancy in the ideology and policy has resulted in continuous social and economic backwardness. It is necessary to sensitize the other sex towards women. It is important to usher in changes in societal attitudes and perceptions with regard to role of women in different spheres of life. They have unequal access to basic health resources and lack adequate counseling. Most women work in agricultural sector either as workers in household farms or as wage workers. Agriculture tended to become more volatile and insecure in recent years due to failure of monsoons. Consequently, women cultivators are negatively affected. The government policy for poverty alleviation has failed to produce any desirable results as women do not receive appropriate wages for their labour. There is also
significant amount of unpaid or non-marketed labour within the household. The increase in gender disparity in wages in the urban areas is quite marked as it results from the employment of women in different paid activities. They are exploited at various levels. They should be paid proper wages and allowed to work on par with men so that their status can be elevated in the society. In recent years, there have been explicit moves to increase women's political participation.

The targeted schemes tend to have only a limited impact on women since the basic thrust of development is not reaching common woman, making her life more fragile and vulnerable. There is no doubt about the fact that development of women has always been the central focus of planning since Independence. Empowerment is a major step in this direction but it has to be seen in a relational context. A clear vision is needed to remove the obstacles in the path of women's emancipation both from the government and women themselves. Efforts should be directed towards all round development of each and every section of women by giving them their due share. All the aforesaid accounts show that there is a dire need for empowerment of women. In animal husbandry, women play multiple roles. In recent years, we have witnessed a trend towards specialized farming and commercialization of dairying. The major driving force behind this trend has been the liberalization of the economy and globalization of trade with the signing of World Trade Organization (WTO). This has led to enhancement of milk processing capacity manifold. As a result, many big business houses entered the milk sector and have set up a large number of milk processing plants. Dairying has been considered a potential means of alleviating large scale unemployment, especially in rural areas. Women play a key role in animal, farm and home management. Successful dairy/animal husbandry enterprise not only improves the socio-economic status of rural women, but also provides a sustained and assured means of income to supplement their income from the main activity.

Rural India faces many hardships to earn livelihood. A majority of them are engaged in agriculture, allied agricultural activities etc. Income from agricultural activity has been as erratic as the monsoons. Hence, rural people are forced to think of generating additional revenues and employment opportunities through alternate vocations. Since these people are less literate and possess limited skills, the hunt for
alternate source of income and employment is limited to a few occupations. A majority of them choose rearing of milch cattle and sale of milk as a source of secondary or supplementary income. Rearing of cattle is a diversification from existing agricultural activity. Largely, rural women are engaged in this activity. These rural women, besides doing hard household chores, also undertake cattle rearing and milking. Dairy industry helps women to become economically independent and self-confident with improved prestige in the community. Then they may be able to organize themselves, identify their needs, build a positive image and be aware of their rights and responsibilities. It is hoped that dairying would drive women to be self-reliant, self-employed and empowered. Therefore, empowerment of women through dairying has attracted the attention of Government of India, state governments, governmental agencies / institutions, policy-makers and all those who have interest in rural development in the recent decade.

2. Statement of the problem

Women account for around 50 per cent of the population of India. The literacy rate among women is low when compared to their male counterparts. They are weak in all walks of life. There is a gender discrimination in the Indian society. This is more prevalent in rural India. Dairy is an allied agricultural activity and dairy operations are amenable to women. Most of these activities are undertaken by women. The governments have initiated and implemented a number of programmes and schemes for the growth and development of dairy since it mostly enables women to increase their household income and improve their status and standard of living. The government has set up organizations; allocated and disbursed crores of rupees under five year plans; special schemes and programmes were designed and implemented for the progress of dairy industry. The target group includes Scheduled Castes (SCs), Scheduled Tribes (STs), Backward Castes (BCs), Minority Communities (MCs) etc mostly covering the members of SHGs.

In India, Chittoor, the second largest milk producing district after Anand in Gujarat state, is the fountainhead of white revolution in Andhra Pradesh (AP). The district is known for its impressive livestock population and milk yield. The rural population is largely dependent on dairy sector since agriculture has increasingly proved a gamble and unremunerative. The gross cropped area has declined owing to
acute drought conditions in consecutive years. The area under paddy, groundnut and sugarcane fell substantially. Small and marginal farmers turned to dairying since it ensures them a decent income periodically and, thereby, stable livelihood. Fodder production, which does not require large quantity of water, rose as farmers began to cultivate jowar/maize during the rainy season. With increased fodder availability, milk production has jumped. Number of milch animals rose due to the initiatives taken by the government. A number of jersey crossbred cows and graded murrah buffaloes were brought to Chittoor district. This has helped to achieve milestones in the production of milk. There is plenty of grass in grazing lands due to high moisture retention in the soil in the western parts and above average rainfall in the eastern parts of the district. The rise in milk production may be attributed to cool climate, existence of large extensive grazing lands, cross breeding animals and fodder production initiatives.

