INTRODUCTION
CHAPTER-I

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The livestock sector has emerged as an important segment of an expanding diversified agricultural sector in the Indian economy. Agriculture and allied sectors contribute nearly 18 percent of gross domestic product (GDP) while about 65-70 percent of the population is dependent on agriculture for their livelihood. The contribution of agriculture to national GDP has been steadily declining from 27.83 percent 1994-95 to 16.50 percent 2007-08. India ranks today as the world fourth largest economy in term of purchasing power parity (after USA, China and Japan) with a GDP annual growth rate of 8 percent (driven mainly industrial growth of 9 percent and service sector growth of 9.8 percent). The contribution of livestock sector to agricultural GDP has been steadily growing. It was about 22.51 percent in 1999-2000 and has increased to 26.00 percent in 2007-08 (Anonymous 2007-08).

With the changing business environment of food and agriculture sectors, including the livestock-based high-value agriculture segment, the importance of information and knowledge has increasing become an integral factor of production for effective decision making by the farming community (Alvarez and Nuthall, 2006’ Birkhaeuser Evenson and Feder, 1991; Cash, 2001; Galloway and Mochne, 2005). In most developing countries, information on improved agricultural technologies and practices as a public good and agricultural extension services are one of the most common means of public sector knowledge dissemination.
The recent trends in growth of the livestock sector suggest that not only the production of livestock sector suggest that not only the production of livestock products need to be increased but also the processes of production need to be reoriented to meet growing concerns for consumer safety and health across the world. The potential for increasing livestock production through the provision of information is growing in many countries, with intensification of crops/livestock production system and increased market demand for animal-based products. Livestock advisory services and knowledge dissemination to farming communities for better and informed decision making at the farm level have become essential to this process of structural change and potential growth in high value products.

Today, a cattle rearing was become a subsidiary vocation for many households, generating additional income, being a predominantly agricultural economy. India has the largest cattle population in the world. Their contribution to the Indian economy is quite significant. Presently the livestock sector accounts 21 per cent of the value of out put of the combined crops and livestock sectors, which constitute agriculture. This, in turn is about 29 per cent of the total gross domestic product of the economy. Agriculture is the predominant sector in the rural population. Agriculture and animal husbandry are two main pillars upon which the entire structure of the village life results in India. Dairying is important for India it is rural based, land saving and
gender natural compared to crop production, it offers more favourable opportunities of employment. Dairy farming provides sustainable source of income for the land use labour as well as marginal farmers.

Milk is the first animal food bestowed upon man by nature it plays a unique role since ages because of its nutritional, religious and medicinal qualities and its over all merit as a food item of choice. Besides this, it provides supplementary income to the weaker sections as well as source of nutrition to them. Though milch animals are maintained on all categories of the farmers but milk production in India is largely concentrated in the hands of million of small producers scattered allover the country.

Most of the people are not aware about the systematic feeding, breeding health care and management of the animals it is one of the main reasons for very low milk productivity in the country due to this. There is low milk consumption per head per capita according to recent estimates per capita availability of milk was 214 gram per day as against recommended by the Indian Council of Medical research (ICMR) at 250 grams per day as minimum nutritional requirement recommended by the ICMR. Only five states-Punjab, Haryana, Himanchal Pradesh, Rajasthan and Gujarat have a per capita availability above this level on regional basis. Only the northern region has a per capita that exceeds the ICMR requirement (Dairy India Fifth Edition, 1997). According to the latest livestock population in 2005, India
population which constitutes 15 per cent world cattle and 50 per cent world’s buffaloes population. The numbers of different livestock species has been given in the following table.

