

AN ECONOMIC ANALYSIS OF CATTLE AND FODDER DEVELOPMENT PROGRAMMES IN KARNATAKA - A STUDY ON BANGALORE SOUTH DISTRICT

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Abstract—The livestock sector plays a significant role in promoting rural livelihoods, employment generation, and agricultural sustainability in India. Karnataka, with its rich livestock resources and extensive dairy cooperative network, has implemented several cattle and fodder development programmes to enhance milk production and improve the socio-economic conditions of farmers. This study examines the economic impact of these programmes with special reference to Bangalore South District. The research aims to analyze the status of cattle farming, evaluate the effectiveness of cattle and fodder development initiatives, assess the role of dairy cooperative societies in milk marketing, and identify the challenges faced by cattle farmers. The study is based on both primary and secondary data. secondary data were obtained from government reports, the Department of Animal Husbandry, Karnataka Milk Federation, and published literature. Descriptive statistical techniques were employed to analyze the data. The findings reveal that cattle farming has emerged as an important supplementary source of income and employment for small and marginal farmers. Institutional support, improved cattle breeds, veterinary services, fodder development, and dairy cooperative societies have positively influenced milk production and farmers' incomes. However, inadequate fodder availability, limited technical awareness, insufficient financial assistance, and marketing constraints continue to hinder the sector's growth. The study suggests strengthening fodder development programmes, expanding veterinary infrastructure, improving institutional credit, promoting scientific cattle management practices, and enhancing dairy cooperative marketing networks. These measures would contribute to sustainable livestock development, increased rural income, and overall agricultural growth in Karnataka.

Index Terms—Cattle Farming, Fodder Development, Dairy Cooperatives, Milk Production, Livestock Development, Rural Economy, Karnataka, Bangalore South District

I. Introduction

Cattle farming serve multiple functions apart from generating productive employment in rural areas. Weaker sections of the rural population have a prevalence to supplement their income and nutritious food through cattle farming activities. Karnataka State is blessed with unique livestock resources considerable genetic diversity with the capacity of adapting to stand harsh environmental situations.

Today, millions of people are suffering from starvation and malnutrition and the number will increase with the inevitable rise in the world population. This poses an inexorable challenge to all the scientists involved in problems underlying the production of food for humanity. Yet the development of livestock industries does not only aim to improve the nutritional standards of the human population but also from man's point of view,

animals are multipurpose and their use can have different objectives, such as economic, social, and ecological. In addition, being important as source of food, clothing and certain forms of power, animals can also represent forms of wealth, recreation, means of employing labour, aesthetic enjoyment and determinants of landscape.

II. Review of Literature

Cattle production must increasingly compete with other forms of agricultural production for resources, especially energy, but also for land and water. This creates a greater need than ever before to develop systems which maximize efficiency. At the same time, these systems need to meet their requirements. They must be environmentally beneficial, ethically defensible, socially acceptable and relevant to the particular aims, needs and resources of the community they are designed to serve. (Coop, World Animal Science Series, 1992).

Cattle farming have been an integral part of human civilizations and cultures. In early times, the possession of livestock was a symbol of progress and prosperity. We find numerous evidences from the vedas and puranas. As the population grew disproportionate to the available natural resources and food gathering became increasingly difficult for the nomadic man, he settled down with cultivation and thus began the gradual shift from dependency on animal to land.

Cattle farming became subsidiary to cultivation and is comparatively the oldest occupation of mankind. In an agrarian society, land being the principal means of production was concentrated in the hands of rich; the poor worked in the fields of the rich as agricultural labour and supplemented their income by keeping a livestock. Thus, cattle farming have been the savior of weaker sections. Further it acts as not only as buffer against crop failures and other calamities but also serves to meet domestic requirements. Realizing its importance, the Government of India at the national level and Karnataka Government in the state have established various promotional agencies to develop cattle farming as a subsidiary economic activity in different parts by providing the necessary infrastructural facilities. In Karnataka, many Central and State Government agencies function effectively in improving cattle farming and allied aspects, even as they face many problems in their path towards success.

For several thousands of years, agriculture and food consumption has depended not only on livestock which in varying degrees provide milk, milk products and the much needed manure. The bulk of the output always been converted into the by-products and waste products from the mixed farming. Both production and consumption of milk and milk products are however far from evenly distributed.

