Review of Literature
Chapter-2

REVIEW OF LITERATURE

It would be appropriate here to review the literature on economics of dairying. In the following paragraphs a brief review of some works in dairying is being carried out. This chapter reviews the available literature relating to the present study. The purpose of this chapter is to give a proper orientation and perspective to the present work.

Swaminathan, M. (1974), in his work “Essentials of Food and Nutrition” speaks about a large ambition. In his opinion man has exhibited much foresight in cultivating a variety of grains, fruits, vegetable, nuts and oilseeds, rearing birds and animals for use as food. Use of milk of different mammals as food for infants has been practiced from very early times. Representation has to include dairy farming, rearing as well as food milk and other purpose also. He says that the argument for a more equitable representation of dairying activities and different groups does move in close parallel with argument for a more participatory idea on economics of dairying.

Kamalavatta (2002), in the concept of Dairy Enterprise, views that a large production of area under cereals shifted towards fodder crop due to increased number of millet animals. In his opinion one must pursue the increased milk production due to increased fodder crops for the millet animals.

Madan Mohan, C. (1989) in his book “Dairy Management in India” advocated that the micro level studies of the dairy units set up in the districts help us not only to assess their working but also to explore the possibilities of rectifying the shortcomings of the organization. Despite its vast cattle population, India’s place is at the rock-bottom. If we follow the strict measures in dairy farming we can definitely achieve maximum income.
Ranjith Sing, N.P., Kumar and Sing, R.P. (2005) stressed that the contribution of bovine in different forms to the economy of the Indo-Gangatic plain has been quite significant, keeping in view the declining size of land holdings across the Indo-Gangetic plain region. The livestock sector holds greater promise in providing drought animal power of the small holders. The manorial nutrient availability will help in sustaining agriculture from the farming systems perspective by maintaining soil health. It is quite clear that cow dung fertilizer is the best for growth of the soil nutrient availability. Cow dung fertilizer is 100 per cent better than chemical fertilizer. Dung’s of Cows, Buffaloes, Sheep, Goat and Pigs are most useful to the land and it will increase by maintaining soil health and definitely increase the productivity of seeds. This thesis emphasis the facts that dung of cows and buffaloes give good fertilizer.

Sukla and Bramankar (1989), in his book “Impact of evaluation of Operation Flood on the rural dairy sector”, cited that raising share of Dairying in agricultural income is expected to benefit millions of small holders. The study conducted by the National Council of applied economic research to evaluate the impact of dairy co-operatives viewed that dairying is the main stay of small holder’s economy. Sukla and Bramankar argue that dairying occupation gives good income and livelihood to the small and medium farm holders. But in India a majority of individuals take income from the dairying sector in one way or the other.

Amrita Patel (2004) showed that the Indian dairy sector cannot hope to gain access to many major developed countries or other developing countries due to the high level of tariff and non-tariff barriers. In a liberalized regime, competitiveness is the cornerstone. Therefore, she stresses Indian dairy products should improve the infrastructure facilities to the dairying sectors. Then we face fair competition against the foreign dairy products. Infrastructure, particularly water, power,
distribution, telecommunication, irrigation and storage will increase both human population as well animal population. Infrastructure definitely increases growth of bovine population.

Fahimuddin, M. (1975) studied the economic uses of the domestic buffalo in respect of its milk and milk production, working capacity, the buffalo milk, its composition and physico-chemical properties and nutritive values. Buffalo, bullocks and male calf are plowing, sowing, cultivating, inter-cultivating, and sloshing the marshy paddy fields and transportation. These animals are used for all purposes and their economic use is increasing day by day.

Trimberger W. George (1984) stressed that a dairy animal is desirable and it is useful. It can achieve a high standard of production and maintain that standard throughout a long life. The most competent judges will assess each animal with a particular eye towards its productive qualities. The most successful and widely used method of judging dairy cattle is to compare each animal with a preferred standard and ideal in all parts of conformation, emphasizing each part according to its importance in the animal productivity. In India buffaloes are treated as Mahisasura. In Karnataka people treat cows as sacred animals. Therefore in Deepavali festival people worshiped cattle as Gopuja. In India cows are worshiped at the time of newly constructed house opening function.

Reaves M. Paul and Henderson, H.O. (1963), based on the study of the Indian Dairy Cattle feeding and management endeavors to keep pace with the many rapid changes in this great dairy industry. The Indian dairy industry has made the work with dairy cattle and milk production as a science as well as an art. Research has brought about changes especially in dairy cattle feeds and methods of feeding, levels of feeding, types of building for using cattle and producing milk, milking equipment and milk handling facilities as well as in the application of genetics and artificial breeding. It has made changes in dairy herd structure,
challenges in milk marketing global competitiveness in Indian dairy industry. Research has brought about innumerable changes in dairy products variety of dairy cattle’s and bovines, different types milking equipments and application of genetics and artificial breeding have come into operation.

Rao, V.M. (1991) based on his study, has said that the structure of livestock Production in India is significantly different from that in the rest of the world, owing to rapid increase in the demographic pressure on lands and the consequent pressure on the extent of pasture and other grazing lands. Therefore the relationship between human and livestock population in India has become a symbiosis rather than competition. Thus animal husbandry is probably considered as part of the agricultural system, using agricultural waste land to feed animals and animal wastes in turn as a source of both fuel and fertilizer. Apart from land and irrigation livestock has been the largest productive resource in the rural economy of India. Livestock gives maximum happiness to the families. It is a golden yard for man. It gives food, fertilizers, crops, bread and butter and courage to the man and improves generation.

Katar Singh and Virendra P. Sing (1998) found out the India’s major dairy development policies relating to cross breeding, modern milk processing and cattle feed compounding plants, marketing of milk and milk products, producer and consumer prices of milk, diary development organizations and institutions, public investment grant and subsidies, education, training and research. This gives employment opportunities for greater number of unemployed in India.

Shashidara, M.G. (2002) has said in his writing that South Canara Buffaloes are used for agricultural operations and transport, apart from buffalo racing immediately after harvest of crops. Dakshina Kannada farmers have given lot of importance to the draft-ability of these animals. In Dakshina Kannada She-buffaloes are poor milk yielders but males are powerful work animals, which are
used for pudding the slushy paddy fields, Jaggery manufacturing and other agricultural operations. Unused male buffaloes are used in buffalo racing in harvested paddy field which is commonly known as “Kambla” in local language. Buffalo racing is one of the great amusements and also a tradition of these people. Whereas, in Shivamogga nearby Hornahalli range in Shikaripura, Shiralkoppa, Tadagani, Huluginkoppa, Bilaki, Talagunda, Tadasanahalli, Bisalahalli, ox racing is also commonly arranged every year.

