Chapter-2
Review of Literature
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REVIEW OF LITERATURE

Review of research works done on the present theme of research provide the background and process and level of academic and research work done in the past. The direction and thrust of research area and key issues could be understood well. In this chapter the researcher made an effort to review the research work done since 2000 up to date in India as well as abroad.

**Shah, D. (2000).** In his opinion that the predominance of middlemen in this area was mainly due to the non-existence of co-operative infrastructure. Generally, the middlemen advanced money to needy milk producers and procured milk at a low price round the year. It was reported that 75 percent of marketed surplus of small producer’s production was cornered by them. Similar observations were reported in a study conducted in Jalgaon and Kolhapur districts of Maharashtra.

**Ray and Sunil (2000).** Conducted a study in Jaipur city reported that local milkmen supply fresh raw milk at the doorsteps or to the vendor who in turn supplies it to households. The prices varied from Rs.13-20 per litre for cow’s milk depending on adulteration of milk with water and the category of customer. The price generally realized by small farmers from the local vendor was about Rs.10-12 per litre, whereas they got only about Rs.9-10 from the cooperatives. Some middlemen also deployed daily wage workers to collect milk by using bicycles, jeep or camel cart to collect milk from the doorstep and take it to different selling points in nearby major cities.

**Rougoor C.W., Sundaram. R. and Van Arendonk J.A.M. (2000).** Investigated the relation between breeding management and 305-day milk production. Second goal of the study was to investigate advantages and disadvantages of principal components regression (PCR) and partial least squares (PLS) for livestock management research. Multicollinearity was present in the data set and the number of variables was high compared to the number of observations. Out of 70 variables related to breeding management and technical results at dairy farms, 19 were selected for PLS and PCR, based on a correlation of $\geq 0.25$ or $\leq-0.25$ with 305-day
milk production. Five principal components (PCs) were selected for PC-regression with 305-day milk production being the goal variable. Related variables were combined into one so-called synthetic factor. All synthetic variables were used in a path-analysis. The same path-analysis was worked out with PLS. PLS forms synthetic factors capturing most of the information for the independent X-variables which are useful for predicting the dependent Y-variable(s) while reducing the dimensionality. Both methodologies showed that milk production per cow is related to critical success factors of the producer, farm size, breeding value for production and conformation. Milk production per cow was the result of the attitude of the farmer as well as the genetic capacity of the cow. It was found that at high producing farms the producer put relatively much emphasis on the quality of the udder and less on the kg of milk. Advantages of PLS are the optimization towards the Y-variable, resulting in a higher R2, and the possibility to include more than one Y-variable. Advantages of PCR are that hypothesis testing can be performed, and that complete optimisation is used in determining the PCs. It is concluded that PLS is a good alternative for PCR when relations are complex and the number of observations are small.

Khem Chand, Kulwant Singh and Raj Vir Singh (2000). Revealed that milk production in commercial dairy herds is an economically viable and profitable enterprise in Bikaner city. It generated around 973 man-days of gainful employment per year in an average dairy herd. The contractual procurement and auctioning system of milk has helped a lot in increasing the number of dairy herds in the city, the optimum herd size analysis has suggested the scope for further increases in the number of milch animals in the dairy herds. Though these dairy herds have helped in increasing the supply of milk, they have created many problems too. The herd owners many times set their animals free, which generally choked due to disposal of animal waste in it. These problems are created by around 40 percent of dairy herds which are maintained inside the city. The shifting of dairy herds to the outskirts of the city can solve the problem. Another way to improve upon the situation is by developing a modern dairy complex along the lines of Aarey milk colony, Mumbai with provision of good infrastructure facilities.
Rawal and Vikas (2001). Analysed that the comparison of caste, education and land holding of MS farmers with NMS farmers points to a larger proportion of households belonging to the backward caste, being less educated and holding lower size of land are not able to participate in dairying. A recent study of two dairy cooperatives in Gujarat argued that inequality in land ownership, caste, illiteracy and undemocratic functioning of co-operatives are the barriers to entry. Illiteracy might not be a factor in Kerala but land ownership could be one, as among the lower size-class of land owner’s smaller proportion seem to be keeping cattle.

Hegde. H.G. (2001). Pointed out that there is very little breathing time for Indian farmers to face the challenge of importing milk and milk products under WTO. Our farmers are not prepared to solve them well on time. It is necessary to reduce the cost of milk production by increasing the productivity of our animals. We also need to reduce the cost of handling of milk and processing by reducing intermediary agencies and by adding value to the produce. The quality of the milk should be of international standard which can be improved through screening of the livestock against important diseases and maintaining clean surroundings in the dairy farm. Finally, the policy of producing low fat milk for general consumption while the high fat buffalo milk can be supplied to a selected category of customers interested in high butter fat. We need to discuss with the farmers and understand their problems and solve them at the earliest. Surely, we also need to strengthen our farmers associations to acquire new technologies understand the milk marketing scenario at the international level and find suitable solutions. We hope the task is within our reach for solving.

Hemme. T., Garcia. O. and A.R. Khan (2002). In their opinion 130 million people in Bangladesh should consume at least 120 g of milk per day (as fluid or processed in any form), the annual milk demand would be about 5.70 million tons. This estimate of milk demand in Bangladesh demand is over two and half times FAO’s recorded national milk production for the country (for 2002). Therefore, meeting Bangladesh’s potential milk demand is a huge national task and the question arises how well-positioned Bangladesh is to meet this milk demand. This study shows that the 2 cow farms (BD-2) not only cover full economic costs, but can produce milk at a cost almost as low as the larger farms included in the study.
This should be very encouraging for more than 7.2 million Bangladeshi families involved in small scale cattle rearing, of which few make a profit and most consider it a highly risky activity. The small farm (BD-2) is competitive at the national level but not at the international level. The cost of milk production of all farms in comparison to larger farms in India, Pakistan and Oceania is around 50% higher. Assuming a liberal trade of dairy products in the future all farms analysed will have to improve the production systems significantly to gain from the growing demand of dairy products in the country. Further studies of small dairy farms in Bangladesh need to include a land-less milk production system, a typical goat milk production system and a more exhaustive evaluation of the non-cash benefits obtained from dairy cattle (like draught power). Moreover the cost reduction potential of the farms by improvements in farm management should be analysed.

Prashant Khare Sharma and Singh (2003). Their opinion, Milk collection was higher in healthy season (from September to February) and lower in unhealthy season (from March to August). In spite of more production in the month of July and August, the producer members of the society were not in position to transport their product due to lack of all-weather roads. As the distance of the milk producer’s co-operative society increases form the dairy plant, the volume of milk collection decreases, the milk collection was higher in those societies, which are well connected to the dairy plant. The variable cost was the main component of cost of milk production and the maximum cost incurred in the purchase of feed and fodder and in labour management. Low price of milk was the most important problems in the collection of milk, followed by lack of cold storage, delay in payment, inadequate water for animals, lack of all-weather roads, small quantity of marketable surplus of milk, improper treatment, lack of cross breed animals and uncertainty of electricity. Hence, efforts should be made to solve all there constraints.

