Review of Literature:

India is the largest milk producer country accounting more than 13% of world’s total milked production (Karmarkar and Banerjee 2006). Karmarkar and Banerjee (2006) have considered the dairy as one of the activities aimed at alleviating the poverty and unemployment especially in the rural areas in the rain-fed and drought-prone regions. Utter Pradesh, Rajasthan, Gujarat, Maharashtra, Karnataka are the leading milk producing states in the country (Shinde 2011).

Patil et al. (2010) have concluded that the land and animals are traditionally basic income sources and assets of Indian farmers. It is major source of protein to majority of population probably, poor families of small landholders, landless labourers mainly from depressed classes (castes and tribes).

Deshmukh (2012) observed that the livestock generates massive employment opportunities to rural population, particularly rural self employment at lowest possible investment compared to others. The women have contributing to care of new born, feeding, milking and other management practices. Women from tribal and hilly areas have also participated in this activity.

Kalash and Rathore (2009) observed that animal husbandry is supported to agriculture. The farmers are kept cattle and buffaloes for milk production, power for various farm operations, village transport, irrigation and production of manure. The additional income generated through animal rearing by women would improve their livelihood.

Iqubal (2010) concluded that the growing population, increasing urbanization and the changing food habits of people is enhancing the demand of livestock products.
worldwide. Therefore, livestock sector is growing at higher rate in developing countries. He reported that about 83% of the workforce of households surveyed in the rural areas of northern India is involved directly or indirectly in livestock husbandry. The participation of women in livestock husbandry is enhancing rapidly but more than 90% were unpaid.

Sonawane (2011) stated that milk is most complete food to human being with variety of nutrients and plays a very important role in rural economy. He referred the report of the National Commission on Agriculture i.e. dairy farming as an additional source for improving the status of rural masses, especially weaker sections, consisting of small, medium and landless labourers.

Alam et al. (1995) stated that the average lactation period for cross-breed cows was higher (304 days) than the local cows (210 days) in Bangladesh as well as the milk production of cross-breed cow was higher (5.66 litres) than the local cows (2.23 litres). The cross-breed dairy farms are more profitable than the local breeds and creating employment opportunities for owners and hired labours.

Patil and Udo (1997) evaluated feeding practices at farm and examines the cross-breeds fit into the existing mixed farming system. Cross-breeds produced on average 1.8 times more milk than local Desi, Gir and Kankrej cows. Cross-breed required fed 1.4 times more concentrates and about 1.2 times more green and dry feeds than local cows. Tribal farms, local cows produced less milk than non-tribal farms, whereas cross-breeds produced the same amount of milk on both tribal and non-tribal farms.

Seife et al. (2012) concluded that livestock can be an important activity to get out the rural population from poverty in developing countries. However, many farmers of theses areas are facing fodder shortfalls (50-60%) during the dry season (December to
February). These shortages are reducing productivity and provoking conflict over grazing. They have found complex causes of scarcity including limited and erratic rainfall, shrinking grazing lands due to competition for cropping lands and changing land use pattern favouring urbanization and settlement. Therefore, the market manipulation by some cattle traders, some farmers were selling animals for less than the market prices.

Belay et al. (2011) have recorded the constraints limiting dairy production i.e. lack of land, shortage of feed, lack of improved breeds and lack of management (meditational services, credit services and marketing). Here, veterinary health care is become responsibility of male household head whereas, milking and milk processing was done by female household members. Men decides selling of animals and milk, while women decide how much of the milk will be kept for household consumption.

Manoharan et al. (2003) have concluded that the farmers having cross-breed cows ranked higher feed cost compared to local cows. The cross-breed cow get lower price for milk and local breed lower productivity. Infertility problem is also one of the main problems in dairy farming. The farmers are recorded higher capital requirement as a constraint regarding cross-breed cows compared to local cows.

Singh et al. (2004) recorded the problems of dairy farming i.e. shortage of feeds and fodders during dry season, traditional method of non-descript type of animal, lack of breeding bull, poor extension services and monopoly gender role in livestock activity. They have suggested the suitable strategies for feed production through planting of fodder tree and grasses in community land area and supplementation of mineral mixture, common salt, surplus crop residues available. Education to farmers of modern livestock
practices, equity of gender role, supply the breeding bull in village and appointed skilled veterinary staff at village level are suggested strategies of improved dairy practices.

Radder et al. (2010) have recorded the multiple objectives and dimensions that livestock keeping in India. Crop residues like straw, husk and grass from grazing are the main source of nutrition to majority of the animals in our country and profitability is sole determining factor of cattle farming.

Singh et al. (2012) resulted that climate change has negative impact on productive and reproductive performance of livestock, increased incidence of livestock diseases and parasitic infestation decreasing trend of feed and fodder resources. Most of the farmers preserved fodder crop in farm of hay for adverse climatic condition, followed mixed livestock farming, diversifying farming practices and changed planting date, provided bedding and warmth to their animals to protect them from extreme cold, similarly during hot days farmers provided cold water and shed to protect their animals as adaptation strategies for sustain livestock production.

Kumar et al. (2012) have observed the major constraints faced by the farmers i.e. high cost of feed, lack of guaranteed price of milk, low yield, lack of milk processing technologies and lack of cooperative network in Jammu and Kashmir (India). The study revealed that only 30% of the respondents had knowledge of balanced feed, 28.33% know about how to make silage, 11.66% had knowledge of disposal of animal waste and just 20% had knowledge about vaccination of livestock.