Report by Dairy Development in Kolar and Shivamogga districts of Karnataka an expert evaluation study, (2003) finds out the dairying in India is closely interwoven with agriculture and plays an important role in the rural economy. Besides having a vast employment potential, dairying provides not only milk but also stabilizes farm incomes. In Karnataka dairy development activities play a vital role in development of rural economy. They provide not only employment opportunities to small farmers but also lead to a simultaneous availability of milk. Karnataka stands in the sixth place in milk production. It occupies third position with respect to milk production under co-operative sector in the country. The milk product was around 45 lakh tonnes during the year 2000-01. The KMF covering 27 districts around 7000 dairy co-operatives around 17000 villages involving 1.5 million farmers collects around 20 lakhs liters of Milk from Dairy. The Government of Karnataka has set up fodder development banks to increase the green fodder availability to the dairy animals in the rural areas. Around 19 lakh rootships and 12 quintals of fodder seed were distributed during the year 99-2000 through this programme.

Clark (1966) reported significant relationship between the quality of management and the lactation performances of the cattle. Clark (1969), after examining nearly 23,400 cow records concluded that a strong association existed between the milk production, calving interval, length of lactation and dry period with the management practices adopted.
Mangala Kango (2006) expressed that cattle and buffaloes are the major primary producer of milk in most countries. The Dairy industry is based on the ability of mammals to produce milk which has a high nutritional value for human being. The demand estimate of milk for Karnataka in 2005 was 44.49 lakh tonnes. This is estimated in 2015 to be 90.75 lakh tonnes. The supply of milk estimates for Karnataka in 2005 is 46.89 lakh tonnes. Definitely the supply of milk will not be equal the demand for milk. This will create big shortage of milk. This thesis covered the techniques of supply of milk to balance the demand for milk yields.

Haq. M.U. (1996) advocated that “A society does not have to be rich to afford democracy”, a family does not have to be wealthy to respect the rights of each member. A nation does not have to be affluent to treat men and women equally. Valuable social and cultural traditions can be and are maintained at all levels of income. I hope the basic components of human development are equity, sustainability, productivity and empowerment. Equity implies equitable access to opportunities. Sustainability implies sharing development opportunities between present and future generations. Productivity implies development human capabilities through investment in man and utilization of animal power for the development. Animal power also increases the growth of the nation. They are the gift divine. We should preserve and protect the bovine population. It definitely increases the income of the nation. In this context cows and buffaloes population is the source of the nation.

Haq, M.U. (1996) again said that most critical choices are to lead a healthy life. This definitely increases educated people and to have access to resources needed for a decent standard of living. I hope that real standard of living is to increase our natural wealth. In Natural wealth, forest resources, oil resources, mineral resources, fisheries, animal resources that would definitely comprise in the national wealth. In the animal resources cows and buffaloes population would
certainly increase the human standard of living and increase the growth of the nation.

Nadakarni M.V. (2008) said that on ‘Infrastructure development current scenario and future challenges’., defined as road, rail, air and water transport, power generation, transmission and distribution, telecommunication, water supply, irrigation and store would need to increase from 4.6 per cent of GDP in between 7 and 8 per cent of G.D.P in the 11th plan period. But according to researcher should say urgent attention is required to protection of the bovine population. This definitely increases the milk quantity and leads to increase health, employment opportunities in the society. The road, rail, air, waterways and communication improves, this definitely develops the milk output and as well as rise the quality of bovine population.

Syed Ajmal Pasha (2004) studied the livestock interact with environment and ecology during the process of livestock keeping, production and processing of their by products to the Indian economy. Livestock production systems emit Green house gasses into the atmosphere. The most important source of a method of emissions in India is enteric fermentation from domestic livestock which is showing a steady increase over the period of time. In total the Indian livestock sector is passing through many challenges. It is contributing to GDP creating income and employment opportunities and also bringing foreign exchange, earlier theorists did not cover the net foreign earnings of Indian dairy industry. This thesis gives more emphasis on net foreign earnings by Indian dairy industry.

Guptha, S.C., Neelam Guptha and Nivaskar, A.V. (1999) stressed in their thesis the systematic comparison of Mithuns with gaur and its other wild relatives has helped in understanding its origin and domestication. Ideas on description of ecological components and their interaction with Mithun population is very useful information. The information on different husbandry practices in order to obtain
higher level of milk, meat and draught animal species. For collecting this voluminous information, the authors have carried out extensive survey of Mithun breeding areas, where travelling is very difficult due to distant locations and with meager communication facilities. Further Mithuns are thriving mostly on browsing of free leaves green twigs and long grasses growing naturally in the rain forests. They give good atmosphere and rises the beauty of the forest and surrounding places.

Crotty, R. (1980) expressed in his book and compared Ireland through member of less developed countries like India. India with 240 million cattle and buffaloes has 18 per cent of the world’s total stocks. It has as many cattle and buffaloes as Europe and the U.S.S.R. combined. Indian incomes are extremely low only one tenth of the world’s average. They are two fifths of African incomes and one seventh of average incomes in South America. One quarter of the average level of income in Asia exclusive of India. India’s cropland and cereal production is less than proportionate to population. However, the shortfall in relation to grass land and to cattle products is much greater. Though, with 11 per cent of the world’s cropland India has less than 0.5 per cent of the world’s grass land. India has only 0.4 per cent of the world’s beef and 5.9 per cent of the world’s milk production. This means, that Indian cattle however are among the world’s least productive in terms of meat and milk. Produce virtually no meat and their milk output per head is 1/3rd of the world’s average milk production per hectare of grass land in India is extraordinarily high at 1.85 tonnes compared to 0.13 tonnes per hectare of grassland for the world as a whole. But production of milk per person in India is only 2/5th of the world average. Many Indian states prohibit the slaughter of cattle and buffalo, but the Hindu majority of the populations oppose the eating of beef on religious and aesthetic grounds. But one interesting point is the growth of Indian milk production is highest of world milk production and of Indian population growth Indian production of meat is growing at only half the world rate
and less rapidly than the Indian population. Cattle in India therefore have traditionally been a non liquid asset to be held instead of money the liquid asset.