Samajdar, Tanmay and Chander, Mahesh. (2003). In his study about the livestock husbandry of the Vangujjars of Uttarakhand also observed that even though they possess sound experience about various aspects of animal husbandry, they are vulnerable to and open for exploitation by the middlemen to whom they sell milk despite the existence of cooperatives in that area. They are often riddled with debt.
and stand marginalized. The study recommended that the cooperatives should come forward to find out the reasons for Vangujjars’ apathy towards cooperatives and involve them as society members.

**Kurup (2003).** Viewed that the price realized by farmers from informal sector was Rs.9.5 to Rs.10 per litre, whereas cooperatives paid between Rs.8.00 and 8.50. Further, the middlemen who bought from them made instant cash payments whereas it took 12-15 days to realize payments from the cooperative system.

**David A. Hennessy and Jutta Roosen (2003).** Their opinion that the Milk production is seasonal in many European countries. While quantity seasonality poses capacity management problems for dairy processors, a European Union policy goal is to reduce price seasonality. After developing a model of endogenous seasonality, we study the effects of three E.U. policies on production decisions. These are private storage subsidies, production removals, and production quotas. When cost functions are seasonal in a specified way, then arbitrage opportunities interact with storage subsidies to reduce both price and consumption seasonality. But production seasonality increases because storage subsidies promote temporal market integration. Conditions are identified under which product market interventions increase quantity seasonality.

**Sarvesh Kumar and Sirohi Smita (2003).** Opined that the Indian dairy industry has undergone substantial changes during the 1990s due to opening of dairy products processing for the private players after industrial delicensing in 1991. At the same time concerns have emerged about the viability of increasing number of private processing units competing with each other and with existing plants for fixed supply of raw material, that is milk. The study attempts to address this concern using the data of financial statements of 30 dairy processing firms in the private sector (including 5 multinational corporations) for the period 1991-92 to 2000-2001. The economic performance of these firms is assessed on the basis of growth trends and ratio analysis. The growth trends indicate positive growth in scales (at current prices) and value of output (at constant prices) for 25 out of 30 firms and compound annual growth rate varied from 172 percent to 4.20 percent for sales and 147 percent to 1.43 percent for value of output. The newly established firms registered very high
growth rates due to low base levels. The investments in terms of gross fixed assets (at current prices) also increased in all the firms excepting one. It was found that there existed in general large inter-firm variations in the economic performance of the dairy forms. On one hand, are the MNCs that have made heavy investments in dairy business, capturing a sizeable share of the market showing good economic performance. On the other extreme are the chronically sick units and some other poor performing ones that are basically facing teething problems. In between these two extremes are some Indian firms that have shown considerably good performance and have a foothold in the market. One common problem affects all the firms is the underutilization of installed capacity due to shortage of raw milk in relation to their processing capacities. The establishment of large number of private dairy plants after industrial delicensing has aggravated the shortages. The study concludes that the dairy industry has the potential of improving its performance provided that there is more milk flow through the organized sector.

Ashutosh Shrivastava (2003). Conducted a study to find out the impact of milk processing on income and employment on small farms of Damoh district, Madhya Pradesh and to examine the problems faced by the small milk processing farms and suggest measures thereon. Twenty small milk processing farms mainly producing deshi ghee and 20 non-milk processing farms were selected. The study concludes that the processing of milk definitely increased income and employment of the small milk processing units compared to non-milk processing units which sold directly to other vendors. The major problems faced by the processing farms are non-availability of good quality of milk animals, inefficient management of feeding and breeding of animals, lack of proper organized market system (farmers did not receive remunerative prices every time), lack of storage facilities, technical and infrastructure support system and packaging facilities. To overcome these problems the study suggests that since the processing units are looked after by household workers, good training programmes for managing these units be developed for manufacturing low cost packaging material and dairy feed formulations at the village level. The collection centres must be established on co-operative basis. Sufficient financial assistance by the government credit agencies at cheaper rates of
interest must be provided to encourage the small producers and infrastructure facilities and extension activities must be developed.

**Jeyachandra Reddy M., Reddy Y.V.R. and Ramakrishna Y.S. (2004).** Studied and analysed the economics of milk production in three areas, viz., Chittoor district in Andhra Pradesh, Erode District in Tamil Nadu and Kolar district in Karnataka involving aspects related to existing cost structure of milk production, profitability of crossbred dairy cows in the three states under the changed socio economic political scenario and also suggest methods to improve the viability and profitability of these enterprises. The data were collected by survey method during the year 2003. Seventy five farmers were selected at each location giving due importance in the selection of all categories of households. The number of dairy cows studied were 108 in Chittoor, 178 in Erode and 84 in Kolar districts. The net cost of maintenance of a cross bred cow per day worked out to Rs.38.99, Rs.49.36 and Rs.48.88 in Andhra Pradesh, Tamil Nadu and Karnataka respectively. The cost per litre of milk worked out to Rs.5.48, Rs.7.20 and Rs.5.84 in the same order. Feed cost was the major component in gross cost which accounted for 63.88 per cent in Andhra Pradesh, 72.14 per cent in Tamil Nadu and 71.62 per cent in Karnataka. The net profitability varied from 43 per cent in Tamil Nadu, 70 per cent in Andhra Pradesh and 83 per cent in Karnataka. The variations among the three studied locations are due to variation in breed, feeding pattern, maintenance of animals, etc. The study has further brought out the fact that higher fat content provides higher price as milk is priced based on fat and solid-Net-Fat (SNF) content by dairies. Hence proper scientific breeding procedure is to be followed to improve fat content in the milk as well as milk production per animal.

Besides, scientific breeding, feeding, treatment and veterinary care and management would not only increase milk production and fat content in addition to reduction in cost, but also incomes of farmers. Thus dairy farming is considered an instrument for socio economic change in rural areas.

**Ashok Shivagaje, Nanda Pandharikar, and Mayura Mathankar (2004).** Viewed that India’s estimated milk production in the year ending March 1999, 74 million tonnes, was 13% of the world’s milk production. This has been appreciated by the
United Nation’s Food and Agriculture Organization (FAO), which has declared India as the world’s largest producer of milk. FAO-estimated milk production of 71 million tonnes by USA in the same year is placed second in the list. Data on estimates of milk production in the world and India during 1985–2000 reveal that a linear regression $Y = a + bt$, where $i$ is the year and $Y$ the estimate of milk production, is the best fit to the data. For India, the estimates of $A$ and $B$ are 41.14 and 2.28 respectively, and for the world they are 501.85 and 3.80 respectively. This implies that an annual increase in estimate of India’s milk production is found to be 2.28 million tonnes ($P < 0.01$), whereas it is 3.8 million tonnes ($P < 0.01$) for the world. Assuming that the rate of increase will remain the same for the year 2010, estimates of India’s milk production will be 100.52 million tonnes, whereas the world’s milk production is estimated to be 600.56 million tonnes. The demand for milk products would increase as a result of increase in national GDP. In order to meet the demand, it is essential to have consistent increase in milk production, which will be possible on successful implementation of ‘Operation Flood’ and evolution of new animal breed.