A vast majority of our population depends upon agriculture and livestock rearing for livelihood directly as well as indirectly. The aim of agriculture and rural development in India has been declared to be oriented towards growth with social justice, achievements of full employment in the rural areas and removal of rural poverty. The growth strategy recommended by the National Commission on Agriculture (NCA) in its report

(1986) seeks to resume a major share of livestock industry for the deprived section of farmers and to adopt in an integrated area development approach mainly based on a system of producers co-operatives (Chahal and Gill, 1988).

Indian agriculture and its allied sectors are major sources of livelihood for a large share of the population. Even today, nearly one in two workers in India depends on the primary sector for their livelihood, while agriculture remains highly labour-intensive and plays an important role in generating employment in rural India (Keshava, 2023).

Cattle farming in India are the basic strategy for eradicating the rural poverty and bringing about the rural poor above the poverty line. The main thrust of cattle farming is to provide employment opportunities and to generate income for the betterment and improvement of weaker sections in the society in particular and to improve the nutritional standard of human beings by providing for the urban consumers in general (Biradar, 1998)

Cattle farming and the supporting milk processing activity is usually considered to be a profitable and complementary enterprise in agriculture and constitute an important activity for accelerating the rural economy of the country. The Indian cattle farming and milk processing activity establishes off-farm activities and co-op-dairies for gainful employment and income to the weaker sections of the society (Sharma and Bhatele, 1998).

According to FAO (2007) statistics on Livestock India has 210.4 million heads of cattle and 95.6 million Buffaloes, contributing about 28.29percent to the total cattle and 56% Buffaloes population of the world. India occupies a prominent first place in the cattle farming in the whole world followed Brezil, Chaina, USA, New Zealand, England, South Koriea, Argentina are leading cattle farming countries. The countries milk production during the year 1978-79 was 30 million tonnes and milk products production was about 65 million tonnes respectively, but in the period of 2010 India touched 110 m.t milk production and 650 m.t milk products production (Task Force Report, G.O.I. 2010). According to the W.H.O. recommendation, per head milk requirements is 280 grams per day, but the availability is still very low. It was 262 grams per day in 2009-10. Further pointing out the fact that with production in the country has fallen much short of both the current economic demand and nutritional requirement and hence calling for greater converted efforts to meet the future need of milk of the nation (Statistical Hand Book, Govt. of Karnataka, 2009-10).

The need for the development of cattle farming and allied activities are evident from the point of view of both the individual farmer and the nation. For the farmer, the implementation of the improved cattle farming and milk processing activity mean a higher gainful employment with greater as well as timely flow of income from the sale of milk and their products and for latter it would mean additional milk and milk products influencing positively the regular / timely supply to the consuming areas and processing centers as well as generating employment, especially for under employed who are in possession of no land in the rural

areas.

A perspective plan for cattle rearing would necessarily have to be a total programmes would include cattle cross-breeding for producing high yields, development of fodder resources, health cover provision for the cattle, proper marketing system for channelizing the production to the ultimate consumers.

Cattle farming and milk processing is considered as agro based industry plays significant role in the rural economy of Karnataka. The occupation being highly rural oriented, is a vital source for additional income and employment to small farmers and landless labourers. Karnataka has made noteworthy strides in cattle farming activity both in national as well as international level.

In the livestock map of India, Karnataka occupies an important place. Integrated rural development programme (IRDP) was initiated in the fifth five-year plan period, under World Bank aided project, for the purpose of increasing cattle population in cattle farming States.

III. Statement of the Problem

The problem of analysis is that of growth and development of cattle rearing and their related activities in Karnataka State with a view to focusing on the details of the programmes pertaining to cattle improvement. Cattle rearing in the State is for pre-historic and the management practices are still primitive in nature. The Integrated Rural Development Programme (IRDP), the single largest poverty alleviation programme which was initiated by the State Government under World Bank assistance has given importance to improve the traditional and age old cattle rearing activity. The plans and programmes yet to reach farmer's level effectively due to the lack of proper technical machinery and official propaganda.