Sudhaker Rao (1998) said that indigenous breeds of cattle are the real friends of farmers. They are disease resistant and drought-resistant. That means the indigenous breeds of cattle really give large quantity of service in fields. They give fertilizer, gobar gas and some medicines to the farmers but their decline is considered to be a dangerous trend. This means that decline of cattle and buffalo is considered to be a dangerous stage to the society.

Dandekar, V.M. (1969) observed that a small number of better fed cows will contribute more milk and dung and milk will give enough calves to replace the needed stock of draught animals. It shows in the context of improving the nutritional standards of the people, the need for enhancing the production of various animal products, particularly milk, eggs and meat at a faster rate needs no emphasis.

Zeuner and Carrington (1963) said that numerous representations of contemporary wild as well as domestic animals on seal. Historical records indicate that the water buffalo according to Hindu mythology is the incarnation of the devil Mahishasura or the buffalo-begotten demon was slain in combat by the goddess Durga. Every year during Durga Puja, quite a large number of male buffaloes are sacrificed at alter of the goddess Durga as a religious ceremony in India and Nepal. In the Hindu mythology the cow is regarded as the vehicle of Shiva and thus receives all the veneration and respect from the Hindus and cattle are intimately associated with their domestic incidents. The dedication of the cow and bulls in the memory of the dead ancestors is an established socio-religious practice among the Hindus. The buffalo has never been accepted for this purpose in Hindu society during any period of Indian history.
The celebrated Sanskrit poet, Kalidasa (400 A.D) gives a vivid description of a buffalo suffering from the heat stress in his work “Ritusamhara”. With further organization and advancement of the Indian Society primarily based on cereal production, the use of water buffalo as a beast of tractive purposes in paddy cultivation and haulage of goods and for milk and milk products became fairly established. And the water buffalo emerged out as a very important portion of the livestock of the Indian sub-continent much earlier. The Moghuls were familiar with buffaloes in wild as well as demarcated. For this view, W. Forster (1921) describes the existence of a large number of buffaloes in and around Agra and Fathepur. This explains that the Indians received maximum help from the cows and buffaloes.

Phillips et al. (1945) recognizes two types of hoofs in buffaloes. One is a scissors type with longer toes inconvenient for working and other one is bowl type which squarely sets on the ground. The bowl type hoofs wear out evenly and are considered good for work by farmers. The hoofs with black horns have been found to be stronger and good in wearing qualities. The yellow or waxy hoofs are weak and are not preferred by farmers. The hoofs of the buffaloes are not a tough and strong as oxen. They wear out badly on macadamized roads resulting in lameness which is one of the major causes of wastage in working buffaloes.

Reddy Srinivasa R.S. and Anantha Reddy (2008) said that dairying as urine and cow dung of cow is the prerequisites for such type of farming. They taken up dairy as urine and cow dung are the prerequisites for Pomegranate, Orange, Chikkoo and other Citrus fruits production. But, the continue droughts and uncontrollable pests turned the region into a desert land. R.S. Srinivasa Reddy and his brother Anantha Reddy took it as a challenge now they are models for other farmers by the dairy farming. They followed mixed farming so that farmer will be getting income through out the year in Molakalmuru, Rampura and Chitradurga districts.
Kost, A.G. (1925) published his paper “Different types of milk, their
relation to the rennet, and importance in cheese making”. According to his
observation “the type of milk is not prevalent in Switzerland where the immortal
type cheese is manufactured”. His opinion is that a cow here and there may show
the trouble and he said this kind of milk contains no catalane and no leukocytes.
The degree of acidity is normal and the total lime content and soluble lime do not
give any reason for assuming that the cause of this abnormality could be found in
faulty feeding in feed stuff. His Research work shows that there is a relationship
between the technological behavioral of milk and its composition.

Keen (1932) as back as 1930s observed that the development of Indian
agriculture urgently required the dovetailing of the arable and animal husbandry
into one mixed farming. He says that the mixed farming is good to the farmers that
to Indian farmer must cultivate Dairy farming, Dovetailing, Poultry farming, Sheep
farming is to create development of individuals and their income increases.

Ibne Ali (1970) observed that a pair of bullock’s cows gave 25 cart load of
manure, which was considered sufficient to provide humus and a large part of the
fertilizing elements for a unit of four acres (1.67 hectare) of wheat or paddy.
Manure obtained from these animals may help in increasing yield of crops in four
acres to almost equivalent of six-seven acres (2.45 to 2.86 hectares) of un-manured
land. This means that dairy farming definitely gives sufficient manures to
agriculture. In the same extent the Dairy farming gives sufficient milk, income to
the farmers. It gives pleasure to the life of the farmers.

Jhodha (1992) said that the deficit of India’s feed to the dairy animals. India
has a deficit of 31 per cent in dry fodder, 23 per cent in green fodder and 47 per
cent in concentrates. The constraint is likely to be severe on small farms in India.
Also the area under common grazing lands has been declining in quantity as well
as quality. This means that urbanization, construction of factories, firms and
housing is held responsible to deficit of grazing land. This is the major cause to shortage of food and fodder for the dairy animals.

Dandker V.M. and Neelakatha Rath (1969) have worked out that in 1968-69 prices an annual income of Rs.1600 would be necessary for family of 5 to reach what they call a national minimum consumption level of 2033 calories per person per day. They have worked more than 50 per cent of the agricultural labor and more than 38 per cent of the rural population is below this national minimum consumption. They are obviously amongst the group of small and marginal farmers and agricultural laborers. Unless the programme gives these people a return of four to five hundred rupees per year for the family for immediate consumption, it will not make any significant contribution in removing their poverty. In this context, they proposed for a suitable subsidy to lift the dairy farming, so that the family should enjoy the small profits from this venture as early as possible. In their thesis "Poverty in India" V.M. Dandekar and Neelakantha Rath stressed that more than 50 per cent of the agricultural labour and more than 38 per cent of the rural population are below this minimum level of income. With regard to improvement they should raise the sufficient income from dairy farming in India. The development of dairy farming and income from dairy farming gives income for immediate consumption and helps to eradicate the poverty in rural India.

But authors say, in the Malnad area of the South (Kerala, Tamil Nadu and Mysore) there are already a large number of cross breed cattle and buffaloes with farmers. Also a large proportion of labors in the plantations keep cattle. There are plenty of grazing facilities in Malnad range because of high altitude. The climatic condition is favorable for rearing cross breed cattle and buffaloes as well as sheep rearing also. There is a large scope in these areas for implementing a project of heifer calf, young Buffalo production upto wearing stage for supply to milk project areas in the plains. For this purpose of popularizing cross breeding of cattle
and buffalo for milk production in areas covered by the operation flood and with small, marginal, medium and large farmers and agricultural labors. This thesis covers all these concepts.