The novel initiative has put dairying in a win-win situation in the district. The livestock-raisers get remunerative prices. The SHG members earn additional income per month. The dairies in the cooperative and private sectors, including mini one’s, have increased their supply manifold so much so that they even began to supply milk in rail wagons to Mother Dairy, New Delhi. All the bulk milk chilling units (BMCUs) are spread over not only in the dairy-rich but in the poverty-stricken mandals in the district. In south India, dairying has put the Chittoor district at the forefront of white revolution. Since women dominate dairy industry, there is a need to know how far women are empowered economically, socially, culturally, politically, psychologically and personally. Hence, the present study focuses on empowerment of dairy women in all spheres of life.

3. Review of literature

Several studies were undertaken on various aspects of dairy development in India such as economics of dairying, bovine population, capacity utilization, production of milk, procurement, consumption level pattern, availability of milk, cost and returns, marketing and pricing policy, management and working of dairies and the suitability of cooperative form of organization etc. There are quite a few studies on the growth and structure of dairy industry in AP, the efficiency of production, marketing of milk and milk products by district level unions and views of the
members of cooperative societies. In this section, an attempt is made to review the existing literature relating to participation of women including SHGs in dairy and the results thereon. It may be specially noted that the studies which have covered women only are reviewed.

Savitha\(^1\) organized a study on the role of rural women in the animal husbandry in Dharwad district of Karnataka state. The author found that 75.5 per cent of respondent were illiterates and the rest literates. Nearly 50 per cent were in the middle age group. The observations include: that over 93 per cent of respondents expressed non-availability of fodder as their main problem followed by water scarcity (90.00%), low cost of milk (83.33%) and costly fodder/feed/concentrate (63.33%) and frequent attack of diseases (13.33%). In the case of goat rearing, all the respondents had the problem of non-availability of pasture for grazing followed by frequent outbreak of diseases (86.66%) and costly fees for veterinary doctor (70.00%) and medicines (63.30%). A little over 62 per cent were without land and more than 91 per cent were married. Sanjay and Gill\(^2\) conducted a study on the economic viability of important agro-based enterprises meant for women in Punjab state during 2004-05. The study covered a sample of 100 women entrepreneurs in dairy. The study has pointed out that net returns per cow were worth Rs. 4,878 and Rs. 7,498 per buffalo, on an average, per annum. Total profit per respondent has sharply increased when the cost of fodder and family labour was excluded.

Sheela and Sundaraswami\(^3\) have undertaken a study on the problems of women involved in dairying in Bidar district of Karnataka. The study has pointed out several problems such as high cost of commercial cattle feed, long distance to veterinary hospitals etc confronted by sample respondents. Dabas et al\(^4\) have studied the constraints faced by rural women while adopting dairy technology in the Tarai area of Uttaranchal state. The researchers concluded that 54.16 per cent of respondents faced constraints in breeding, 28.33 per cent faced the problem of unremunerative price for milk, 11.67 per cent non-availability of loans and the rest high cost of maintenance of animals. The suggestions made include: frequently milk prices should be fixed on the basis of cost involved in its production. Cheap and timely credit should be provided under dairy development schemes; establishment of more number of animal health centers/animal husbandry centers to overcome the problems relating to cross breeding etc. should be undertaken.
Subodha et al. have evaluated the impact of dairying on the income of SHGs in Bareilly district of Uttar Pradesh state. For 44 per cent of the respondents, employment generation, on an average per year, was in the range of 400 - 500 mandays and income created was in the level of Rs. 22,000-28,000. There is a significant relationship between annual income and land holding level and education and employment status. Arun Kumar made a study on SHG women who took up livestock rearing as an enterprise. The sample size is 48. The author has reported that, 65 per cent of the respondents were illiterates and the remaining 35 per cent literates. It was opined that the consumption of milk of 52.08 per cent of family members of respondents had gone up. In addition, 58.30 per cent of respondents have reported that the FYM has increased due to entering into dairying. Bhagawati has reported that the AP Dairy Development Federation has trained 26 women extension workers spread over 90 women dairy co-operative societies in the state. Sikka and Dixit conducted a study on the perception of rural women on buffalo/animal husbandry in the Jind district of Haryana state. The study has found that 30 per cent of respondents produced 1-5 kgs of milk, 40 per cent 5-10 kgs of milk and another 30 per cent more than 10 kgs of milk, on an average per day. Rao et al. organised a study on dairy farming by the landless women in the southern states of India. The study has concluded that dairy farming is a profitable venture in the prevailing life situations as it provides regular income to landless women. The prominent reasons for undertaking rearing of cattle in the descending order of importance were regular cash income through sale of milk; less tedious than agricultural labour; and flexibility in working time.