Though the State has endowed with significant assent of cattle population (105 lakhs, indigenous + cross breed cattle, 2007), the net of resource potential derived from them is practically low and negligible both in terms of quality and quantity. According to the W H O's report, the daily per capita consumption of milk in Karnataka is only 262 grams as against 355 grams in Brazil, 365 grams in U.S.A. and 300 grams in U.K. The present estimated annual production of milk in the State was about 500 metric tonnes as against the estimated requirements on nutritional standards was about 4 lakhs tonnes calculated on the basis of 262 grams of milk per head per day. The state places only Second in terms of milk production on All India Level. An indigenous cattle yields approximately about 500 grams of milk which is being much below the All India average of 832 grams. This reveals the problem of increasing production of productive foods and also posed an unprecedented challenge view of the population explosion, drought, fight against unemployment, poverty, malnutrition and time. A vast scope exists in developing rural economy only through improved cattle rearing practices provided timely and adequate supply of inputs including credit, health care assured supply of fodder and feeds. By an extension of these facts to the rural community particularly to the professional cattle rearers their should be improvement in their welfare over time and the

cattle rearing would become sustainable in such a way that the spatial inequalities would fade away. It has therefore become more important than ever before to give major thrust to the cattle rearing and the related activity during the years to come, for augmenting livestock development and accelerating the production of milk products in the state.

IV. Significance of the Study

The National Commission on Agriculture (NCA20006)⁶ has observed that cattle farming is confined to rural areas and a large percentage of cattle rearers are small farmers and agricultural labourers. The improvements in the productivity of livestock available with the weaker sections in rural areas would ameliorate their economic condition. The development of cattle farming itself influence on rural poverty and can be a major instrument of socio-economic change by improve standard of living, employment and income opportunities to the rural poor and by diversifying agriculture.

The need for promotion of cattle farming in the State arises due primarily to several considerations, such as low per capita availability of milk, prevalence of large scale unemployment and under employment discouraging mixed farming and fuller utilization of farm products and wastages and increasing the living standards of the rural poor. It is also necessary for improving cattle population and achieving self-sufficiency of milk and milk products and also save valuable foreign exchange.

Karnataka State in India as a unique place having amazing variety of topographical features, climatic conditions and the land use patterns. The State is rich in mineral wealth which attract people in all walks of life from the country and abroad on a large scale as well. The State has attained a good degrees of economic development under different regimes-under princely state, post independent and various plan periods in the past. It has areas of agricultural potentials, industrial centers, places of historical attractions, tourists and pilgrim places, urban areas, commercial and educational centers. Thus, cattle farming has an important economic activity has not kept pace with the growing economic development of the State.

V. Research Gaps

The evidence of these studies using different methodologies and data sets do not support the common view regarding cattle farming in the concept of economics in the field of Co-operative farming. While most of the empirical studies are concentrated on the opportunities and challenges of economics and in India, especially in Karnataka in the context of Globalization. The present study focusing on the trends and growth of the cattle farming and dairy development of Karnataka with special reference to Bangalore South District.

VI. Objectives of the Study

1. To study the concept of co-operative cattle farming.
2. To provide an over view of cattle population in Karnataka.

3. To study different cattle development programmes in Karnataka.
4. To study the marketing of milk and milk products through dairy co-operative centers in Karnataka.
5. To suggest further improvements in the cattle development programmes in Karnataka.

VII. Hypotheses of the study

The following are the hypotheses

1. Cattle farming are not known to many of the farmers of cattle rearing.
2. The farmers have not given needed attention for the tender care of their cattle and production of fodder for their cattle.
3. The farmers who have availed of Institutional Facilities and Incentives could able to improve their cattle farming compared to other farmers who have not availed Institutional Facilities and Incentives.

VIII. Methodology Adopted for the Study

The study of cattle rearing and the related activity is an unexplored field from the point of view of livestock geographers and any attempt to make a serious study of cattle rearing in Karnataka, in the absence of previous studies and pertinent literature; it is necessary to start with exploratory study. It includes the review of literature which is directly or indirectly related to the subject. An interview with those people who have some knowledge of the subject and the personal observation of the site and situations of field survey and study. Since this is a holistic study in a economic background, we should also portray the changing characteristics or physiographic and climate in different parts of the state.