Fahimuddin (1975) says in his book “Domestic water Buffalo”, whenever cows and buffaloes all kept, they receive the utmost care and affection from the farmer. The cows and buffaloes are regarded as a symbol of agricultural prosperity. Besides, the bells hung sound the neck serve a definite purpose. The bells are the common materials of buffalo. The reading animal of the herd is assigned a special bell to identify the animal from its sound. The bell system is very convenient for the Buffalo herdsmen to locate the animals with the sound of the Bell. The sound of the buffalo bells with different volume and pitch fill up the warm humid atmosphere of the forest cleanings. In case of danger from wild animals like the Tiger or Leopard the members of the herd’s immediately become alert with the characteristic calls of the bell during fear and excitement which is quite different from the normal ding-dong sound of the bell. It is on account of these advantages that bells of different shape and size are hung around the neck of buffaloes in many South East Asian countries. This system can also be seen in some parts of Shivamogga district, particularly Thirthahalli, Sagar, Hosanagar and Sorba. But this system is declining presently because of deforestation and declining number of cows and buffaloes.

Aggarwala, A.C. (1953) “The Art Milking”, a Laboratory Manual of Milk Inspection, expressed that the milking of cows is an art requiring skill and experience. The process should be conducted quickly, gently, cleanly and completely without any pain or annoyance to the animal. A gentle and expert milkier will not only draw comparatively greater account of milk from the adder than a land and inexperienced person, but will do so with more comfort to the animal. A bad milkier would do more harm by his clumsy and incorrect methods than an expert milkier by neglecting scientific feeding. In England the cow is
milked from the right side but in India the left side is usually taken for milking and it has been termed the milking side. This is preferred for two reasons firstly, because it has customary to approach all the large domesticated animals by their left side. It is being most convenient to the farmers. Secondly, because most men are right-handed, the right handed being stronger, can be most conveniently used to draw milk out of the hind beats, which are difficult to reach due to their position between the hind legs.

Aggarwala, A.C. (1953) expressed that there is also milking the trees in Brazil. In the Jungle grows a tall beautiful tree and the thirsty traveler can obtain a refreshing palatable drink by tapping the tree after making a deep cut in the back. It is frothy and sweet and resembles cow’s milk both in appearance and taste. If not drunk at once, it thickens and becomes like glue.

Kanvar Boy Jadav Raj Kota, published in Vijaya Karnataka daily newspaper in April 24th 2007, said that “Money is not only possible, but cow is possible. Cow dominant agriculture is permanent and evergreen. If we utilize Chemical Agriculture instead of Natural Agriculture definitely makes it as desert within 100 years. A single cow can develop and change the economic and social life of a farmer to provide future power to the next generation. This means that cow cultivation that gives happy life and source of life to the men and societies. This is just like “Divya Shakti for man’s life”.

Styanny D’souza, a Christ Father, said in Vijaya Karnataka daily News Paper in 23rd April 2007. They narrated as “There is a great importance for cows in Janapada Literature”. He told that many times the word cow stressed in different stages in Bible. Mariamma is the first Mother of Jesus, and Cow is the second Mother of Jesus. The King Jesus received Cow sparsha, Goumaya, Cow food, Cow Wind and Goumutra. It has basically created a new Shakha in Christianism. Cow means Livestock population is very important to all the Communities.
Padmashree Mujaffa Hussain (2009) said in “Patheyakana Pakshik” paper on “Gaay and Kuran” published by Chenna Mallappa Rotnadgi in Vijaya Karnataka, Wednesday 4th November 2009, Shivamogga, he said that the world famous Alsaffia Dairy Farm of Saudi Arabia. In Saudi Arabia many number of cows are domesticated in this dairy farm. Nearly 36,000 cows are domesticated in this farm. It is one of the cow schools. Early in the morning many number of cows are coming to this Dairy farm daily. Dairy holder’s clean cows from computerized sprinklers and the Desert cooler are being kept in this dairy farm. The length of the shed was 800 meters. 1400 people take care and work in this dairy farm. Dairy farm holders could not sell the cows and buffaloes at any cost. After the death the cow’s body is cremated. The people of Arabia never think to sell the cows to the meat purpose. And five thousand of Indian breeds are available in this Saudi Arabian Alsaffia Dairy farm and the people of Arabia are very much interested to cultivate Indian breed’s milk. Saudi Arabians look cows as a sacred animal.

Bansil, P.C. and Malhotra, S.P. (2006) in “Livestock Economy of India’ said that the present trend indicates that animal protein requirement would rise faster than cereals in the consumption pattern mainly due to increase in income and need for quality food. Such a demand driven growth which is taking place mostly in developing countries will call for greater emphasis on harvesting, storing and processing facilities. Government and industry must prepare themselves for long term policies and investments that will satisfy consumer demand for goods of animal origin, improve nutrition, income and opportunities for employment.

The author also expressed that Animal Husbandry sector provides large self-employment to millions of households in rural areas in principal status as well as in subsidiary status, this includes persons, employed in sale, reprocessing and transport of animal products at secondary market level. Apart from this, large manpower is involved in livestock related activities namely, manufacture of animal food products and beverages, manufacture of woolens, tanning and
dressing of leather, farming of animals, production processing meat and meat products, manufacture of dairy products, retail and wholesale trade of livestock products. Animal Husbandry and dairying sector in India contributes about 22 percent of the value of the output from total agriculture and allied sector employment (1993-94) in animal husbandry sector was 9.8 million in principle status and 8.6 million in subsidiary status. Women constitute 71% of the labour force in livestock farming 75% in dairying. Livestock, as they are raised presently at subsistence farming level, is financially unviable but by increasing the unit size and using current technologies it has an opportunity of generating wealth and employment. Livestock enterprises with cross breed cattle and high yielding buffaloes have shown to be a remunerative business.

Aubrey Manning and Marian Stamp Dakins (1998) said that any account of behavioral development must include some considerations of genetic factors because genes constitute one source of information which is present from the very outset of life. Certainly genetics immediately springs to mind when thinking about instinctive behavior and it has become common enough to refer to such patterns being ‘inherited’ most especially when discussing their evolution. It can be concluded that behavior has often evolved along side morphology to achieve abortiveness. While there can be no doubt that genes are involved in the development of behaviors it is not usually a straight forward matter to investigate how they act. This means that any account of behavioral development animal must include some consideration of Genetics and behavior. And variety of animals, especially birds and mammals are shown sensitive events even when they are young.