Subramanueswari and Reddy conducted a study in Chittoor district of AP to know the profile of rural women entrepreneurs involved in dairying. The study has arrived at the conclusion that 50 per cent of women belong to small category with a low level of income. Further, another 50 per cent come under medium and large categories with medium and high levels of income. Gupta and Kaur organized a study on the role of women in economically vulnerable households with special reference to Biejpuri block of Agra district in Uttar Pradesh. It was reported that, on an average, per household, income from dairy was Rs.15,959. Among the categories, it was Rs.16,850 in marginal farmers and Rs.15,003 in landless labourers. Ningappa
has analyzed the impact of dairy development programmes of KMF on farm women in the Bidar district of Karnataka. The conclusions include: 80 per cent of farm women participated in simple operations such as cleaning of feeding vessels, providing clean drinking water for dairy animals, vaccination of dairy animals regularly and feeding colostrums to new calves. Patki et al. studied the role of rural women and their animal husbandry practices in Aolka district of Maharashtra state. The authors have found that rural women prefer animal husbandry mostly but relatively involve less in breeding and other health practices due to lack of skill/scientific knowledge. Badigar and Jutle in their study on the participation of women in agricultural and animal husbandry activities have reported that cent per cent of farm women are involved in animal husbandry activities like grazing of animals, care of animal at the time of delivery, feeding colostrums to calves and taking out and offering water to animals. Fifty per cent of women had participated in colostrums management, cleaning cattle shed, boiling of milk, churning of milk, cleaning of utensils used for milking and preparation of feed, collection and disposal of dung. A small percentage of women have participated in the preparation of feed at home, taking animals for artificial insemination, preparing special feed for sick animals at home and so on.

In his study, Chaudhary has pointed out the bottlenecks faced in the maintenance of dairy cooperative societies in Rajasthan state. The size of the sample is 20 dairy cooperatives. It was pointed out that untimely supply of milk has mainly affected women members. It means that they had to get up early in the morning on cold winter days to milk cows. They have ranked economic constraints such as delay in payments and irregular disbursement of bonus as first and second. Poor conception rate is the top ranking technical constraint among buffaloes. On socio-psychological front, prominent issues perceived were infrequent meetings in society and the perception that cooperatives were meant for influential people. In the marketing arena, manipulation in the testing of fat content of milk and malpractices of society top the list.

Deepti et al. have organized a study with 100 respondents drawn from four women dairy cooperatives (WDC) in Haryana. The findings include that, out of seven objectives, most of the women were aware of only two objectives. Although women
had the knowledge of role of cooperatives in the training of women in animal care and management and economic equality, it was limited to a small segment of respondents. Majority of the women had the knowledge of criteria of membership in WDC and name of the secretary. A small proportion knew about the number of women members, amount of milk required to get registration from the society, name of chairperson of the society and mode of selection of secretary and chairperson. Most of the members were aware of parameter of rate fixation, fat testing, place of milk being transferred from WDC, utilization of milk at milk plant and frequency of payment. A few respondents knew about the provision of bonus. Manisha has pointed out that the membership of dairy cooperatives has helped women to become economically independent and self-confident with improved prestige in the community. Formal social participation and group involvement has increased. The overall empowerment of cooperative members was more relative to non-members. The study has advocated that the participation in cooperatives should be ensured, training imparted, credit disbursed on time, agricultural labour institutions should be organized etc. Then they may be able to organize themselves, identify their needs, build a positive image and be aware of their rights and responsibilities in the society.

Kaur has conducted a study on dairy farming households, with reference to District Co-operative Milk Producers Union Limited, Punjab. The study brings out that institutional innovations have some positive impact. Nevertheless, women have not brought any major change in the established hierarchy. To increase women’s access and control, affirmative action is required in a number of areas. The suggestions include: pumping of more credit; effective women membership; increased representation of women in administrative and field staff levels etc. Finally, gender sensitization of female staff is important to achieve desired results. Papa et al investigated communication, education and training and intervention programmes intended to initiate a sense of empowerment among women in dairying. A conceptualization of communication and empowerment is offered. The empowering and disempowering dimensions of women’s communication are highlighted through their own words and experiences of participants. The analysis of communicative dimensions of empowerment of women has yielded three important insights. Firstly, women’s empowerment is displayed through different forms of communication and feminist action, particularly when women organize to accomplish social change
within their families and communities. Secondly, empowerment is embedded in democratic practice, especially when women discuss issues and make decisions that improve their quality of life. Thirdly, paradox and contradictions are an important part of empowerment process.