IX. Cattle Farming in Bangalore South District

From ancient period, man always depends on livestock for agriculture and food purposes. It supplies nutritious food and it is free from Economic crisis. Initially cattle farming are a subsidiary occupation but now-a-days it has become main occupation for rural people and also for improving land fertility through cattle dung. Cattle farming in rural area are a source for co-operative movement and white revolution. In this regard India has 1st place in the milk production in the world. About more than Rs. 11,000 crores was contributed to National resource, and 7% for National G.D.P. Karnataka is in 2 places in milk production in the country. Bangalore South District is every day producing 4.5 lakhs liters of milk it is earning 31.5 crores in a year, paying through milk producer's co-operative societies (MPCS). In recent years cattle farming is enormously extensive, in animal health, disease control, livestock production, life protection, rural development. Govt. of Karnataka has a main department among other departments for function. Cattle farming Dept. is in the zilla panchayath control, totally 218 veterinary institutions are serving in Bangalore South District. Deputy Director is incharge of the department, veterinary hospitals are serving in rural level also, in to 24 hospitals serving in this district, with 99 veterinary doctors and there are 88 primary veterinary

clinic centres at taluks and hobli level. Bangalore South District since beginning had an important in the agriculture and allied activity sector. Even before independence the governed of the State had a clear view about importance of agricultural activities, the district presently comprises are seven taluks, including the head quarter of the district Bangalore South. The recent statistical about the cattle farming and category wise classification of the cattles with the department of animal husbandry that are functioning in the district is given in the following table.

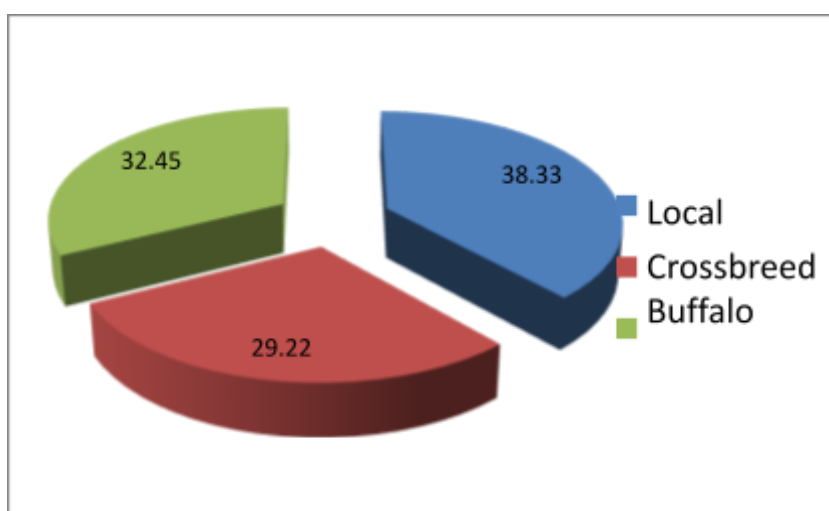
Table - 1

District Cattle and Buffaloes Classification in Bangalore South District

Sl. No.	Classification	No. Cattles	Percentage
1	Local	198875	38.33
2	Crossbreed	151632	29.22
3	Buffalo	168345	32.45
	Total	518852	100.00

Source: Dept. of Animal Husbandry, Bangalore South

District Cattle and Buffaloes Percentage Wise Classification in Bangalore South District



Of the above cattle & Buffaloes are in the district among the total cattle & Buffalo animals of 518852, which there are local cattles are 198875 (38.33), exotic cattles in last two census not clear appeared, cross breed animals are 151632 (29.22%), and Buffaloes are 168345 (32.45%) these animals

are source for milk production, power sources for agricultural operation. In Bangalore South local cattles are more than other groups of cattles.