Kiresur, V.R. (2002) in his master piece ‘Economics of Milk Production in Karnataka’, put forth the view that dairying is a very important subsidiary occupation to raise the family income along with crop production particularly for small and medium farmers and even for the landless agriculture labourers. He
feels that dairying as an occupation helps to raise the family income and crop production. It is a part and parcel occupation to all individuals and all groups of the society.

Mohan Swamy (1995), in his "Argo's Dictionary of Dairy Science", says that in India, predominantly an agricultural country, the dairying is recognized as an instrument for social, and economic development, because milk is the largest crop after rice in Indian agriculture. This representation is lifted only on theoretical aspect but practically it has not come into existence, because milk production is not raised sufficiently in India.

Ramesh Babu, P., expressed his views in his book "Trends, Patterns and effects of diffusions and adoption of cross breeding technology, an assessment in the context of Kerala. He advocates that however, after the initial jump in milk production, its rate of growth has shown a deceleration and its source are forced to the deceleration in the rate of growth in productivity of cross breed milch animals. Therefore to step up milk production one area of effective intervention should be to reverse the deceleration trends in the proportion of cross breeds in the milch animals. To sustain the milk production in all the states, this should be the essential goal to reach by all the states of India.

An article published by the Ministry of Agriculture, Government of India, New Delhi (1971) reveals that there is at present a large gap between requirements and availability of milk and milk products in India. The present pace of dairy development is inadequate for achieving the goal of sufficiency in the foreseeable future. Therefore, milk production in the country should receive urgent attention and an aggressive programme of milk generation should be launched and implemented effectively. It shows that India has large bovine population with large quantity of milk and dairy products. But it should be generated and launched in an effective manner.
Chaluvaiah, R.K. (1994) in his thesis says that calf mortality has assumed great economic importance after the introduction of cross breeding Programme for rapid development of dairy production. Calf mortality due to various causes is resulting in a loss of over 810 million rupees per annum at national firms. Death of calves in addition to direct financial loss causes the loss of genetic material for herd improvement and decreased number of dairy heifers available for herd replacement and expansion.

Sastry, N.S.R., Thomas, C.K. and Sing, R.K. (1991) said that there were 200 million and 75 million buffaloes in India which constitute respectively 15.7 per cent and 54.2 per cent of the world population. Majority of the indigenous cattle are zebu type and are mainly used for draught and some milk production. In India the buffalo is the main milk producer of the country. Of the total annual milk production of 43.5 million metric tonnes in 1986, the share of buffalo milk was nearly 54 per cent. However, due to the efforts of the various Governmental organizations many cross breeds (crosses between zebu and exotic cattle) have been coming up. Cross breeds are in substantial numbers in Kerala, Pondicherry and around Bangalore. But cattle are still mainly used for work in the agriculture and rural transport sector. An estimate of Indian Institute of Management, Bangalore, puts the value roughly at 30,000 million kilowatts of power produced by bullocks at Rs. 10,000 millions. An attempt is made in this thesis to discuss the various breeding, feeding and management practices of different categories of cattle and buffaloes as well as the principles and economies of production of dairy farms and small farmer’s production units are explained in this context.

Panse et al. (1961) studied the cost of production of cow and buffalo milk taking into consideration a number of factors such as, feed cost, labor, depreciation etc. And the cost of production of buffalo milk is less than that of cow milk. According to his opinion in urban areas however the cow is the
economic producer’s of milk. This difference is mainly due to the fact that in urban areas good qualities of cows are kept under better management and feeding.

Pal, R.N. (1961) described the conductivity of cow and buffalo milk and observed that the buffalo milk had a lower conductivity than cow milk. The lower conductivity of buffalo milk is due to high percentage of fat that means globules which is a non conductor. It means the electrical conductivity of cow’s milk has a wide range.

Patel and Raj (1948) advocated that the butter fat content in cow’s and buffaloes milk is influenced to some extent by the quality of the Nation. The butter fat content of milk of some breeds of cows and buffaloes of India is known to be affected by feeding practices. Liberal feeding of cotton seeds to buffaloes in the cotton tract particularly Maharastra, Andhra Pradesh and Gujarat of their milk and higher yield butter fat and this is supported by the findings of Patel and Raj’s thesis.

According to Lalitha and Dastur (1956) the quality of Ghee depends upon a number of factors, such as its flavor and aroma, it also largely depends upon its various methods of depreciation particularly the quality of cream or butter used for ghee making and the range of heating temperature and its duration. He also expressed that color of buffalo ghee is white in contrast to yellow or yellowish color of cow ghee due to the presence of carotene in cow’s milk fat. Sometimes greenish yellow pigment is found in buffalo ghee. Market ghee generally contains large amount of free-fatty acids, varying form 2.5 to 10 per cent Oleic Acids which get-oxidized when exposed to sunlight and air and are responsible for tall way smell in ghee.

Mergos and Alderman (1987) furnished reliable estimates of impact of operation Flood on milk production on the basis of data collected in two World Bank sponsored and funded research studies in Madhya Pradesh and Karnataka.
They estimated that in Madhya Pradesh, milk output had increased by about 20 per cent over a period of five years and in Karnataka by about 50 per cent. This means that milk production in the project areas may have increased at the rate which was 4-10 per cent higher than the average annual rate of growth in the non-project areas.

Gulati et al. (1996) conducted a World Bank sponsored study on the Indian Dairy policy and Protection. The study revealed that the productivity of milk animals increased due to cross breeding of the non-descript, Indian cows with the high yielding exogenous cattle breeds. There is an indication based on the data from various livestock census statistics that the member of milk animals was increasing faster than the number of total bovine stock. The relation to draft power milk production has been a more important reason for maintaining the bovines and the share of cross breed cows in the stock of cows has also increased due to the substantial rise in the number in the 1980’s.

Khurody, D.N. (1964) stressed the toned milk has become a permanent feature ever since the market milk industry in India. He opined that by merely adding water to whole buffalo milk, both the fat and solid-no-fat content are reduced. In India milk sellers are selling water mixed milk to the customers. The milk sellers must leave all these activities. They should provide good and pure milk to the customers.

Rao, V.M. (1991) in “Dairy farming socio-economic Analysis of milk production”, felt that there is a need for the studies in Economic aspects of milk production. The study is essential to analyze various relevant Economic parameters of different milch animals which would indicate the relative superiority of a particular breed over the other under field conditions. Further it is necessary to provide basic information on investment and labor absorption in dairying, cost
of milk production, and costs and returns on different species of milch animals with reference to cost, returns and input output relationship in milk production.