Nicoline et al. (2006) have described an approach and the experiences for better understanding of the role of partnerships and how bridging the divides through capacity building. Jeyabalan (2010) has invented a new computerized recording and analysis
system (ICRAS) for simplicity and efficient decision making. It was designed based on four core elements i.e. current farm statistics, herd fertility management, herd health management and individual cow records.

Ogbimi and Oyewale (2000) have pointed that the dairy farming and industrialization in growing hand in hand in Europe, America and Asia. They have improved nutritional and health condition of animals i.e. well fed animals increasingly expressed their genetic potentials. This produced high quality animals and high milk output. The buffaloes are most probably, locally selected breeds contributing one-third of the milk animals in India but produce half of India’s milk output. They have pointed that the tropical climate does not pose a special problem for milk production.

Tamirat and Bogale (2012) have studied the cattle production system in pastoral areas of Hadiya zone, Ethiopia. He was explained the purpose of production, breed and breeding methods, feed and watering system and marketing. The results showed that the Hadiya pastoralists are keeping large number of cattle, like other pastoralists not as a security against risks but it is their cultural obligation to do so and attain the cultural titles. Therefore, economic factors have little effect in cattle marketing.

Buttars et al. (2006) have studied the US food and agriculture system vulnerable to bioterrorist attack. The findings indicated that most of the dairy farmers have not made any recent security improvements and most do not believe. However, the government believes that security education is important for farmers with different approaches of on-farm security.

Dhaware et al. (2008) concluded that Khillar is draft purpose breed of Maharashtra and males are famous for fast transport and speedy farm operations. The
season does not significantly affect on age of first calving, age of second calving of cow. However, breeding efficiency has significant effect on these traits. The production variability among various periods might be due to differential feeding and management practices, selection pressure and culling on individuals in the particular period.

Manhas and Sharma (2008) recognized the livestock farming is the most suitable production system has enormous potential to improve the socio-economic status of the large percentage of rural population. Therefore, the government should support for cattle and buffalo development through subsidy for purchasing the improved breeds, fodder, improved cutting machines, concentrates mineral mixture, chaff cutting machines, construction of cattle shed and necessary dairy utensils. They have suggested that the government should keep a mobile eternal van in the rural areas regularly for providing spot treatment to the animals and routine guidance.

Chauhan et al. (2006) have pointed that the size of land holding has highly significant positive relationship with adoption of dairy farming practices, which included improved feeding practices, adoptions of improved breeds, improved managements, improved housing and veterinary aids. They have shown the large size of land holding and increasing farmers’ inclination towards adoption of improved dairy practices. They record the causes of low per animal milk production in India i.e. poor feeding and management practices.

Cabrera et al. (2010) concluded that the US dairy sector is facing structural changes including a geographical shift in dairy production and a tendency towards the implementation of more intensive production systems. It is significantly affecting farm efficiency, profitability and the long-term economic sustainability of the dairy sector. The
lactating cows increased milk production. They have found that there was not a proportional relationship between the size of the farms and the level of output produced. Whereas, the level of productivity depending on improvements in technology and efficiency.

Khode et al. (2009) have stated that the attributes namely education and socio-economic status are highly significant in Vidharbh (India). Whereas, land size, total annual income, dairy herd size, daily milk production, daily milk sale, milk production from purchased dairy cattle social participation, utilization of communication sources, knowledge level, attitude towards dairy farming, economic motivation and training on dairy farming were significantly correlated with adoption of improved dairy cattle management practices. Independent variables like age, family size, family member participation in dairy farming, number of purchased dairy cattle and experience in dairy farming were non-significantly related with adoption level of improved dairy cattle management practices.

Sato et al. (2005) have compared production and management of organic and conventional dairy farms. The organic herds had significantly fewer cattle than the conventional. The average daily per cow milk production in organic dairy herds was lower than conventional herds. The incidence of clinical mastitis on organic farms was not statistically different from the conventional farms. T-test results indicating significantly higher parasite burden on organic farms. There was no significant difference between organic and traditional dairy farms for milk production when season, grazing intensity was common.
Karthikeyan et al. (2006) have pointed that indigenous knowledge is the accumulated knowledge, skills and technology of the local people. The paper describes five indigenous technologies involving cow-based products used by farmers for various purposes and an analysis on its impact. These technologies include 1) Green leaf extract with cow’s urine for pest control, 2) Cotton seeds treatment with cow dung for removing the fuzzy hairs and also to make dibbling of cotton seeds easy, 3) Chilli seeds treatment with cow dung slurry for germination in the Chilli nursery 5 days earlier than normal sowing, 4) Whitefly control with buttermilk in Ladyfinger crops and 5) Ragi seeds hardening using cow’s urine for avoid water stress during the crop growth.

Pandey and Singh (2012) stated that the soil organic carbon in cultivated soils is less 5 mg g\(^{-1}\) compared to 15-20 mg g\(^{-1}\) in uncultivated soils in pasture lands. This available potential of 10-15 mg g\(^{-1}\) soil carbon could balance net emission from fossil fuel combustion. Therefore, organic farming with animal husbandry contributes to climate change management.

Ramesha (2011) pointed that livestock genetic resources with high diversity are essential for food security, to utilize environment unsuitability for agriculture and to respond to changes in production systems, impending climatic changes, emergence of new diseases and market demands.