**Rajendran. K. and Samarendu Mohanty (2004).** Explained that the operation Flood and dairy co-operatives emerged in India as the largest rural employment scheme, enabling the modernization of the dairy sector to a level from where it can take off to meet not only the country’s demand for milk and milk products but can also exploit global market opportunities. This study reviews the existing status of milk marketing and dairy co-operatives in India and provides recommendations to meet future challenges. The results of the study indicate that 80 percent of the milk produced by the rural producer is handled by an unorganized sector and the remaining 20 percent is handled by an organized sector. It is found that the dairy co-operatives play a vital role in alleviating rural poverty by augmenting rural milk production and marketing. Involvement of intermediaries; lack of bargaining power by the producers; and lack of infrastructure facilities for collection, storage, transportation, and processing are the major constraints which affect the prices received by producers in milk marketing. Milk quality, product development, infrastructure support development, and global marketing are found to be future challenges of India's milk marketing.
**Dhawal Mehta, Jatin Pancholi and Paurav Shukla (2004).** In their action research have extensively used world-wide for decision making related to policy due to its nature of involving the researcher and decision maker in the process. Following independence in India, one of the major revolutions was brought about in the dairy sector with regard to complete management systems.

Most innovations and changes occurred in the line function while the staff function was more often neglected in the overall change. The authors undertook an action research study focusing on staff function and re-laid improvements that can influence policy related to decision making. The authors have also developed the MPS model for staff function which can help a company or industry in appraising their own staff and functions which can thereby aid in utilizing their potential.

**Sukhpal Singh (2004).** Pointed out that Indian dairy industry has witnessed many policy and market changes in the last decade both in the domestic as well as the international markets. In this context, this paper examines the profile of organized private sector in liquid milk business, its growth, performance, business and marketing strategies and prospects, with special reference to the Gujarat state and the Ahmedabad milk market, besides assessing the impact of policy changes in the recent years. It is primarily based on the secondary data and the interviews with the co-operative and private dairy unit owners and managers in Ahmedabad city mainly focused on liquid milk as Ahmedabad is one of the most competitive milk markets in the country with more than 25 brands of liquid milk being marketed in the city. The nature and dynamics of the Ahmedabad milk market are analysed and marketing strategies of various types of players are examined. The policy of delicensing and its impact on milk marketing in India is also addressed. The paper concludes by discussing important steps for achieving competitiveness in the domestic and international markets.

**Isabelle Schluep Campo and John Beghin (2005).** Explored and investigate Japanese dairy markets. We first provide an overview of consumer demand and how it evolved after World War II. Using historical data and econometric estimates of Japanese dairy demand, we identify economic, cultural, and demographic forces that have been shaping consumption patterns. Then we summarize the characteristics of
Japanese milk production and dairy processing and policies affecting them. We next describe the import regime and trade flows in dairy products.

The analysis of the regulatory system of the dairy sector shows how its incentive structure affects the long-term prospects of various segments of the industry. The paper concludes with policy recommendations of how to reform the Japanese dairy sector.

Jacques Somda, Mulumba Kamuanga and Eric Tollens (2005). Suggested that the domestic milk production has been for a long time hindered by many factors including lack of interest from decision makers, distorted economic policy and biotechnical constraints. For the last 20 years, many developing countries have been attempting to develop the domestic milk production sector. However, research on the basic realities and the viability status of enterprises within this sector remain largely unproved in many developing countries. This study focuses on the characteristic of smallholder milk producers in Gambia. Data were collected from 90 smallholder farm households to characterise milk producers and evaluate the profitability and viability status of this activity. Based on current typology of farms and gross margin analyses at farm level, the study identified two resource-based types of smallholder farms. The current milk production system is surely viable. Constraints to increased productivity include lack of improved technology at farm level and weak institutional support. Despite the low viability status, it is shown that milk production generates reliable incomes, which could be a departure for most farmers to intensify farming systems, particularly in areas where no loan schemes exist for purchasing agricultural inputs.

Ramakrishnappa. V. and Jagannatha Rao. R. (2006). Opined that the dairy enterprise is an established sector in rural India and is playing a vital role in generating additional income and employment. In Karnataka, dairy development is a positive and significant as state contributes towards milk production, marketing, and processing of various dairy products in India. The microfinance programmes extended in dairy sector are helpful to take up dairy as main occupation among economically backward communities in the state. In this paper, an attempt was made to analyse the different aspects of microfinance scheme (New Swarnima)
implemented by KBCDC. The implementation of New Swarnima Scheme, one of the most popular microfinance schemes in the state to promote dairy among backward communities, was assessed at micro level by selecting 18 beneficiaries belonging to landless labourers, marginal and small farmers in Kolar district in Karnataka state. The study found that the microfinance scheme has positive impact on income and employment generation, and has improved the natural resource management options.

**Karmakar K.G. and Banerjee G.D. (2006).** Pointed out that growth in milk production is likely to continue at the present rate of 4.4% in the near future. Who is going to handle this incremental milk? We must bear in mind is both income and price. We must bear in mind both income & price elasticity account for approximately 15% of the total expenditure of food. Demand for milk, at current rate of income growth is estimated to grow at 7% per annum. Interestingly, demand for milk is expected to grow steadily over the next two decades as the low income rural and urban families who have higher expenditure elasticity would also increase their income due to new economic environment.

**Chauhan. A.K., Raj Vir Singh and Raina. B.B. (2006).** Examined the economics of manufacturing of different dairy products, viz. ghee, full-cream milk, standardized milk, toned milk, double-toned milk, skimmed milk and ice-cream (processing only) have been reported. The study has been conducted in an ISO-9002 dairy plant situated in the north-eastern part of Haryana. It has been observed that all the products, except the double-toned milk are being produced above the recommended breakeven level. A comparison of unit manufacturing cost with unit price received by the plant for different products has revealed that ice-cream manufacturing has been the most profitable proposition among different dairy products, and standardized milk has provided the maximum profit margin among the milk pouches manufactured during the study period, 2000-01. The double-toned milk has revealed a loss. Therefore, the study has suggested that the quantity of double-toned milk production should be raised at least equal to the recommended break-even level to avoid losses, if there is a market demand for this product or the resources of this product could be shifted to some other profitable products.
Bhowmilk (2006). Opined that the Cost and returns from milk production were estimated separately for local and crossbred cattle. The gross cost of maintenance was worked out as the sum of fixed and variable costs items. The net cost was arrived at by deducting the value of dung from gross cost per milch cattle per day was divided by the average milk yield per day of the respective breed. The net return was calculated by deducting gross cost from gross return.