Renukaradya, G.J. (2008), stated in his article on “Livestock health is the back bone of the dairy industry” in the recent continuous attempts have been made to improve the indigenous germ plasma through extensive cross breeding programmers to enhance milk production next to the United States of America.

Punjnath (1993) expressed that the Indian livestock industry is suffering from economic losses on account of health problems by way of curtailed production and considerable deaths among young and productive stock animals, among the infectious of bovine diseases, viral diseases such as Rinderpest and foot and mouth out as the major problems. Infectious Buffaloes Rhinotractis (IBR) is a contagious disease of cattle with varied clinical manifestations, such as respiratory, ocular and reproductive, central nervous system enteric and dermal forms. Most of the times diseases may go unnoticed because of their sub chemical nature, to avoid these secondary bacterial infections, it is required to treat the animals with antibacterial agents and this may be essential to the treatment.

Roopa Satiesh (2004) suggests that the rural community of India is mainly dependent on agriculture and animal husbandry for its sustenance. To increase the production levels of Indian cattle, many animal husbandry activities have been taken up. Massive cross breeding programme was among them for which superior germ plasma from highly productive spices of cattle were imported from different countries. This was partly responsible for a number of Haemoprototzoom diseases becoming prominent in India.

Battacharyulu (1975), examined the acute form of the disease commonly seen in adult susceptible cattle, shows fever persisting for several days. They told that the disease is accompanied in appetency, nasal and ocular discharges and swelling of the superficial Lymph nodes followed by marked Anemia. The disease
runs a course of 8 to 15 days with rapid loss of condition and mortality up to 90 per cent.

Sandeep Halmandge (2003) stressed that the major disease among the calves is Ascariasis which is caused by Toxocaravulorum. The diseases are much more common in buffalo calves when compared to cattle calves. In addition to that Das and Das Sing (1955) considered that as the number of cause of calf morbidity and mortality in buffalo calves. Radostitst (1994) is also supported the disease among calves leads causing considerable economic loss to the farmers. The economic loss due to Ascariasis is due to mortality decrease in the growth rate, leading to delay in sexual maturity resulting in the attendant loss in production. In his study he revealed many interesting factors of Ascariasis of cattle and buffalo calves. Good amount of information is gathered from prospective and retrospective study on the epidemiological patterns of this disease.

Collen Brunning Fund and John B. Kanneene (1992) have stressed utilization of immunoglobulin concentrate prepared from colostrums and pooled bovine sera therapeutic purpose has attracted the attention of many workers. The large quantity of cattle serum available at abattoirs has been shown to have a great potentiality as a possible immunotherapeutic agent (Sayeed Ahmed et al., 1992) against Colibacillosis.

Rajagopalan, S. and Shiffman, M.A. (1974) advocated that the causative organisms of enteric diseases may be bacteria, parasites or viruses. They are discharged by sick persons and animals in their excreta and infant healthy persons when ingested. They may reach the mouth either through contamination of contaminated water, milk, food and domestic flies may also play a part in this transmission. He advocates in fighting diseases and cholera epidemics in particular. This also gives to prepare the planning, administrative and operating personnel for their roles in emergency conditions. Actually dairy processing
should be clean. But villagers do not take good sanitary and cleaning measures. This should be provided by the training programme to the villagers.

Gupta, H.C. (1997) described that India is in a position to export bio-technologies, germ plasma of finest buffalo and cattle breeds, dairy processing equipment, good packaging equipment, and product development technologies and provide training to technical personnel and managers for developing countries at relatively low prices charged by developed countries. At present India's exports are limited to small quantities of ghee and short and medium term prospects of export expansion are primarily in milk powders, butter and ghee. In this context the Government should give all priorities, subsidies, low interest loan for the dairy farmers. Market preferences to the dairy product are essential, otherwise Indian dairy farmers face lot of problems by the internal and international market.

Sreedhar, S.B. (2007) says that barren cow gives milk within few months if we give certain prescription. In this context Dr. Sreedhar, N.B. examined that if we gave certain prescription for the barren cows definitely gives sufficient milk. Sreedhar again says that some secret diseases are responsible for this type of barren cow. Control of insects is also very essential. Farmers have to take care to solve this problem of insects on Livestock's. Due to this, dairy farmers spray and spread daily the Neem Oil on their cows, buffaloes, calf and oxen cultivation. This is very simple and economical to protect their Bovine population from insects. These insects are common in Malnad region in Karnataka. Therefore, Dr. Sreedhar's idea is that one should not neglect barren cows, if we gave certain medicine and prescriptions definitely that cow gives sufficient milk to the dairy farmers.

Ashok Kumar (2006) in his book “Animal Husbandry” has presented a contemporary outline of the main subject divisions of animal husbandry with emphasis being placed upon the practical implications on cattle. He also says
cattle are herd animals and therefore, under normal circumstances will keep together. Any animal that keeps a part should be closely examined. In the dairying districts of temperate developed countries, the calf from a dairy cow is taken from its dam within one or two days of birth after it has had the advantage of suckling its dam’s colostrums. The practice of removing the calf at birth and giving it colostrums from bucket or bottle is not now so common since it makes much higher demands upon labor calves from beef breeds kept under extensive conditions suckle their dam for 6-8 months. Healthy calves have a bright full eye, but spend the majority of the day resting. Any sick animal must be removed and housed separately.

In recent years, the buffalo commonly known as an ‘Asian Animal’ has attracted global concern. The buffalo is the dairy, draught and meat, animal of Asia. Today in India, the water buffalo is recognized as it accounts for more than half of India’s total milk production, although it constitutes only one third of the total milch population, yielding on an average no more than 1.5 liters of milk per day in contrast to an average of 7 to 8 liters of daily milk yield obtained from well bred milch breeds.

Michael C. Appleby and Barrey O. Hughes (1997), said in “Animal welfare”, that the animal welfare refers to the particular kind of moral concern we have for animals as a result of their capacity for subjective experience. With a few exceptions (Kennedy, 1992) most of the people appear to believe that animals experience affective states (feeling emotions) and hence that animals can suffer if conditions are bad, and enjoy life if conditions are good and neither health nor lack of stress no fitness is necessary and sufficient to conclude that an animal has good welfare. Welfare is dependent on what animals feel (Duncan, 1993). According to these feelings-based’ approaches, welfare will be reduced by negative subjective states, such as pain, fear, frustration, hunger and thirst, and will be improved by such positive states as comfort, contentment, and the pleasure
of certain types of social interaction. The task for Science then is to study and understand these subjective experiences of animal.