Selection of Sample Cattle Farmers

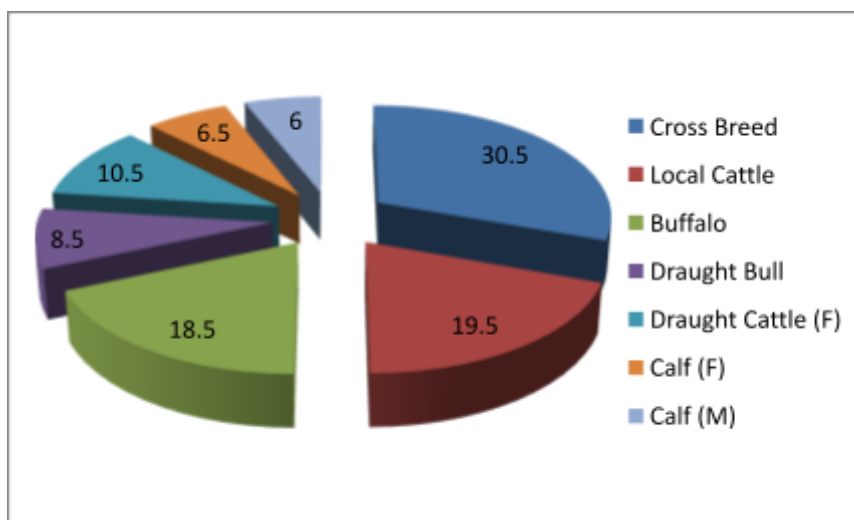
The cattle group-wise numbers of sample cattle farmers drawn for the field investigation in table-6.3, of the total 200 sample cattle farmers are taken in to consideration. Out of 200 sample cattle cross breed constitute 30.5%, local cattle 19.5%, buffalo 18.5 % , draught bull 8.5 % , draught female cattle 10.5 % , calf female 6.5 % , male calf 6 % , in this way sample cattles are taken into consideration.

Table - 2

Profile of the Sample Cattle Farmers of Bangalore South District

Sl. No.	Category	Number	%
1	Cross Breed	61	30.5
2	Local Cattle	39	19.5
3	Buffalo	37	18.5
4	Draught Bull	17	8.5
5	Draught Cattle (F)	21	10.5
6	Calf (F)	13	6.5
7	Calf (M)	12	6.0
	Total	200	100.00

Source: Field Study.



Profile of the Sample Cattle Farmers of Bangalore South District in Percent

Totally, in Bangalore South District there are 3,50,507 cattles and 1,68,345 Buffalos are distributed as per 18th livestock population census 2007. 200 cattle farmers are selected for sample units

cattles of 3,50,507 cattles (0.05%) for the field study. Out of 200 cattle rearers, 120 males (60%) and 80 females (40%) sample cases are taken in to field study in different taluks.

Profile of Sample Cattle Farmers Age Group of Sample Cattle Farmers

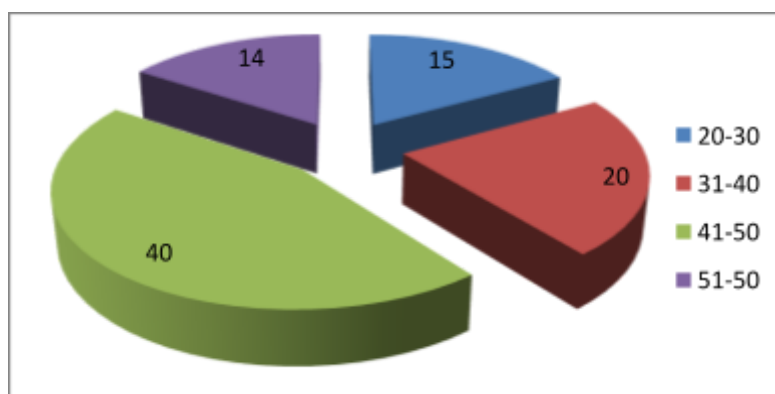
Among 200 sample cattle farmers, 30 members are (15%) in 20-30 age group, 40 members are in 31-40 age group (20%), 80 members are in 41-50 age group(40%), 28 members are in 51-60 age group (14%), 22 members are in 61-70 age group(11%),farmers are involved in the cattle farming as shown in table.

Table - 3

Age Group of Sample Cattle Farmers

Sl. No.	Age group	Groups Nos.	%
1	20-30	30	15
2	31-40	40	20
3	41-50	80	40
4	51-50	28	14
5	61-70	22	11
	Total	20	100

Source: Field Study



Age Group of Sample Cattle Farmers in percent

Social Background of Sample Cattle Farmers

Of the 200 cattle sample farmers,140 members belongs to backward caste (70%), 23 members are sheduled caste (11.5%), 16 members are sheduledtribes (8%), and 21 members are others (10.5%), are involved in the cattle farming in Bangalore South District, particulars are given in table.