Srikanth Reddy. M. and Vasudev. N. (2006). Studied and an attempt has been made to quantify the level of consumption, production, and marketed surplus of milk in Karimnagar district of Andhra Pradesh. Better feeding followed by congenial weather conditions during the winter has positive effect on milk production. It was also interesting to note that in relative terms marketed surplus was more in summer (ranging from 58.5 percent to 60 percent) compared to that in rainy season (50 percent to 56 percent). On an average marketed surplus during the year ranged between 55 percent in the case of small farmers to 57.2 percent in the case of medium farmers. But in all the categories of farmers the consumption of milk was above recommended level, i.e. 250 gm / day/person. With the disposal of marketed surplus of milk through different agencies it was evident that the co-operatives and milk vendors emerge as major procurement agencies (more than 70 percent) in all categories of farmers. Majority of the small and medium farmers preferred milk vendors while large farmers preferred milk co-operatives to sell their surplus milk. The large family size, education level of family had influenced the consumption pattern of milk. These lead to consume more, resulting in shrinkage of marketed surplus.

Stukenberg. D., Blaney. D. and Miller. J. (2006). Suggested that the Federal dairy programs have been instituted to assist dairy farmers in marketing their milk. Milk marketing licenses were issued for city markets in 1933 during the depression. Federal Milk Orders replaced licenses in 1937 with enactment of the Agricultural Marketing Agreement Act. Low prices returned in the late 1940s and Congress passed the Agricultural Act of 1949 creating the support program for milk. Congressional involvement in milk marketing was minimal until passage of the 1977 Farm Bill.
A support price adjustment to seek favourable political responses from farmers resulted in higher prices and ultimately higher production. Large expenditures and burdensome supplies caused Congress to make major changes to both programs. Other milk marketing programs have evolved from Congressional actions, including export and promotion programs. The exciting and consolidation of the dairy processors and producers have led to a reduction in the number of marketing orders.

**Edward V. Jesse, Norman F. Olson and Vijay P. Sharma (2006).** Opined that, in the third in depth country study, the Babcock Institute study team discusses India’s dairy sector. India is an interesting case study because it has the world’s second largest population making it the world’s largest milk-producing country. The country’s main system of dairy productions involves a smallholder production system in which most of the milk produced is consumed on the farm or distributed through informal channels.

This system of production, combined with Indian policies that encourage self-sufficiency and restrict dairy imports, leaves much unused potential in the Indian dairy market.

**YueYaguchi and Kei Kajisa (2006).** Pointed out that it was widely believed that not only a Green Revolution in a crop sector but also a White Revolution in a dairy sector has generated the great momentum of agricultural development in India since the late 1960s. However, owing to the dominance of sector-specific analyses, the importance of the interaction between these two sectors has been neglected in the existing literature. The interaction is important in that the dairy sector provides manure to crop production while the crop sector supplies fodder to the dairy. Using household data collected in Tamil Nadu, India for three decades from 1971, we show that the increase of fodder production as a by product of Green Revolution in 1970s enabled subsequent White Revolution in 1980s and the by product of the White Revolution, i.e., increased manure availability is enhancing the recent revival of organic farming system for sustainable agricultural development.

**Rajarajan. T.R. (2006).** Opined that the combined effects of both domestic reforms and WTO commitments in the last decade have changed the environment in which the Indian dairy industry will operate in future. A term of trade is a significant
indicator of gains from trade and efficiency of domestic industry. In average terms, the terms of trade of Indian dairy products have declined in the post-liberalization period compared to pre-liberalization years. The year-wise trend is unstable with wide fluctuations in post-liberalization years. The real effects of trade liberalization will unfold only when the WTO provisions are properly implemented.

**Frank H. Fuller, Jikun Huang, and Scott Rozelle (2006).** Pointed out that with the rapid growth in China’s dairy industry, a number of recent papers have addressed either the supply or the demand trends for dairy products in China. None, however, presents a systematic explanation for the recent growth in both the supply and demand for dairy products. The goal of this paper is to sketch a more comprehensive picture of China’s dairy sector and to assess the nature of the sector’s development in the coming decades. Drawing upon several empirical studies, we examine the trends in dairy product consumption to create a composite picture of the factors underlining the recent growth. We also empirically investigate the sources of production gains in milk supply and assess the relative importance of expanding herd size, changes in the nature of production, technological change, and improvements in efficiency to the overall growth of milk production.

**Waghmare P.R. and Hedgire D.N. (2007).** Opined that Milk productions in India during 1950-51 was 17 million tonnes which has reached 78 million tonnes in 1997-98. Presently India ranks first in the world in milk production. The Operation Flood Programme was instrumental in dairy development activities. These programmes are useful in upgrading the standard of living of farmers.

**Denford Chimboza and Edward Mutandwa (2007).** Viewed that branding is increasingly being used as a strategy for managing markets in developed countries while developing countries still lag behind. The objective of this study was to assess the level of brand awareness and factors underlying brand preference of dairy brands in Chitungwiza and Harare urban markets in Zimbabwe. A total of 90 respondents who included individual and institutional consumers were selected using judgmental and simple random sampling respectively. Primary data was collected using structured interview schedules developed for each category of consumers. Consumer product awareness indices, cluster analysis and factor
analysis were the main tools used in the analysis. The findings of the study showed that 52% of the respondent consumers were aware of ARDA dairy brands despite having come across few ARDA DDP advertisements. Four factors were identified as key determinants of dairy product choice namely promotion, price and availability of product, attractive packaging and product quality. There is need for agricultural marketers to incorporate these findings in the formulation of responsive marketing strategies.

**Sharma. M.L., Raka Saxena, and Dipan Das (2007).** Their opinion that India is the leading milk producer in the world and the dairy cooperatives are the backbone of Indian dairy industry. This study has analyzed the inefficiencies existing in improving milk production, procurement pattern, marketing channels, and price spread of a dairy cooperative, Uttaranchal Cooperative Dairy Federation Ltd (UCDFL), also known as the Kumaun region of Uttarakhand and has proposed a model for eliminating these inefficiencies. It has been found that UCDFL is focused mainly on liquid milk marketing and has not adopted product diversification, which is the need of the day. Nainital and Almora districts of Kumaon region have been selected for the study; these cover almost 40 per cent of cattle population in the division, except Udham Singh Nagar. It has been found that due to insufficient margins, the number of agents working for other private dairies has increased. Different marketing channels for milk have been identified and price spread has been calculated for all the channels. Lack of business development services related to dairy industry has been found leading the farmers to disassociate from Anchal. The study has suggested that Anchal should evolve a definite policy with regard to procurement of milk in both lean and regular periods and to sustain its members, incentive package should be provided. Anchal should find ways to establish fodder banks at strategic locations for providing fodder during emergencies and periods of fodder scarcity. Local sale of milk at the society level should be encouraged to increase the popularity of Anchal brand.