Ranga (2004) said in “Animal Behavior” that for studying the behavior of any animal we should concentrate our attention on the types of responses it gives to its natural surroundings. The important things about an animal is what it does, and when we have described this it is possible to analyze the environmental change, which cause it to act, the psychological peculiarities which changes its behavior and the various individual consequences of its reaction. The psychological peculiarities are associated with the activity of neuroses.

In present status and promise of Dairying in India, Patel R.K. (1993) stated that the dairying is very important occupation that helps the women folk of rural area with higher degree of employment opportunities. Several studies reveal that women play a significant and crucial role in dairy production. As a matter of fact a large number of dairy production related tasks like harvesting and transporting fodder, chaffing of fodder, feeding of animals, cleaning of cattle sheds, preparation and sale of milk products are all done by rural women. Therefore it becomes necessary to improve their skills and make them more productive. This representation shows the predominant role of women in dairying tasks. Dairying work not only needs women participation but also requires making them participate.

Fahimuddin, M. (1973) in his “Domestic Water Buffalo” said as the Aryanization of the Indo-Gangatic Plains of India proceeded further, the Aryan Society became more organized. They also adapted Indigenous agricultural and husbandry practices of the Non-Aryans and thus we find frequent references to water buffalo and its use in later Vedic Period.
Koutilya in his ‘Arthashastra’ (300 B.C) described the duties of cattle superintendents and herds men. They formulated the elaborate rules for the feeding, breeding and rest of animals. His opinion was that a buffalo herdsman was entrusted with 100 animals for grazing and wages were paid in kind or cash according to the different systems of grazing. A herd of 100 buffaloes was to contain 4 breeding bulls and ghee was prepared from buffalo milk which yielded one-fifth more from the same quantity of cow’s milk.

The Mahabharata (400 B.C to 400 A.D) refers to the categories of animals like Boars, Tigers, Buffaloes, Elephants and Apes etc., and domesticated animals like Cows, Goats, Sheep, Horses, Mules and Asses of the former found to be tamed and reared. This means that animals supported and helped to mankind in one way or the other.

Olver (1938) makes a reference to stone carvings in Andhra Pradesh, South India showing buffaloes being used as drought animals to more stone pillars which were used in the building of temples 3000 to 4000 years ago. Even today we find that the buffalo is a very important domestic animal in the forested and hill areas of the Deccan plateau of India. Many of the hill tribes like the Todas of the Nilgiri hills worship the water buffalo and regard it as view a valuable animal in their socio-economic life. There is also a mention of Mahishamati (city of buffaloes) in the Mahabharata. In a Buddhist history (240 B.C) there is a reference to “Mahisha Mandalam” (Buffalo Country) in the south. This shows cows and buffalos are treated as god, friend, master and helper to human beings.

Shankar Rao, R. (1973) revealed that the Shivamogga city animals which exhibited straightly better caloric effect and had the benefit of higher circulating
thyroid hormones compared to their counterparts in Mandagadde village and Thirthahalli Town. This is exhibited particularly by the Malnad gidda segment (Tali). They have much more thyroid hormones compared to the cows and buffaloes of Shivamogga and Bhadravathi. The Malnad Tali cows and buffaloes are now demolished and Malnadu Gidda Tali gives medium milk but milk, ghee and butter are tastier than the other. The Government should take various steps for the improvement of this Malnadu Gidda Tali.

Kalyana Krishna et al. (1951) studied the vitamin A content in milk of cows and buffaloes and their seasonal variation. According to his opinion Buffalo milk was found to have a higher vitamin. Potency in comparison to cow’s milk fat was slightly richer than that of buffalo. The cow milk is more potential and better than that of buffalo. Therefore, people feed large quantities of cow milk to the small kids.

Hegde Katta (1932) mention that buffalo cows are used for field work in South India and for about 3 hours per day without any adverse effects on their milk yield. No scientific data are available on the draft capacity of the different types of breeds of buffaloes in terms of their size or body weight. The working buffaloes are slower in movement in comparison to oxen. They usually cover 3.2 K.M (2 miles) per hour against 6.4 K.M (3 to 4 miles) per hour by draft bullocks. The buffaloes have much bigger weights than oxen. A pair of buffaloes can draw a cart load over one tone on good roads. Even buffalo calves are used for draught purposes in some parts of India.
Kurup (2000) analyzed the milk production and consumption and he stressed that in India about 45 per cent of the milk produced is consumed as liquid milk and the rest is in the form of value products. This means that 45 per cent of the milk production is definitely consumed by the Indian population. And the remaining 55 per cent is in the form of value added products.

Kurup (2002) also stressed that although we have well developed infrastructure and trained man power for delivery of medicines, vaccinations, semen etc., remained due to want of finances. Also the breeding services are not upto the desired level. Hardly 20 per cent of the breeding cattle and 15 per cent of the buffaloes are breed through artificial insemination. He opines that infrastructure not only grows with economic development, it also makes further economic development possible. It can accelerate development and reduction of poverty. This means that we have well developed infrastructure and trained manpower for delivery of livestock services. And we have adequate medicines, vaccinations, semen etc. to be utilized for the development of animal population sufficiently.

Joshi and Roy (1954) and Raj and Joshi (1955) studied Amino acid composition of Murrah, Surati and Mehsana breeds of buffalo are found no breed differences in this respect. This means that the Amino acid composition of Murrah, Surati and Mehsana breeds of buffalo are found no differences.

Tomar and Tomar (1960), Sing and Singh (1967) and Bhatnagr et al. (1961) studied the effect of season of calving on lactation yield and location length in Indian buffaloes and found that the season of calving has no significant effect on lactation yield.
Aggarwal (1962) obtained a coefficient of correlation of 0.68 between the age at first calving and first lactation production. He suggested that the first lactation production can be used for selection of buffaloes for higher production during lactations.

Sing and Desai (1962), Datta et al. (1965) and Rao et al. (1970) said that the age at first calving was found to have no effect on productive traits of buffaloes. Further detailed investigations are necessary to assess the effect of age at first calving on economic traits of different breeds of buffalo.