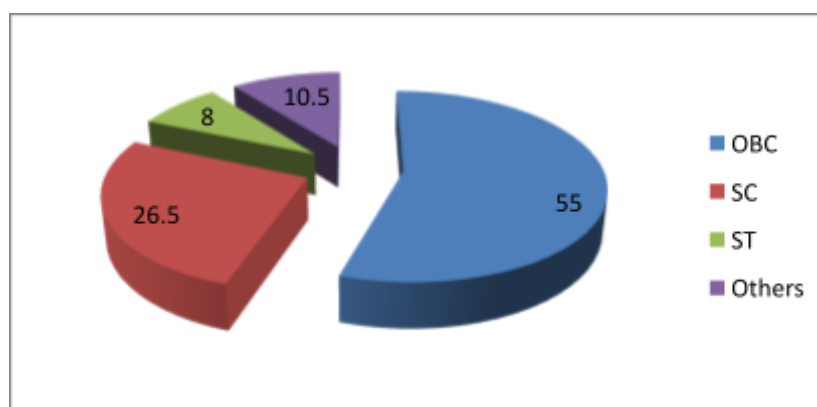
Table - 4

Social Status of Sample Cattle Farmers in Bangalore South District

Sl. No.	Social Status	Numbers	%
1	OBC	110	55
2	SC	53	26.5
3	ST	16	8
4	Others	21	10.5
	Total	200	100

Source: Field Study

Social Status of Sample Cattle Farmers in Bangalore South District in percent



Family Background of Sample Cattle Farmers in Bangalore South District

Of the 200 sample cattle farmer's family back grounds are as follows. Majority of the sample cattle farmers are involved in agricultural activities i.e., 62 members are in agriculture and cattle farming,

58 members are in cattle farming only,

35 members are in business back ground, 15 members are in official back ground,

18 members are in wage labour back ground, 12 members are in other activities,

The details of categories are given in the Table.

Table - 5

Family Background of Sample Cattle Farmers

Sl. No.	Social Status	Numbers	%
1	Agriculture Family	62	31
2	Only Cattle Farming	58	29
3	Business people	35	17.5

4	Official people	15	7.5
5	Labours	18	9
6	Others	12	6
	Total	200	100

Source: Field Study

Family Background and Milk Producers of Sample Cattle Farmers

Out of the 200 sample cattle farmers, majority of the cattle farmers are coming from the agricultural background, and labours that is 116 famers (58%), whereas 38 cattle farmers (19%) are from the business class, the cattle farmers coming from private or Govt. Services are only 19 members (9.5%), the cattle farmers coming from Industrial families 17 members (8.5%), others are 10 members (5%) , so, these indicates majority of the cattle farmers and milk producers are from agriculture back ground. The others details are given in the table.

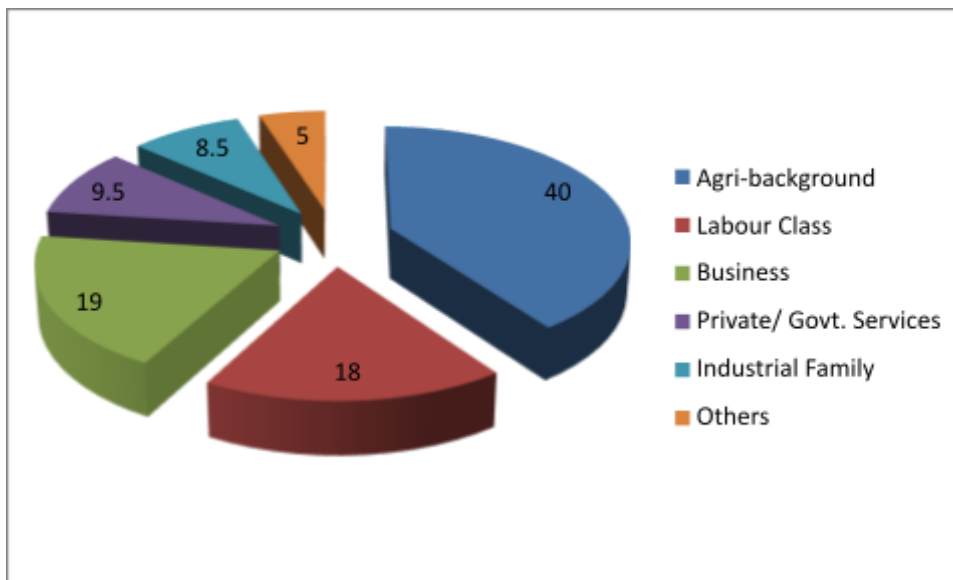
Table - 6

Family Background and Milk Producers of Sample Cattle Farmers

Sl. No.	Particular	Numbers	%
1	Agri-background	80	40
2	Labour Class	36	18
3	Business	38	19
4	Private/ Govt. Services	19	9.5
5	Industrial Family	17	8.5
6	Others	10	5.0
	Total	200	100