Narmatha et al. have reported results of a five day training programme conducted for 368 SHG women of Swarnajayanti Gram Swarojgar Yojana (SGSY) beneficiaries of DRDA. Their knowledge level in the subject was assessed before and after the training through knowledge test. Item-wise and domain-wise knowledge gain on different items was calculated. The highest knowledge gain was noticed in health care domain. More than fifty per cent knowledge gain was found in almost all the items of dairy farming practices. Puharhendi and Jayaraman have reported the positive impact of employment generation in 45 per cent of group members who had undertaken income generating activities. The additional employment generated through SHG lending worked out to 172 mandays per member by undertaking supplementary activities like animal husbandry. Jayachandra and Gurappa conducted a case study on the impact dairy cooperatives on income generation, employment creation and asset holding capacity of marginal and small farmers. The study has arrived at the conclusion that the annual income of 25.5 per cent marginal farmers and 22.98 per cent of small farmers has increased. Majority of idle women in these families have taken up dairying as part-time and full-time employment. The value of assets has increased 15 per cent and 12.5 per cent in the former and latter respectively.

Hari and Kumawat have organized a study on the impact of SGSY on the beneficiaries in Jhunjhunu district, Rajasthan. The study has reported that small farmers who had obtained assistance under SGSY for buffalo rearing could increase their annual income by Rs.15,310 in contrast to the Rs.14,170 earned by the non-SGSY families. In percentage terms, it is about 108 per cent higher in the former than in the latter. The study has also found that the buffalo rearing increased employment by 92 mandays or 52.79 per cent for small farmers and 72 mandays or 46.15 per cent for marginal farmers sequentially. Raisuddin et al. have made an attempt to study the impact of dairy farming on the livelihood of women under Grameen Bank in a select area of Rangpur district, Bangladesh. The study has found that the increase in income
from dairy sector was the highest when compared to remaining activities in general. On an average, per family, total income has increased by 87.51 per cent. Geetha in her study on diversified farming in Chittoor district, has concluded that 50 per cent of dairy farmers were in the middle age followed by 26 per cent young and 24 per cent old.

Singh et al have made an attempt to know the participation of women in agriculture, allied agricultural and household activities. The authors have concluded that the participation of women in animal husbandry has affected their education. Tripathi conducted a study on information receiving behaviour of rural women, which influences productivity of milch animals. It was found out that a high percentage of respondents (78.12%) have utilized more non-industrial interpersonal information sources such as friends, relatives, neighbors, own family members etc. Eleven per cent of them have utilized institutional sources such as veterinary doctors, cooperative personnel, scientists, extension agency, block personnel etc. A little over 58 per cent have used information from institutional sources at a medium level. Those who have utilized institutional sources of information at high and low level formed 13.55 per cent and 31.77 per cent respectively.

Chowdary made a study on Krishi Vignana Kendra(KVK) in Chittoor district. The author has inferred that 68.33 per cent of farmers had medium economic motivation. Farmers with low and high economic motivation constituted 16.67 per cent and 15.00 per cent sequentially. Reddy has made an attempt to study the impact of training programmes of Agricultural Marketing Committee in Chittoor district. The study has revealed that majority of farmers (76.67%) had medium economic motivation followed by low (15.83%) and high (7.50%) levels of economic motivation. Sheela has conducted a study on improved dairy practices in Bidar district. It was pointed out 35 per cent of women showed medium risk taking ability, 28 per cent low risk taking ability and 16 per cent high risk taking ability. ETC India in its report has reached the conclusion that income generation programmes launched through SHGs by promoting dairy activities had made a good impact on the income levels of landless and marginal farmers. Entrepreneurial training has increased the level of income. In addition, it has brought out entrepreneurial abilities of women.
Dollu conducted a study on the sustainability of natural resources management in a watershed development project in Bijapur district. The study has led to the conclusion that the impact of NRM was positive and significant on the livelihood of participating families. The significant impact was also seen with respect to physical, natural, social and financial capital and food security of participating farmers in the case of both SHG and non-SHG members. Bardhan et al have organized a study on the constraints perceived by women in rearing dairy animals. The respondents have narrated problems faced by them such as non-remunerative prices for milk, testing of milk only on the basis of fat percentage, reproductive issues, distant location of artificial insemination centers and high cost of feed. Women have engaged in many activities of farming and allied occupations. These are significant. Vyas and Pari reported that the rural women households involved in dairy faced problems due to non-viability of artificial insemination, lack of facilities for marketing of milk and lack of pasture land.