**Kathiravan. G., Thirunavukkarasu. M. and Selvakumar. K.N. (2007).** Opined that the Livestock has been an integral part of the Indian rural economy and an indispensable tool of income and employment generation to millions of poor households in India. A study was undertaken in Tamil Nadu (India) to ascertain the
cost of livestock services availed by farmers. The districts of Tamil Nadu state were classified into two categories, viz., ‘livestock-developed’ (LD) and ‘livestock under developed’ (LUD), based on initial baseline. The cost of treatment of cattle was more compared to other species of animals with the similar disease condition. The mean cost of treatment of a chronic medical case in cattle at a public veterinary centre was INR 20.83, in which the labour cost alone accounted for INR 17.35, with the remaining amount for the drugs purchased outside. However, the mean costs of treating a chronic medical condition in buffalo and small ruminant at public veterinary centres were only INR 13.34 and INR 10.80, respectively. Cost of treating an acute surgical case in cattle at a public veterinary centre was INR 43.08 and treating a chronic surgical case was INR 41.85, while an acute medical case cost INR 35.69 and a gynaecological case INR 31.68. The major component of cost in all cases was the labour cost incurred to bring sick animal to the centre. The charge collected at public veterinary centres per insemination was uniform at INR 15.00. However, the average total cost, including labour cost for transport accrued to the farmers varied from INR 27.58 for cows to INR 29.17 for buffaloes. Overall average cost of insemination by engaging a veterinarian at farm gate was INR 57.83 for cows and INR 45.00 for buffaloes. Although no charges were made for animal health care services rendered at public veterinary centres, the charges in terms of imputed labour cost for bringing the animal to the centre was incurred. Service fee accounted for more than 60 per cent of cost of treatment for home service by a veterinarian or a para-veterinarian.

**Radha Krishnan, Nigam. S., and Shantanu Kumar (2008).** In their opinion growing human population, rising per capita income and increasing urbanization are fuelling rapid growth in the demand for food and animal origin in developing countries. India possesses the largest livestock population in the world. Contrary to the large population of livestock in India productivity of Indian livestock is low compared to many developing countries.

**Sintayehu Yigrem, et al. (2008).** Studied about two hundred forty dairy producers. Both rural and urban producers in the four major towns representing the Shashemene–Dilla area in southern Ethiopia, were selected using a multi-stage sampling techniques, with the objective of characterizing dairy production,
processing/handling, marketing systems as well as to prioritize constraints and opportunities for dairy development in the area. To characterize dairy marketing systems in the study area, a Rapid Market Appraisal (RMA) technique was employed. Dairy marketing systems were studied with the help of topical guidelines. Dairy producers were interviewed using a pre-tested and structured formal questionnaire. Two major dairy production systems, namely the urban and mixed crop–livestock systems were identified, and again classified into two categories based on the major crops grown as a cereal crop producing and earnest-coffee producing areas. The average family size of urban and rural dairy producers was 7.19 ± 0.26 and 7.58 ± 0.23 persons, respectively. Dairy contributed about half of the income of urban producers but it made up only 1.6% of the total income of families in the mixed crop-livestock production system. Average farm size of households in the mixed system was 1.14 ± 0.99 ha, while more than 97% of the urban producers use their own residence compound for dairying, which is only 200–400 square meters. Average herd size per household in the cereal based mixed system (3.8 ± 0.42) was higher than in the earnest-coffee based systems (2.3 ± 0.36). Out of the total herds of urban producers, 32% of cattle were local cows while 19% were crossbred. Husbandry practices like feeding, watering, housing, breeding, milking, calf rearing, waste management, and record keeping were also different between the two production systems. An estimated total of 9,645,020 litres of milk was produced annually from 4463 small and medium farms in the four towns. The majority of producers (61.7%) in the mixed crop–livestock system process produced milk for home, while the majority of urban producers (79.2%) produced milk for sale.

Mandeep Singh and Joshi. A.S. (2008). Reported the economic analysis of dairy farming has been reported for marginal and small farmers in Punjab for the year 2003-04. It has been found that a majority of the farm households are not able to meet their requirements from their income from crops. Further dairy farming has emerged as a major allied enterprise for supplementing the income of marginal and small farmers in Punjab. Income from off-farm sources has been identified another important factor contributing significantly to the disposable income of these farm households. The study has suggested to further exploit the potential of off-farm
sources towards meeting the domestic expenditure. Also, the technical efficiency of crops and dairy farming should be improved to provide more income to farmers.

**Saravana Kumar. V. and Jain. D.K. (2008).** Conducted a study ‘Technical Efficiency of Dairy Farms in Tamil Nadu” which was carried out to evaluate dairy farm households in terms of efficiency of milk production using stochastic frontier production methods. The data for the study comprised of fixed investments on dairy farms, quantity and price of feeds and fodders fed to individual animals, labour utilization pattern, veterinary and miscellaneous expenses, quantity of milk produced and price realized etc. collected from 160 sample households across flush and lean season for the year 2002-03. The coefficients for the value of green fodder and concentrate were found to be statistically significant with a relatively higher magnitude implying their greater and significant role in crossbred cow milk production. The technical efficiency of crossbred cow farms ranged from 72.30 to 97.90 percent with an average of 82.10 percent. The study indicated that there existed a scope to increase milk production of an average farm to 16.32 percent for crossbred cows and 14.04 percent for buffaloes without incurring any extra expenditure on these farms.

**Kedija Hussen1, Mohammed Yousuf1 and Berhanu Gebremedhin (2008).** Viewed that the Ethiopia holds the largest ruminant livestock population in Africa, productivity has remained low and its contribution to the national economy is limited compared to its potential. The overall milk production system in Ethiopia could be broadly classified as pastoral and agro pastoral, crop-livestock mixed and peri-urban and urban dairy production systems. Cattle, camel and goats are the main livestock species that supply milk. Total annual milk production from about 10 million milk animals is estimated at about 3.2 billion litres, which translates to 1.54 litres per cow per day (CSA, 2008). The bulk of this milk production (81.2%) comes from cattle, while small ruminants and camels contribute 12.5% and 6.3%, respectively (CSA, 2008). The lowland covers 60% of total land area and is home for 12.2% of the total human population. Ecologically it has arid (64%), semi-arid (21%) and sub-humid (15%) areas dominated by semi nomadic transhumance population whose economy is entirely dependent on livestock production (GETACHEW, 2003). Milk is the major source of food and income. Cattle
dominate the population (55.4% of the TLU) followed by camels (15.3%), goats (13.7%) and sheep (6.4%), (CSA, 2008), and produce 27% of the total annual milk production (Getachew, 2003). Information is very scantly on the milk production and marketing system in the lowland areas in general. This study was therefore undertaken in the lowlands of Mieso district to (1) characterize the milk production and marketing system, (2) identify major constraints for the development of market-oriented dairy production, and (3) formulate recommendations for further development interventions.