Source: Field Study

Family Background and Milk Producers of Sample Cattle Farmers in percent



X. Major Findings of the Study

1. Cow is the great benefactor; hence it is called Kamadhenu. Human beings have many desires and perceptions that are pushing them to do something innovative which may have positive or negative impact. In the past few decades farmers were driven into modernized agriculture with an idea of sudden and increased food production, which led to the loss of so many worthy things among them is the precious cattle population in the country.
2. The cow has been made sacred in India because it is a key species for agro-eco system. The cow is a gentle, auspicious, venerable, loving animal and it is a heritage of our country. In India we considered it as mother and call it as 'GOMATHA'. Cow dung is revered as Lakshmi, the goddess of wealth because it is the source of renewal of soil fertility and hence the sustainability of human society.
3. India has nearly 150 million cows. It has extraordinary potential to sustain our agriculture. In India, energy value of cow is Rs. 20,000 crore, and 1.2 crore bullocks are used for draught purpose. By this, we are reducing the implementation of tractors, power tillers and lorries. It saves 5 lakh crore rupees, compensating 60,000 lakh tonnes of petroleum products. So it saves Foreign exchange to the country. Cow dung and urine are used in Ayurvedic medicines. It contains various hormones and its metabolites have biological value known as 'PANCHAGAVYA' which includes five products derived from cow (cow dung, urine, milk, curd, ghee). It has plant growth hormones which increase yield as well as tolerance to pests and diseases.

Of the 200 cattle sample farmers, 140 members belongs to backward caste(70%), 23 members are scheduled caste (11.5%), 16 members are scheduled tribes (8%), and 21 members are others (10.5%), are involved in the cattle farming in Bangalore South District.

4. Of the 200 sample cattle farmers family back grounds are as follows. Majority of the sample cattle farmers are involved in agricultural activities.
5. Most of the cattle farmers 94(47%) are below higher secondary class, but milk processors are pre-collegiate level 46 (23%), Dairy diploma holders are 10(5%) specialized training received is only by 6 members (3%), illiterate people are 22 (11%), collegiate level of education farmers are 22 (11%) out of 200 sample cattle farmers interviewed.

XI. Suggestions

1. At present cattle farming is mainly concentrated in the southern dry and warm districts of Karnataka. It is possible and essential to introduce cattle rearing on large scale in drought stricken areas of Gulbarga, Bidar, parts of Bijapur, Raichur and Dharwad districts. This again should require proper infrastructures and establishment of new cattle farm, which is necessary from the point of view of breed development.
2. Research on evolution of breeds is necessary. Research on evolution of breeds suited to Malnad and coastal areas where there are no cattle rearing practices.
3. In improving dairy sectors, it is necessary and essential to strengthening the institutional support to the cattle farmers the aspect of supply of Milk and purchase of Milk products. The existing co-operative societies need to be organized, in the form of Gandhian concept co-op- cattle farming.
4. There is need to strengthen marketing organization both within and outside the State. In order to improve and promote sales of our Milk products, especially milk sales units are established at nodal centers.
5. The Strengthening of the existing Cattle Board and Milk Development Boards is essential in order to make an effective co-ordination and development in the respective fields.
6. Further it is necessary to increasing the financial assistance to cattle farmers through existing societies. Similarly, there is need to expand the number and activities of cattle breeders, association and enable them to operate at least on a 'No profit, No loss basis' by increasing their transactions in milk products instead of depending upon government grants.

The above suggestions for cattle rearing and Milk processing activities can help to make a breakthrough in the development of cattle wealth of Karnataka. A prompt effort should be made on the directed lines to realize the potentialities of the cattle wealth of the Karnataka State is required to maintain food basket, food expenditure and food demand to the fullest extent in the near future.

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