Nainie et al have reported that the involvement of women is more in the activities like churning and milking. Bhat has found that, women had opportunities of employment and derived additional income from animal husbandry in Kaira district of Gujarat. Studies conducted on time devoted by farm women to animal husbandry activities have indicated that they spent a considerable time on them. Verma has found that farm women devote 3-16 hrs per day to animal husbandry activities. On the other hand, Sridevi has reported that women spent 32.92 per cent and 2.5 per cent of their time on farm and allied activities including animal husbandry. Veena et al have found that the rural women spent 7.2 hours, 4.0 hours and 6.7 hours, on an average, per day, at home, in dairy and in allied activities respectively. In peak season, the average time spent on these activities increased to 6.4 hours, 3.6 hours and 4.00 hours per day respectively. Lepcha found that women spent on an average, 7.20 hours per day on agriculture. Agrawal has organized a study in Bareilly district. The author has concluded that, on an average, per day, farm women spent 3.3 hours per day on animal husbandry activities during lean agricultural season while 2.53 hours during the peak agricultural season. In another study, Arya and Madhukar have concluded that the time devoted by farm women to agriculture, animal husbandry and supportive activities was 17 per cent, 68 per cent and 15 per consequentially.
Patel and Mehta\(^43\) reported that, in dairying, landless women work more number of hours than men and their per hour earnings are four times higher than that earned from agriculture. Further, they spent 40 per cent of their time in dairying whereas women belonging to small category spent 33 per cent of their time. Studies have indicated that women's participation in agriculture and animal husbandry activities depends on various socio-economic factors of respective families. Rao\(^44\) reported that rural women's participation was negatively correlated with land-holding pattern and the family size. Malathi\(^45\) also found the relationship between classification of women on the basis taste, age and education and their extent of participation in extension activities. Bhanja\(^46\) has concluded that there is a socio-economic status and adoption of improved practices.

The socio-economic and personal characteristics of women involved in dairying vary across different activities there in. The maximum number of women participating in storage, harvesting and threshing belonged to the age group of 25 – 40 years and family size of 5-8 members. The number of rural women who participate from nuclear families in farm activities was more as compared to those from joint families. Sinohi\(^47\) has arrived at the conclusion that a maximum number of rural women from backward classes participate in storage, plant protection and sowing operations. While a maximum number of rural women from SCs are engaged in threshing, harvesting, irrigation and so on. Khunzu et al\(^48\) have found that the level of education, economic status and risk orientation of livestock holding households was positive and significant. Further, there is a correlation between these and the adoption of H.S vaccination. Saraswathi et al\(^49\) have concluded that the total work load on women has decreased with an increase in their land holding size. On the other hand total load of men increased with a rise in their land holding size. The deviation between these is reported to be high in agricultural work load whereas less in the caring for cattle and buffaloes.

Dasgupta and Sengupta\(^50\) have found that the involvement of SCs in livestock rearing was found prominent. Their level of education and exposure to extension activities was also found to be low. Similarly, Kandware and Guleria\(^51\) have also found that the number of female workers, per farm, per hectare, was the highest in SCs. Illiteracy, too is relatively higher in them. Satpathy\(^52\) reported that the
participation of farm women, especially with small holdings, was quite substantial in all animal related activities. Besides, involvement of women in milking and marketing was independent of land-holding size. Promila⁵³ has stated that majority of farm women work in dairying since they consider it as highly profitable. More than 50 per cent of them gave green fodder and concentrates to cattle as feed but not minerals.

Jain and Shukla⁵⁴ have concluded that as high as 83 per cent of women labour force participate in almost all the agricultural operations including animal husbandry, dairying and other allied form activities. They contribute income to family and, thereby, to the national economy. Their contribution is unfortunately unrecognized. It was pointed out that the impact of involvement of women on growth in the production of milk is little if it is not coupled with proper processing, utilization and marketing. The modern processing technologies were developed in the country. They are tailored to preserve milk and conserve milk solids in rural areas. Therefore, there is a dire need to adopt them. These techniques result in value addition. This is so because they improve storage ability and marketability of milk and milk products. These in turn, result in the creation of employment opportunities to farm women all the year round and protect their employment in the trading of milk where it is declining due to technological advancements, which are labour-saving and capital intensive.

Gupta⁵⁵ has found that women contribute a lot to livestock rearing such as cutting, collection and chaffing of fodder, feeding animals, cleaning shed, milking, preparation of milk products, collection of cow dung and cow dung cakes and their storage. He also reported that cattle rearing is more or less a female domain as women play a key role in performing various cattle related tasks. Kumari et al⁵⁶ in a study have observed that 80 per cent of operations in dairy milk production were performed by women. They have also mentioned that traditionally women sold milk to milk traders and middlemen and kept the milk money for their expenses. Now there is a sea change. It is the main source of income to certain sections of society, particularly rural India. Om Prakash⁵⁷ has studied the training needs of farm women in scientific dairy farming practices in Karnal district of Haryana. The author has found that farm women possess little knowledge of animal health care while they have vast knowledge pertaining to management related tasks. This has implication that farm
women should be provided more skill oriented and need based training for adoption of efficient scientific dairy farming practices. Consequently, production of milk increases and, thereby, ensures higher returns to women.

Ramchand et al. have studied the extent of adoption of dairy innovations by farm women in Karnal district. They reached the conclusion that there is a positively significant correlation between milk consumption, milk disposal, attitude towards dairy farming, knowledge of breeding, feeding, health care, management and dairy innovations. Singh and Punia have concluded that a majority of trainees developed medium level of skills in select aspects of dairy farming immediately after the training programme. Fulzele has stated that the response of literates in improving skills is better than that of illiterates. Deshpande is of the view that necessary skills can be imparted to select traditional leaders. Dubey is of the opinion that periodic training is extremely important for dairy women. Necessary guidance and counseling may be given in their day to day activities. A linkage should be established between the community and trained professionals. Bhatnagar has perceived that performance is related to skill, time spent and training needs of women.