**Doyon. M., Criner. G. and Bragg. L.A. (2008).** Viewed and opined that the New England dairy farmers are under intense price pressure resulting from important growth in milk production from lower cost of production in Southwest states as well as by retailers’ market power. Agricultural officials and legislative bodies in New England and in other Northeast US states are aware of these pressures and have been reacting with emergency dairy farm aid, following a very low 2006 milk price, and with state legislations in an attempt to address perceived excess retailing margins for fluid milk. In this paper, we suggest that a sigmoid demand relationship exists for fluid milk. This demand relationship would explain fluid milk asymmetric price transmission, high-low pricing, and the creation of a large retailing margin (chain surplus) often observed for fluid milk. It is also argued that a sigmoid demand relationship offers an opportunity for state legislators to help northeast dairy farmers capturing a larger share of the dollar of the consumers through various policy options. Therefore, 5 milk market channel regulatory mechanisms (status quo, price gouging, supply control, fair share policy, and chain surplus return) are discussed and compared. The supply control mechanism was found the most effective at redistributing the chain surplus, associated with the sigmoid demand relationship for fluid milk, to dairy farmers. However, this option is unlikely to be politically acceptable in the United States. Second-best options for increasing dairy farmers’ share of the consumers’ dollar are the fair price policy and the chain surplus return. The former mechanism would distribute the chain surplus between retailers, processors, and farmers, whereas the latter would distribute it between consumers, retailers, and farmers. Remaining mechanisms would either transfer the chain surplus to retailers (status quo) or to consumers (price gouging).
Rhone. A., Ward. R., De Vries and Elzo. M.A. (2008). Analysed and investigated determinates of how milk pricing system, farm location, farm size, and month and year affected farm milk price (FMP), farm milk revenue (FMR) and loss in FMR of dairy farms in the Central region of Thailand. A total of 58,575 milk price and 813,636 milk yield records from 1034 farms were collected from November of 2004 to June of 2006. Farms were located in the districts of Muaklek, Pak Chong, Wang Muang, and Kaeng Khoi. A fixed linear model was used to analyse milk price of farms. Two pricing systems were defined as 1 = base price plus additions / deductions for milk fat percentage, solids-non-fat, and bacterial score, and 2 = same as 1 plus bulk tank somatic cell count (BTSCC). Farm size (small, medium, and large) was based on the number of cows milked per day. Results showed that FMP were lower (P < 0.05) in pricing system 1 than in pricing system 2. Most small farms had higher (P < 0.05) milk prices than medium and large farms across in both pricing systems. Large farms lost more milk revenue due to deductions from bacterial score and BTSCC than small and medium farms.

Kamat. G.S. (2008). Has emphasised on the market-oriented dairy development. In his opinion it can alone ensure success of dairy units whether they are in public, private or co-operative sector. There is a great need to institutionalise milk trade from the stage of production to marketing.

Rangasamy. N. and Dhaka. J.P. (2008). Analysed the marketing of milk and milk products by dairy plants of co-operative and private sectors in Tamil Nadu and compared. The study is based on the data collected for toned milk, standardized milk, full cream milk, flavoured milk, butter and ghee from the selected co-operative and private dairy plants of the Coimbatore district for the financial year 2001-2002. It has been found that the marketing cost for toned milk is the same in both the dairy plants, whereas it is higher for standardized milk, full cream milk and flavoured milk in the co-operative dairy plant. The marketing cost has been found less in the cooperative plant for products like butter and ghee. All the dairy products earn more marketing margins in the private sector than in co-operative dairy plant, except for toned milk. The marketing efficiency of cooperative dairy plant for all dairy products has been observed relatively less than that of private dairy plant, except for toned milk. The study has suggested the development of co-operative
dairy industry in a sustainable manner, and the co-operative dairy plants should formulate long-term vision and strategy. The study has observed that value addition in dairy products should be done without compromising the quality and consumer-oriented market research and development should be accorded greater attention.

**India Post (2008).** Opined that the demand for value added milk products, such as cheese, dahi (Indian yoghurt) and probiotic drinks is increasing at a double digit rate. At present, India seems to be self-sufficient in meeting its requirement for milk and milk products. However, given that demand is growing faster than supply, there could be serious issues with respect to self-sufficiency in the near future. Any increase in milk production is dependent on the farm gate price received by the producer. Farm gate prices have increased by more than 50 percent in the last three years. Focused efforts would be required on two fronts increasing farm size (currently the average number of animals per producer is three to four), and increasing productivity of milk producing animals. Global milk production, approx. 655 million tonnes in 2006/07, is estimated to be growing at 1.6 percent per annum. India ranks second in terms of milk production after the EU-27 and accounts for 15 percent of global production. Annual milk production in India was at 100.9 million tonnes in 2006-07 and was growing at 4 percent per annum. The market for liquid milk, as well as value-added dairy products, is still largely dominated by the unorganized sector. India has an insignificant share of the global dairy trade, less than 1 per cent, despite being a leading producer of milk.

**Satbir Singh, Timothy James Coelli and Euan Fleming (2008).** Viewed that, Since the 1970s, the policy of Indian government has been to promote dairy development on the basis of the cooperative organizations. During the 1990s the dairy industry in India was liberalized. This study examines the impact of the liberalization policy on the cooperative dairy plants in India. Data envelopment analysis (DEA) and the Fisher index approach are applied to measure economic efficiency and total productivity changes, respectively. The data involves 65 observations from a complete panel of 13 cooperative dairy plants from 1992/93 to 1996/97. The empirical results show that the deregulation and liberalization of the dairy industry alone is not the answer.
Albert Christoph Dhas (2008). In his opinion, from independence, size and composition of bovines in Tamil Nadu showed differential growth pattern. The total bovine population showed an increasing trend up to the early-Sixties and thereafter stagnant till the early Eighties. While the milch animal stock increased steadily, the work animals showed a declining trend from seventies. These trends not only indicate the growing importance of dairy animals but also the competitive linkage between work and milch animal population. The work animal stock is highly influenced by the agro-climatic, institutional and economic factors and an analysis of capturing them is attempted in this paper. Initially, the changes in the size and composition of bovines, work animal population and its density since independence are traced. Subsequently, the factors determining work animal population and its density are examined using regression models. Two regression analyses are made; one representing phase I (1956-1974) and the other for phase II (1977-1994). Phase I basically represents the period when mechanization in agriculture had been at the early stages and phase II represents the period when mechanization (both energisation of irrigation and tartarisation) was at a relatively higher level. The study revealed that while the agro-climatic and irrigation factors had played a major role in shaping the work animal density during the period prior to mid-Seventies, the technological, economic and institutional factors played a major role in recent years.

Radha Krishnan, Nigam. S., and Shantnu Kumar (2008). In their opinion growing human population, rising per capita income and increasing urbanization are fuelling rapid growth in the demand for food and animal origin in developing countries. India possesses the largest livestock population in the world. Contrary to the large population of livestock in India productivity of India livestock is low compared to many developing countries.

Khan. N et all (2008). Indicates that livestock has been practiced as an auxiliary activity in the process of production of different food and non- food grain crops since antiquity. The farm animals such as the cattle, the buffalo, the goat, the sheep, the pig, the hen, and so on were always reared as domestic and subsistence animals. Many traditional techniques and practices had been applied in the process of their rearing like mixed farming nomadic herding, commercial grazing and traditional
activities supplementing in different global agro-climatic conditions. Commercial form of livestock husbandry has existed during colonial in Asia country.