**Total livestock population in India (2005)**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Species</th>
<th>Population (in million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cattle</td>
<td>204</td>
</tr>
<tr>
<td>2.</td>
<td>Buffaloes</td>
<td>84</td>
</tr>
<tr>
<td>3.</td>
<td>Goats</td>
<td>108</td>
</tr>
<tr>
<td>4.</td>
<td>Sheeps</td>
<td>54</td>
</tr>
<tr>
<td>5.</td>
<td>Pigs</td>
<td>9</td>
</tr>
<tr>
<td>6.</td>
<td>Camel</td>
<td>1.1</td>
</tr>
<tr>
<td>7.</td>
<td>Horses</td>
<td>1.0</td>
</tr>
<tr>
<td>8.</td>
<td>Chicken</td>
<td>175.0</td>
</tr>
<tr>
<td>9.</td>
<td>Others</td>
<td>1.2</td>
</tr>
</tbody>
</table>


As mentioned above India’s bovine population estimates to 204 million cattle and 84 million buffaloes. About 75 to 80 per cent of the bovine population is non-descript, the majority belongs to draft and dual purpose breeds. The number of cross-breed cattle is presently estimated at 13 to 14 million of which more than half would be breedable females. India which the cattle population increased by about 1.8 per cent in the period 1982-87 buffaloes population has grown by 10 per cent in the same period it needs emphasis that cattle population has decreased by 1.6 per cent while buffaloes increased by 2-3 per cent in the next 5 year (1987-92). This trend could be
attributed to the increasing importance given to buffaloes as milch animal and declining at dependence on cattle for draught power.

With expanding livestock population, the output continuously grew over time despite the two per cent drop in cattle population during 1987-92. The cow milk production has registered a 7.5 per cent growth from 24 million tones in 1989 to 29.4 million tones in 1992 (Source: Survey of Indian Agriculture, 2000).

In India total milk production was 68.3 million tonnes in 1996-97, in 1997-98 milk production was 70.5 million tonnes, in 1998-99 milk production was 74.7 million tonnes and 1999-2000 milk production is 78.1 million tonnes. During the year of 1999-2000 per capita milk consumption 214 grams per day in India. Employment in livestock sector 18.4 million population.

According to the national commission of agriculture (1976), “the average annual” milk yield per cow is only of the order of 157 kg and buffalo, 504 kg and cow milk yield is due to poor production potential of the dairy animals, which is due to lack of adequate nutrition and health care. Efforts for improvement through breeding have been inadequate, except through cross breeding with exotic dairy breeds. However, in milch herds in organized sector where dairy animal are herds for commercial milk production, higher production per lactation has been commonly reported at 800 kg for descript cows, 1250 kg for buffaloes and 1800 to 2400 kg for crossbred.
For improving the livestock productivity an extensive infra-structure is being developed in the country. As a result, presently, there are 500 key village blocks, 134 intensive cattle development projects, 94 cattle breeding farms, 51 buffalo breeding farms, 184 exotic cattle and crossbred farms.

The role of dairy in the Indian economy has become crucial with raising the standard of living and increasing demand for milk and milk products, considering the high income elasticity of demand for milk and its product.

The most significant and contribution of the co-operative dairy is to bridge the rural production and the urban consumer through the nation milk grid. It has been able to bring to the door step of dairy farmer the lucrative urban market which is other wise in accessible to him.

Although rapid increase in milk out put is now under way in the country as a result of widespread use of co-operative system of dairy development.

Recently, increases in demand of milk has not been matched by increase in supply. To meet the challenges ahead, greater emphasis need to be placed on facilities in the areas at milk production, processing, marketing and research.

It is, therefore, imperative to identify all relevant factors associated with milk production in the country. As regards to important factors affecting milk out put, the notable are:
1. Quality and number of milch animals
2. Investment in the dairying and
3. Marketing network.

All of them are closely related with returns and are again determined by cost of milk production, price spread and marketing surplus. These factors should be efficiently managed. Hence, there is large scope to increase milk production in milch animals, because they are poorly maintained on small farms. Proper management, feeding, health care and improved breeds are not available to marginal and small farmers. These farmers are so poor that they cannot fulfill their daily needs and hence the basic problem is upliftment of rural milk produce.

Since 1999, India has emerged as the world’s largest milk producing country with an estimated production of 76 million tonnes. However, milk production in India, unlike the rest of major dairying countries of the world take place in widely distributed small holdings over 70 million of them across the length and breath of the country. The average stock holdings is 2 or 3 cows/buffaloes per holding.