Durdy has concluded that wives have appreciable influence in decision making in lower strata and nuclear families. Dandekar et al. in a study have found that rural women participate in varying degrees in decision-making. Their participation in decision-making is relatively higher in the utilization of milk, number of milch animals to be kept, quantity of milk to be sold and kept for home consumption and the type of fodder to be fed. The involvement of rural women in several areas such as; feeding of animals at calving time; which animal to be sold?; feeding of young calves; quantity of fodder and concentrates to be fed to milch animals; which breed of milch animals to be purchased; care of new born calf; source of drinking water for animals; stopping of milking before calving; number of times of milking; treatment of animals and housing of animals in cold and hot seasons etc. Their participation in decision-making relating to the kind of housing for animals; utilization of income from milk; vaccination against contagious diseases; grazing of animals; and breeding practices is comparatively low.

Two research studies have focused on dairy development among tribals in Surat district. Baviskar has organized a case study on Mandal Dairy Cooperative
Society in the tribal areas of Surat. The second one was Kambla Dairy Cooperative Society, being the first women's milk cooperative society in tribal India. The study gives an interesting account of tribal life, problems faced by tribals and the role of voluntary agencies in the progress of dairying in tribal areas. Both Verma and Pant have advocated that the adoption of dairy in crop farms would result in more work opportunities for family members in lean season. Dairying is important to bring rapid growth and desired social changes in the country side. The dairy industry has made rapid progress since Independence. About 203 modern milk plants were established. So far, little research has been carried out in AP i.e. an interstate comparative study of APDDC with ANAND. During 1974, Agro Economic Research Centre, Andhra University has studied the pattern of agricultural development in AP and made passing references to the need to develop dairying in AP. In another study, the Agro Economic Research Centre during 1975 reviewed the working of Marginal Farmers and Agricultural labourers Development Agency, Vishakhapatnam. Naga Brahman has studied the trend in the production of milk of Sangam Dairy and the prospects of Guntur Milk Producers Cooperative Union Limited. Ratnani has analyzed the factors that influence the demand for and growth of milk in Vishakhapatnam city. Raghubunatha Rao has examined the role and contribution of dairy cooperatives to the growth of income in A P.

Mitra in his study has made an attempt to evaluate the impact of Operation Flood (OF) Programmes on the milk production of women in the rural India. Further, the author has analyzed the insights into the extent of involvement of women in dairying. There is a management-intensive participation of women from agricultural families since they spent long hours per day, on an average, on dairying. It means the involvement of their children, particularly daughters, in various kinds of dairy related work. This has in turn resulted in withdrawal of girls from attending school. The author has concluded that the establishment of cooperative dairies has deprived women folk the income from dairying, which they have had earlier. Somjee and Geeta have made an attempt to study the effect of cooperative dairies on social changes in Indian villages. The study has examined the nature and extent of change in various aspects of social and economic life of rural communities as a result of their exposure to organization, principles and activities of cooperative milk societies in several districts of Gujarat. The findings include that there is an intense desire to join
a common queue in front of dairy cooperatives. This has helped to eliminate untouchability so far as collection of milk is concerned. Further, it was held that the cooperative dairies have helped in increasing the participation of women as compared to earlier days.

Sarker and Hideki Tanaka\textsuperscript{74} have reported that India produces 5 per cent of milk. This is too inadequate to meet the demand of the country. As a result, many dairy cooperatives have come up to meet local demand. It is held that, livestock production is a family operation for small farmers and most of livestock management is carried out by women. Nevertheless, it is pointed out that little research has been conducted on the role of dairy cooperatives on the empowerment of women or the role of women in dairy farming in the rural India. This paper has examined how far dairying has empowered rural women? It has analyzed dairy activities of \textit{KISHAN} cooperatives in the country. Empowerment of women has been examined with focus on three dimensions. An attempt also is made to measure the extent of empowerment. It has also evaluated the factors that contribute to women empowerment. Sharma and Vanjani\textsuperscript{75} have underlined that the primary objective of women co-operatives under Operation Flood programme is the provision of employment generation, creation of income and increased status for rural women.

A field study has been organized to study women of Shankpur in Rajasthan state. The authors have examined the class and gender biases in dairy policy; effect on nutrition and health of women; trend in food crop production; employment potential; and the replication of inequalities inherent in green revolution. Dusk, an Indian village, presents one of these magical moments that vividly impressed the consciousness of any outsider who has visited there. Wafts of smoke make large cigar-size curls in the air, wending their way up to the sky through thatched roofs or the empty space over an open chulah, where twigs and cow-dung fuel cakes leave behind an aroma of chalky smoke from the cooking fire. Women and girls tend to evening meal, stirring the boiling rice or kneading wheaten bread, perhaps making some lentils or vegetable as well. The main streets of the village raise their own dust from the hooves of returning animals that had been taken to graze early in the morning. Sometimes, there are comical moments when an impassioned buffalo was taken to racing wildly down the path, scattering all in its way. Before cooking the
evening meal, women and girls attend to feeding and milking of animals; after
the
meal, there are dishes to be washed and the chulah to be cleaned. When this pastoral
scene comes to mind, it becomes women's time. More than any other part of the day,
dusk is when all women engage in the same activities and partake of a collective
consciousness through the enactment of their gender roles.