Bhale Rao et al. (1950) and Paul et al. (1951) examined digestibility and growth promoting values of buffalo’s, cows and goat’s butter fat and they did not observe any difference either in the digestibility or growth promoting values between the butter fat from the milk of different species. Basu and Mukerjee (1943) have observed that there is very little difference in respect between the milk of buffalo, cow and goat. The method of milk utilization by the cow and buffalo milk products are fluid milk, sour milk products soft cheese hard cheese, Butter and Butter fats, but they did not observe any clear difference between all these types of milk.

Kumar and Singh (1993) assessed the impact of Operation Flood on Production of milk in Rajasthan state and analyzed a data set of 90 households of two districts. The authors pointed out that total production of milk per house hold per day in the villages covered under Operation Flood was almost one and half times (6.92 liters) that in the non Operation Flood villages (4.93 liters). This expressed the impact of Operation Flood on Rajasthan State and Karnataka.
Operation Flood can be expected to increase milk Production through its impact on milk yield per animal size of milch herd and proportion of lactating animals.

Mattigatti et al. (1993) evaluated Operation Flood on cow milk Production in Dharwad district of Karnataka State and concluded that the introduction of Dairy Co-operatives helped farmers to boost the milk production. Dairy Co-operatives helped farmers to increase maximum quantity of Milk production. They give real price also to the dairy farmers.

Mergos (1997) examined the ground reality of increase in milk production and direct impact of Operation Flood on milk Production. The study admitted that the direct impact of Operation Flood on milk Production growth had been modest and indicated that 25 per cent to 50 per cent of increase in procurement by Operation Flood was likely due to switching. It also advocated that milk production increase in the country was real and no evidence was available to show otherwise.

Griffen Michael (1997-86) stressed that India with its enormous milk production could be seen as the “slumbering giant” of the international dairy trade. It means that India’s dairy Industry is going to benefit from the new trade regime in terms of increased access to world markets for its dairy products consequent upon the reduction by developed countries in tariff and non-tariff barriers on the imports from developing countries such as India. So for the world trade in dairy products has been monopolized by a few developed countries. But the opportunities offered by the new trade regime should be taken with a pinch of salt as observed by Dr. V. Kurien, Chairman NDDB (National Dairy Development Board). It will be essential to set and enforce high quality standards for various
dairy products through an Independent Non-Governmental authority. It is preferably by NDDB and improve the basic infrastructure particularly ports and air transport. India should also need to improve its competitive advantage in milk production by improving milk yield so as to reduce the per liter cost of production and improve the quality of its products by adopting latest processing and packaging technologies and better management.

Malhotra (1997) observed that “Livestock rearing in India” is the most ancient and ubiquitous activity, engaging many families. But it is not adequately contributing to the well being of many livestock keepers. He said that India’s livestock development and production is faced with lesser pasture land per animal lesser draught power from its bovines and negative trend in cattle population since 1990’s.

Raju, V.T. and Rao, D.V.S. (1993) said that the physical sciences such as Agronomy, Geology, Animal husbandry Engineering and Forestry have great importance in production Economics. Production economics is also related to other social sciences. The process of decision making under uncertainty, involves Psychology, Sociology and Political Science as much as it involves Economics. The authors also advocated a farm is a firm which combines resources in the production of agricultural products lines of business lines of firm.

Bansil and Malhotra, S.P. (2006) in their work said that there was a need for a comprehensive volume on livestock and Fishery sectors is rather limited and scattered. Since basic data on livestock and fishery sector are inadequate and unreliable, we had to fall back on various published and unpublished sources of varied nature. They felt that the present trends indicate that animal protein
requirement would rise faster than cereals in the consumption pattern mainly due to increase in income and need for quick food, such demand driven growth which is taking place greater emphasis on harvesting, storing and processing facilities. Government and industry must prepare themselves for long-term policies and investments. That will satisfy consumer demand to improve nutrition income and opportunities for employment productivity is the key to growth.

Mathialagan, P. (2006) said in “Text Book of Animal Husbandry and Livestock extension”, the author advocated that the “extension is education and its purpose is to change the attitude and practices of people with whom the work is done. Animal husbandry or veterinary extension is a special branch of extension education which deals with the people through educational procedures, in improving livestock farming methods and technique, increasing the animals and birds production efficiency and income, stepping up the level of living and evaluating the social and educational standards of rural life”, and he argued that a co-operative society is a voluntary organization and all are welcome to join in it. Every members of the society has equal rights and responsibilities. The association is for the mutual benefit and help and not for getting individual profit. The animal husbandry co-operatives that are in vogue are dairy co-operatives, sheep co-operatives, poultry co-operatives etc., and they play an important role in the socio-economic transformation and development of livestock farming community. The main function of livestock farmer’s co-operatives is to accept the livestock products, milk egg-meat etc, from their members and to market it independently or through their product supply unions. The societies may also under take activities concerned with the development of livestock breeds, their improved feedings, management and disease control. The sheer dominance of the traditional milk traders and the limitations in the procurement and processing capacity of the
organized dairy industry has hindered our country potential milk production below the desired level.

Perumal, M., Mohon, P.S. and Suresh, M. (2007) said that the Dairy Development acquires special significance when nature plays truant as is the case today, in Tamil Nadu, where unprecedented drought has hit the lives of many rural people. He also stressed even feeling of milk animals has become very difficult. Hence, efficient dairy development calls for an integrated approach namely rearing, maintenance and marketing of milk and as its allied products. As Gandhi clearly pointed out villages are the backbone of the Indian Economy. In rural areas cattle rearing is one of the occupations especially among the rural poor comprising of farmers and artisans. It can fetch a considerable amount of additional income for their livestock. It provides employment opportunity to the uneducated children in rural symbiotic relationship. Cattle and buffaloes have a complementary, supplementary and sustainable relationship with crops under mixed farming system prevalent in the country (Acharya, 1990). The draught power for agricultural operations and rural transport in a great measure is available from cattle.

Venkata Subramaniam, A.K. Singh and Rao, S.V.N. (2001) said that the livestock economy of our country has attracted wide spread attention and several organized developments since the beginning of 20th century. The pace of Dairy development has picked up only after 1970 with the launching of operation Flood. If we look at the history, dairy development programmes have gone through a metamorphic change from the initial key village scheme and cattle development project nation wide anti-poverty programme as an instrument to social security in rural India.
Chapter 2

The review of literature attempted above shows that many studies conducted at global, national and regional level. It is an indication of its importance. Some studies have been conducted in Karnataka state also. The studies conducted by several experts covered various issues related to the dairying sector. They have used different methodology to analyse this important sub sector of agriculture. The present investigation is a micro in its nature and covered issues such as production, cost, demand, supply etc., in a region specific context.
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