Over 65 per cent of milch animals are owned by small and marginal households. This makes milk procurent by the milk processors a daunting challenge. Between 1950 and 1970, the milk production in India more or less remained stagnant. The per capita consumption declined to 107 grams in 1970
from 132 grams in 1950. When India became a republic primarily due to population growth with stagnant producing during this period. Milk marketing was dominated by the milk vendors due to lack of assured market, a large number of milk producers has extracted deserting milk production business. In lieu of milk in tankers high yielding milk animals i.e. milk on four legs started moving from the rural milk sheds to stables/cattle colonies located near the urban demand centres and when the animals would become dry. They were sent to slaughter houses and male calves born were starved to death there by losing precious genetic material. During 1960s, the acute scarcity in milk. Most of cities was a common phenomenon. India earned the dubious distinction of becoming the largest importer of dairy products in the world. By and large a dairy venture was considered a high risk business during the pre operation era.

Dairy sector witnessed a spectacular growth between 1971 and 1976 i.e. operation flood era, an integrated co-operative dairy development programmes on the proven model of Anand pattern was implemented in three phases. The National Dairy Development Board (NDDB) was designated by the government of India as the implementing agency. The major objectives was to provide an assured market round the year to the rural milk producers and establish linkage between rural milk production and urban market through modern technology and professional management. Milk production
grew from 21 million tonnes in 1970 to nearly 89 million tonnes in 1996, more than three fold, at the compound growth rate of 4.5 per cent. Some ten million farmers were enrolled as members in about 73,000 milk co-operative societies. By 1996, milk co-operative attained a dominating share of the Indian dairy market butter 96 per cent, pasteurized liquid milk over 90 per cent. Milk powder 59 per cent, processed cheese 85 per cent. India was reckoned as major threat in the dairying world. In retrospect, it was by no means an easy task. Let us all salute the revolution in India, Dr. Varghese Kurein, without whose dynamic leadership, all this way not have been possible. The dairy co-operative movement has continued to grow in the post operation flood area.

The National Dairy Development Board (NDDB) was recently put in place “perspective 2010” to enable the co-operative to meet the new challenges of globalization and trade liberalization. Like other major dairying countries of the world. The Indian co-operatives are expected to play a predominant role in the dairy industry in future as well. However, India is in the mean time, attaining its past glory and is once again becoming “Doodh ka Sagar”. But what percentage of this sagar is handled by the co-operatives just little owner 7 per cent. Since liberalization of the dairy sector in 1991, a very MMPO, establishment dairy share of the total milk is hardly 5 per cent. Therefore the total share of the organized sector, both co-operative as well as
the private sector is hardly 12 per cent. Besides, growth in milk production is literally to continue at the present rate of 4.4 per cent in the near future. Who is going to handle this incremental milk? We must bear in mind is both income and price elastic and account for approximately 15 per cent of the total expenditure on food. Demand for milk at current rate of income growth is estimated to grow at 7 per cent per annum (Anonymous, 2008).

Marketing is an integral part of the process of commercial production. The existing marketing system in India is very often viewed as exploitative. There is a growing concern that the consumers are loosing purchasing power due to rise in price while the producers are not getting remunerative prices of their products. The organization in which marketing is either absent or incidental is not a business in real sense.

Marketing of fluid milk occupies an important place in the dairy industry. A major portion of the liquid milk is marketed by the private or vendors more commonly known as “Dudhias”. They are very popular cities, but the urban customers are not fully aware of the extent and nature of dilution practices adopted by majority of the milk vendors. Unfortunately, milk marketing and distribution is not much organized. The middleman collect the milk from small and marginal farmers and sell milk in near by cities. The economics of home delivery system is still causing imperfections between producers to consumers. Generally they adulterated milk with 25 per
cent to 30 per cent of water. Recently milk vendor evolved and adopted a new technique. Under this strategy they write “cow milk” on cans, but normally it is found to be mixture of about 25 per cent cow’s milk, 35 per cent buffalo’s milk and 40 per cent water (Dairy Guide, 1988). Besides this customers are not sure about the addition of preservative. Since dudhias provide door to door service, 78 per cent of fluid milk market has been captured by them or middleman and rest 22 per cent is covered by the organized sector.