Kulandaiswamy\textsuperscript{76} conducted a study in Thrissur district of Kerala to assess
the training needs of women engaged in dairying. It was found that, out of five major
farm operations studied, the farm women required training mostly in housing. The
knowledge is needed for proper design of cattle shed, selection of breeds and
compounding balanced feed using locally available ingredients. Skill is required in the
construction of scientific low cost cattle shed, identifying symptoms of common
diseases and banking and insurance. Kallioniemi and Kynalainen\textsuperscript{77} have focused on
working conditions and role of women dairying in the context of change in
agricultural practices from tradition to modern. The sample size is 10 dairy farms.
Primary data is collected through interview scheduled as well as through observation.
As a consequence of marriage or courtship with a farmer, women typically take to
dairying. Women were involved in a wide range of tasks such as cleaning cattle barns.
It was observed that whereas men operated machinery in cattle barns, women
performed physical, manual work and so on. One of women's tasks was to monitor
and take care of health and living conditions of farm animals. Nearly all the women
considered work with animals and being 'close to nature' rewarding, but half assessed
the workload as too heavy. General strategies used to avoid exhaustion were to
employ salaried workers, utilize networks and/or use contractors. Nearly all
respondents had experienced certain problems related to organization such as absence
from farm work during sickness or holidays etc. To improve women's work situation
and facilitate their valuable contribution to agriculture, the authors have made several
suggestions.

Tike\textsuperscript{78} has stated that dairy farming is the most labour-intensive production
sector in agriculture. Most of the family members spend nearly 89 per cent of working
hours on farms. Kyyra\textsuperscript{79} has reviewed the work, working conditions and role of
women in dairy farms in the context of changed agricultural practices. Bock\textsuperscript{80}
organized a study on the role of women in farms. This is based on a research project
on women's occupational safety and wellbeing at work in dairy farms conducted during 2007-09 by MTT Agrifood Research, Finland. It was concluded that gender-sensitive research is needed within the agricultural sector because women have an important but too often un-recognized role in dairy farms. The real life of women in farms is usually presented. A challenge for research is to make women's work on farms more visible. And also present the contribution of women to agricultural production. In a study, Vare has argued that there is a difference between the farm women and men in the distribution of work tasks. Therefore, women are exposed to health risks. Although the number of women who work in farms has decreased, the share of those who remain in food production is relatively higher than before. This is so because of enlarged farm size.

4. Need for the study:

There are many studies on dairying in the country at the macro level including nation, state, region, district and so on. A few studies at the micro level are also found in the literature. These studies have made an attempt to highlight the significance of dairying, organizational setup and financial assistance provided over the years for the growth of dairying; trend in the livestock production including bovine; working of cooperative dairies; income and employment; economics of dairying; programmes and schemes for the spread of dairying as an alternative to agriculture since agriculture is mostly dependent on the occurrence of monsoons, drying up of tanks and bore wells in the recent past; production of milk; procurement of milk; consumption pattern; marketing of milk; suitability of cooperative form of organization etc. There are quite a few studies on the growth and structure of dairy industry in AP, the efficiency of production, marketing of milk and milk products by district level unions and views of the members of cooperative societies.

There are also studies on dairy industry in Chittoor district covering the aforesaid aspects. There are several studies on the empowerment of women who have participated in several vocations such as industry / trade / services / SHGs etc. There are very few studies on the empowerment of dairy women at the national/ state level touching up on general issues. There is no specific study focusing its attention on the empowerment of dairy women at regional/district/firm/individual levels in terms of economic, social, cultural, psychological, political and personal aspects. Further, it is relevant to point out that the researcher hails from an agricultural family; knows
women, matters and materials as she belongs to a family with fair sex and was involved in the operations of dairying along with her parents for quite a long time. The researcher was born and brought up and grown in Chittoor district. Researcher is familiar with the district and dairying. Therefore, an attempt is made to emphasize the void identified in the existing available literature relating to the present theme of research. Mostly, the present study may be the first of its kind in thecountry, AP and Chittoor district.

5. Present study:

The present study is outlined in the following pages.