**Dhanabalan, M. (2009).** Opined that dairy has an important role in improving the overall economic conditions of rural India. To maintain the ecological balance, there is need for sustainable and balanced development of agriculture and allied sectors. From our first plan onwards, planners have given priority to allied sector for the economic development of the rural sector. Dairy farming is described as a small industry which provides gainful employment opportunities. It comprises of about six per cent of the national income.

**Mathialagan, Chandrasekaran. D.C. and Manivannan. A. (2009).** In their study conducted with the objective of training the farmers on feeding technologies for improving the SNF content of milk in milch animals and to assess its impact at the field level. About 159 women dairy farmers cum self-help group members belonging to ten different villages of Namakkal district were selected for the study. A benchmark survey was conducted for all the women dairy farmers on cost effective feeding practices for dairy cattle, feeding of chopped fodder on the animals and supplementing diet with minerals. The results indicate that 46.37% of cow milk samples had less than 8.0% of SNF content. When the SNF content falls below 8.0% the payment for the milk will be calculated based on the fat content of the milk as per the price policy of milk co-operative societies. In such cases, the farmers would get a lower price of Rs.6.50/- per litre instead of Rs.8.75 / litre of milk.

**Haese M.D., et al. (2009).** Analysed the efficiency on dairy farms in Reunion Island, a French overseas district located in the Indian Ocean. On this island, dairy farming is promoted with financial and technical support from the European Union, with the French and local governments aiming at reducing dependency on imports of milk powder and dairy products and creating employment. A critical factor for increasing the local milk production is the limited availability of arable land because of the small size and the volcanic nature of the island. In this paper, we study the efficiency levels of dairy production of 34 farms by using a data envelopment analysis approach. The average technical efficiency score of farms, assuming constant returns to scale, was 0.927, with 19 out of 34 farms not being efficient. The
technical efficiency with variable returns to scale specification was 0.951. The efficiency with which farmers used their land (sub vector efficiencies) was estimated in the second model. The average sub vector efficiencies calculated with constant returns to scale and variable returns to scale models were lower than the technical efficiencies. The farmers on the efficiency frontier had a relatively higher milk production, milk production per cow, and land surface more than those who were less efficient. A policy promoting better use of the land on inefficient farms should increase the milk production-to-land ratio. Possible on-farm strategies improved feeding systems, farms having their own heifer breeding, and improved genetics.

Saravana Kumar. V., and Jain. D.K. (2009). Viewed that “The two-axes pricing policy is followed normally in the dairy business centres of Tamil Nadu. Though it is scientifically rational, it ignores the input prices, technology and government policies. For sustaining the growth momentum and achieving an annual average growth of 7-8 per cent in the next five years and considering that dairying is practised as a component of mixed farming systems, it becomes imperative to take into account the interrelationship among the enterprises and general economic factors while fixing the milk price. In this study, development of a price determination model has been reported. It is based on the cost of production and takes into account price and non-price factors, viz. technology, and projected different price scenarios of milk for the coming years. The study undertaken in Tamil Nadu State is based on primary data collected for the year 2002-03 and has used normalized restricted quadratic profit function analysis and price determination models. It has been found that to maintain constant returns to the production cost of milk, the milk price would need an upward adjustment of 9.97 per cent, whereas to provide constant net monetary income, the milk price would need an upward adjustment by 10.30 per cent for buffalo milk. Considering 2002-03 as the base year, the estimated price for milk per litre is expected to be Rs.23.64 at constant monetary income and Rs.23.15 at constant return to production cost in the year 2009-10. The results of the paper are illustrative of the utility approach in generating consistent price sets for milk in response to alternative policy interventions.
Daniel R. Block (2009). Explored that the agricultural policy in the United States is often structured around conflicts and relationships within particular Production regions. These regional solutions may evolve into national policies. This paper explores a historical example of this, the development of fluid milk policy and the fluid milk economy in the Chicago milk shed between 1900 and the New Deal. This example is particularly interesting because it was the part of the rise of the post-World War II modern food system. Both urban and rural groups were important in this development. Urban groups took a particular interest in milk production and regulation due to its importance as a nutritious but highly perishable staple. Rural groups responded to urban attempts to control production practices by organizing cooperatives. Negotiations and strikes resulted in an agreement in 1929 that was positive for farmers, the Chicago Department of Health, and other major entities in the milk shed. It attempted to place regulatory barriers around the milk shed. However, it soon failed due to improvements in transportation technology and new distribution systems that allowed for cheaper retail prices.

The group then proposed a marketing plan to the USDA, which became the ancestor of the federal milk marketing order program. This story sheds light on the manner in which local interest groups and internal politics within the U.S. Department of Agriculture combined to shape New Deal agricultural legislation.

Peter Enderwick (2009). Analyses the problem of “quality failure” in China using as an illustration the recent case of melamine contaminated dairy products. This conceptual paper examines whether it is possible to anticipate the incidence of quality fade and, if so, what can be done to minimise the likelihood of such problems occurring. Drawing on theoretical frameworks of alternative transactions governance modes, the discussion highlights the interaction between environmental operating conditions and effective governance modes. The discussion suggests that it is possible to anticipate quality and safety problems and identifies the key environmental conditions in China that contribute to the problem of quality deterioration. Analysis of three primary transaction governance modes - contracts, hierarchy and trust - and local operating conditions reveal a dairy industry which, in contrast to many of the developed economies, is highly fragmented, politicised, ineffectively regulated and characterised by corrupt and opportunistic behaviour.
The dairy industry case provides a concrete application of recent conceptual analysis of quality and safety concerns in emerging markets. This case allows the derivation of recommendations on appropriate management practices for maintaining quality in the challenging business environment of China.

**Shisode, M.G., Dhimal, M.V. and Siddiqui, M.F. (2009).** On their opinion that the constraints expressed by the dairy cattle owners of Rajarambapu Patil Sahakari Dudh Sangh Ltd. Islampur as regards the reproduction, nutrition, management, health, economic and milk distribution were studied. Some remedial measures like trainings, exhibitions, brain storming sessions, poster presentations, radio talks and programmes on Doordarshan can be taken up to create awareness in dairy farmers and to impart knowledge to them to undertake new animal management practices to increase the milk yield.

**Dhanabalan, M. (2009).** Opined that dairy has an important role in improving the overall economic condition of rural India. To maintain the ecological balance, there is need for sustainable and balanced development of agriculture and allied sectors. From our first plan onwards, planners have given priority to allied sector for the economic development of the rural sector. Dairy farming is described as a small industry which provides gainful employment opportunities. It comprises of about six per cent of the national income.

**Khan, N. et al. (2010).** Present that livestock rearing is an integral part of the Indian agriculture. Since the early civilizations farmers in different agro climatic regions domesticated various animals for many purposes. It not only helps in agriculture and production of manure but also for production of milk and meat.