Today, the major constraints to milk consumption is not only the limited production of milk, but the low purchasing power of bulk of people as well as inadequate handling and processing facilities and marketing infrastructure.

Marketing of milk are facing many difficulties. Some of the problems like inadequate availability of feeds and fodder, inadequate space for keeping buffaloes. Lack of veterinary facilities and water supply etc. are basic in nature. Whereas other problems like loan for purchasing milk animals, long marketing channels, higher middle man margins, lack of transport and chilling centre were generally faced by the farmers belonging the villages under study.

Thus, there is need to remove such types of problems which are very common for the farmers. Although the integrated production programme are functioning on large scale by the government.
These programmes are as follows:

1. Key village scheme.
2. Livestock intensive development programme.
3. Small farmers development agency.
4. Integrated rural development programme.
5. Intensive cattle development programme.
6. Special livestock project.
7. Goshala Vikas Yojana.

Further, as result of implementation of various cattle development schemes, the number of high yielding milch animals, including crossbreds is increasing in population, resulting in higher milk production. But milk production is increasing with slow growth rate.

World export trade in dairy product has gone up by 16 percent in the past WTO era. As anticipated significant redistribution market share on the world market has started taking place. Major gainers are New Zealand, Australia, Argentina, South Africa and the loosers are the European union and the USA. Indian dairy industry has by and larges concentrated on its vast domestic market. India is presently a major player in the world market. It is a pity that India’s gain 30 for has been marginal.
It was expected that trade liberalization and WTO would lead to higher and more stable world prices of dairy products. What, however, has happened is just the reverse. The global dairy market is today perhaps more volatile than ever. This is because dairy products continue to be amongst the most heavily subsidized commodities in the world. As long as subsidies are permitted to prevail, the stable world dairy market would remain a distant dream and a major threat to the Indian dairy industry through dumping of highly subsidized milk powder butter oil etc.

Uttar Pradesh is India's most popular state, home to 166 million people or one-sixth (16%) of the country's population. About 80% of the state's total population lives in rural areas. The economy of the state is agrarian in nature, which significantly contributes to the national food basket due to the fertile region of the indo-gangetic and the adoption of high yielding varieties of seed, greater availability of fertilizers and increased use of irrigation. The state supports the largest number of livestock, with about 12.7% of India's total livestock population. Empirical evidence indicates that livestock are an important component of the farming system. Providing an additional source of income and nutritional cover to large section of the rural population particularly disadvantaged and poor households (Birthal & Ali, 2005; Rao, Bantolan, Rao and Chopde, 2003; Singh, Erenstion, Thorpe and Verma, 2007). As the distribution of livestock in more egalitarian as compared to land (Ali, 2002; Taneja and Birthal, 2004).
Keeping in view to improve the economic condition of small, marginal and landless households and provide the milk to the consumers at cheaper rate directly. The Ambedkar Nagar district lies in the eastern part of the Uttar Pradesh. Ambedkar Nagar district has its peculiarities. The district dominated by small and marginal farmers and has highly productive area under crop. Ambedkar Nagar was its own importance in providing milk to large population of its own and of the capital. Keeping in view the importance of milk producers and suppliers to capital.

The proposed investigation entitled “Economics of production and marketing of milk in Ambedkar Nagar district of Uttar Pradesh” has been under taken with the following specific objectives.

Objectives:

1. To study the resource structure of sample household and to workout cost and returns of milk production.
2. To work out marketable and marketed surplus of milk and its determinants.
3. To estimate the marketing costs, margins and price spread in different marketing channels.
4. To analyse the resource use efficiency of milk production.
5. To identify the constraints in milk production and to suggest policy measures.