5.1 Objectives:

The present enquiry is proposed to analyze empowerment of women through dairying. Therefore, the specific objectives of the study include: to

(i) review the progress of dairying in Chittoor district including the efforts of the government in the recent past;

(ii) identify the motivational factors that influence women to take up dairying;

(iii) analyse the extent and magnitude of economic, social, psychological, political and personal empowerment attained by women through dairying;

(iv) evaluate the participation of women in decision-making; and

(v) examine the relationship between socio-economic factors like age, nature of family, caste, range of income and education status and women empowerment;

5.2 Sample selection and size:

For the present investigation, women in dairying in Chittoor district constitute the universe / population. The sample respondents are selected from among milk pourers and palamitras in the district. Out of the pourers, some of them collect and supply milk to BMCUs. They are called palamitras. To study the empowerment of women in dairying, necessarily pourers and palamitras are to be brought into the
sample. An aggregate of 300 women are purposely selected through stratified random sampling technique. Of them, 250 are pourers and the rest, 50, palamitras. While doing so, caste groups and social status are kept in mind. The caste/categories covered in the enquiry include SCs, STs, BCs, MCs and OCs. The sample size of pourers and palamitras is determined on the basis of respective population in the study area. The size of the sample is restricted due to availability of time, paucity of funds/money and other constraints on the part of the individual researcher.

5.3 Data collection:

This study makes use of both the primary and secondary sources of data. The secondary information has been collected from books, journals, periodicals, magazines, reports, publications of DRDA, District Animal Husbandry Department, Government of AP web sites etc. The primary data has been collected through a schedule specially designed for the purpose by personal interview method. The schedule was pre-tested in a pilot survey before canvassing among the respondents. Modifications were made to the earlier one in view of the responses. The information collected include: personal data; previous occupation; advisors to take up dairying; motivational factors; financial assistance; production of milk; use of labour; locus of control; variables concerning economic, social, psychological, political and personal empowerment of women and their impact on standard of living. The pourers have not properly maintained any book of accounts to part with the information sought by the researcher. Recall method has been followed. As far as possible, approximations are made to reflect actual data and make the information reliable. The findings drawn, conclusions arrived at and suggestions made there on are as good as the data itself.

5.4 Tools of analysis:

The collected data has been processed, synthesized, synchronized, classified, codified, tabulated, analyzed and interpreted with the help of appropriate statistical tools available in SPSS package. These include: percentage, 't' test, chi-square test, Likert's three point scale and Karl Pearson's coefficient of correlation.

5.5 Scope and limitations:

The study is confined to women involved in dairying in Chittoor district only. Those involved as pourers and palamitras are considered. The women working in
BMCUs as technicians and workers employed for measurement of milk and cleaning are excluded from the study. Similarly, women working in mini, private and cooperative dairies are excluded. The reason is that they are just employees. Employee empowerment is not the theme of the present investigation. As the pourers do not maintain records, the information is collected through recall method. Despite the exercise of care and skill, there might be recall lapses. The results may be applicable to the regions, where similar and identical conditions like Chittoor district prevail at the state, country and global levels. Further, the respondents should possess the same characteristic features including climate, natural resources, irrigation facilities, cropping pattern, age, education, family size, caste affiliation, occupational pattern, orientation towards allied agricultural activities etc.

5.6 Chapter outline:

The report is divided into seven chapters. The first chapter is introductory in nature and reviews the trend and growth of dairying in India as well as AP. Besides, concept, significance, approaches, measurement, dimensions and government programmes for accelerating women empowerment in the country are covered in this chapter.

The second chapter covers the significance of the study, statement of the problem, review of existing available literature relating to the topic of research, need for the study and research design and methodology, which includes objectives, sample design and size, data collection, tools of analysis, scope and limitations and chapter scheme as described in the preceding pages.

The dairy profile of Chittoor district in terms of government programmes / schemes, livestock population, efforts of DRDA and Animal Husbandry Department, trend in the progress of milk production in aggregate and mandal-wise, per capita availability of milk, milk procurement revenue division-wise and dairy-wise is given in the third chapter.

The characteristic features of sample respondents are provided in the fourth chapter. It also examines the factors which have influenced women to take up dairying.
The fifth chapter analyses the economic and social empowerment of women. The parameters employed include income generation; access to control over income; access to savings; control over resources; and decision making power within the family on small and big purchases, education and marriage of children, mobility, better health and social status and gender equality. The relationship between classification of respondents on the basis of age, level of income, nature of family, caste affiliation and educational status and their opinions on the aforesaid parameters is evaluated.

The last but one chapter analyses empowerment of women in respect of psychological, political and personal spheres including the impact of dairying on the wellbeing and standard of living of women. The variables concentrated on are self-confidence, self-esteem, and motivation; regularity in casting vote in elections, interest in political matters, participation in local self governments; leadership, communication and public speaking skills, ability to go to government offices and participation in social gatherings/protests. These are related to variables as stated in the fifth chapter. It also covers the impact of dairying on food, clothing, housing, drinking water and sanitation.

The last chapter incorporates the summary of findings, conclusions, suggestions and hints for further research in future.
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