**Khan, N., et al. (2010).** An important section of Indian agriculture is livestock husbandry. Its share of contribution to agricultural gross products has increased since the implementation of the globalization of agricultural trade. Livestock revolution has happened not only in India, but in all tropical developing countries, owing to recently increasing demand for animal-derived products in national and international markets. Buffalo and goats showed a positive change due to improvement in the demand of milk and meat on account of increasing urban consumers, liberalization of agri-business and the changing of food habits over the
decades. Cattle numbers have contracted owing to the mechanization of agriculture and the prevention of cow slaughter in the country. Poor farmers are Two thirds of livestock keepers, workers and beneficiaries with less than 3 hectares of land holding. The majority of them follow the livestock-cropping united farming system, which is highly beneficial rather than raising livestock exclusively. Livestock husbandry is an economically viable, socially acceptable and environmentally sustainable farming system in the study area of the Aligarh district.

**Khan, N., et al. (2011).** Livestock revolution in tropical monsoon countries: One of the most important demand driven sectors of agriculture in the world is Livestock husbandry. It acts as a global source in the form of food, income, nutrients, employment, insurance, clothing and others purposes. It plays a vital role in socio-economic improvement of the farmers. Demand of livestock products is increasing on account of increasing population, changing food habits of the middle class population and urbanization in developing Asian countries. By analysing the recorded data of FAO (Food and Agriculture Organization) in different years paper enables to state that all species of livestock showed positive growth rate with the exception of sheep and pigs. Now the livestock husbandry showing the structural change i.e. in general it is changing from horizontal expansion to vertical expansion in most of the study area. The livestock developed extremely and accomplished a great success in raising livestock derived products. Various issues and challenges of livestock husbandry are now deserved for academic and scientific discussion as a result of livestock revolution in world in general and tropical monsoon countries in particular.

**Khan, N., et al. (2012).** Dynamics and variation of livelihood in urban fringe of Aligarh City, U.P., India Urban fringe is a region of urban-rural interface, constantly moving external in response to urban expansion over the times. It is the area of socio economic transition, experiencing dynamism in the pattern of livelihoods of the people. Land source used under various cropping systems providing livelihoods to the rural people is lessening due to aggregate demand of land for non-agricultural uses. The decreasing agricultural activity in the urban fringe has resulted in variation and structural change in livelihoods. The exposure to urban lifestyle and mass media is causing mental transformation of youth in the urban fringe. They are
more inclined towards value added farming systems and non-farm activities of secondary sectors. Dynamics in socio-economic milieus of urban fringe presented the challenges for livelihood security, employment opportunities and the sustainability of existing farming system and environment in the area. A large number of villages have been comprised in municipality area but rural economic activities like cropping and animal husbandry still exist in the form of urban vegetable and dairy farming run by the local people and the immigrants from other parts of the region. The urban fringe observed dynamism and variation in sources of livelihood. Animal husbandry, agro-processing, retailing and allied services are the other important sources of livelihood. This structural changes in livelihood has resulted in social, economic and environmental instability.

Khan, N., et al. (2013). Livestock raising the production of milk and meat but also helps the agriculture and production of manure. The importance of livestock in India goes beyond the function of food production after the first and second Green revolution. Thus, by minimizing use of non-renewable energy, livestock make a positive contribution to the environment. Even though produces and livestock are interdependent to a large amount, the former institute an important mechanism for coping with the hazards of crop failure. In land-scarce economies, livestock make available livelihood support in terms of income and employment generation to the millions of landless and small landholder. The role of livestock in providing food, livelihood and ensuring supportable cropping system is evident. Livestock raising is mostly practiced by the unprivileged and the poor social groups and it gives employment to the raising.

Khan, N., and Salaman S. (2014). The urban sprawl has generated demand for nutritious food especially milk, and meat and milk production both at domestic and commercial level leading to intensification and commercial rearing of livestock in the peri-urban areas. This has played a pivotal role in development of livelihood in peri-urban areas. Livestock intensification effects farming system, floricultural, horticultural, vegetable cultivation, livelihood security, rural to urban migration and other associated activities. There is an urgent need for sustainable development of livestock husbandry, farming system, floriculture and vegetable cultivation in the
peri-urban areas to ensure socio economic development of farmers engaged in livestock husbandry.

**Khan, N. & Parashari, A.K. (2014).** The dairy part in India is categorized by a smallholder production system of village based production units often containing of one to three milking animals. Government organisations and policymakers of India have highlighted the key role of dairy enterprise in terms of refining the socio-economic position of the rural poor by decreasing the long-lasting problems of unemployment and underemployment. The increasing demand for milk and milk products has led to the growth in milk production but low productivity per animal and unsystematic channel of milk marketing is prevailing in the study area. The employment generation is determined by with the landholding, caste, access to market, income from dairy enterprise and other socio-economic characteristics. Low pricing system, fodder crisis, absence of ready market, lack of veterinary services, exploitation by milkmen are the main problems that dairy farmers confronted by them.

**Khan, N. & Parashari, A.K. (2014).** The most important activity of rural people in India is dairy farming It has an important role in the sustenance of landless and poor people in the village economy, The Government of India has started dairy co-operative societies to enable proper payment of milk and milk products to people, Dairy co-operative societies are joint ventures of the government and the local people for the daily collection of milk from dairy farmers These co-operatives are not only a significant channel for milk collection from grassroots level but also supply the collected milk to other parts of the state ensuring regular supply to the urban consumers. The study was conducted in Moradabad district, a village was selected for detailed study based upon primary field survey, and the study shows than approximately 60 percent of the total production of milk is being transacted through the dairy cooperatives in the sampled village. This regular remunerations necessary medical support and high demand of milk has resulted in socio-economic development of the people engaged in dairy farming thus the study reveals the vital role of dairy co-operative in marketing of milk and providing the necessary support for the dairy farmers leading to their socio-economic development.
Tabrez Z. & Khan, N. (2015). One of the main agriculture sub-sectors of Indian economy is Livestock husbandry, it mainly contributes to the agricultural GDP in India livestock farming, however, has been appearing as one of the significant value added farming system adopted in the country, livestock products play the most important role in export earnings too, after cultivation of crops, livestock is the second largest productive asset in rural India. India’s livestock sector is one of the largest in the world, in 2010-11, livestock produced outputs worth Rs. 2075 billion (at 2004-05 prices) which encompassed 4 percent of the GDP and 26 percent of the agricultural GDP, livestock husbandry is well developed in Western Trans-Ghaghara (Devi Patan) plain, Uttar Pradesh, the plain of Devi Patan contains the districts of Bahraich, Gonda, Balrampur, And Shrawasti districts in Devi Patan plain, more than 70 per cent of rural household are directly or indirectly involved with livestock husbandry. The result gained with the application of statistical technique shows that in all the 44 blocks of Devi Patan plain, there is a massive spatial variation of animals like buffalo, cattle, sheep and goat in all the blocks.

Khan, N. & Rehman, M.A.H. (2016). One of the main sectors of agriculture economy is dairy. It plays the most important role in household nutritional security, increased salary and employment generation. In this sector of agriculture, a large part of personnel has been employed as part time as well as fulltime. They are involved in various natures of activities like rearing, marketing, distribution and collection/processing of dairy and their product. According to the study, there are importance of the dairy farming in rural economic development and sustainability of poor farmers.
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