



ANALYSIS OF LIVESTOCK'S ECONOMIC CONTRIBUTION TO INDIA'S GDP

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ABSTRACT

Agriculture has a significant part in rural economic growth, with livestock being one of the most important contributors to India's economic development. India has undergone significant economic growth and structural transformations since its independence in 1947. These developments may also be seen in the livestock sector, which has grown significantly in recent decades, particularly since the late 1990s. There have also been significant changes in the Indian cattle sector's productivity. The contribution of live stock to India's GDP and economic growth was the subject of this essay. It is a significant source of employment and revenue for landless farmers. Nutrition is provided by the live stock business, which also empowers landless labourers. Only about 100 million people work in the dairy industry.

Key words: *live stock, dairy, milk, contribution to GDP, employment, food security etc.*

INTRODUCTION

Animal Husbandry is a sub-sector of the agriculture industry that offers a lot of self-employment options. As a supporting sector of the economy, this sector plays a critical role in the rural economy. Dairy provides employment prospects for 70 million rural households, largely small and marginal farmers and landless labourers in the country. Millions of rural families rely on dairy farming as a secondary source of income. In India, poultry is another source of food and food security. Aside from food security, it has employed around 2.5 million people. The livestock sector not only offers necessary protein and a nutritious human diet through milk, eggs, and meat, but it also helps to utilise non-edible

agricultural by-products. Livestock also offers raw materials in the form of hides and skins, blood, bone, and fat, among other things. This gives secondary employment to a substantial segment of the population, particularly those living in drought-prone, hilly, tribal, and other distant locations where food production alone may not be sufficient to completely engage them. It has made a significant contribution to the rural economy's survival during epidemic conditions. Animal husbandry practices have proven to be a blessing for supporting the livelihood of the state's landless and marginal farmers in the face of difficult climatic circumstances and national calamities such as drought and flood.

IMPORTANCE OF LIVESTOCK

The livestock plays an important role in human life by providing food and non-food items.

Food: The livestock provides food items such as milk, meat and eggs for human consumption. India is the leading milk producer and buffalo meat exporter in the world. It is producing about 187.7 million tonnes of milk, about 100 billion eggs, 8.89 million tonnes of meat in a year.

Fibre and skins: The livestock also contributes to the production of wool, hair, hides, and pelts. Leather is the most important product which has a very high export potential. India is producing about 41.9 million kg of wool per annum.

Draft: Bullocks are the back bone of Indian agriculture. Despite many advancements made in the use of mechanical power in Indian agricultural operations, the Indian farmers especially in rural and hilly areas (where landholdings are very small) still depend upon bullocks for various agricultural operations. The bullocks are saving a lot of fuel which is a necessary input for using mechanical power like tractors, combine harvesters etc. Pack animals like camels, horses, donkeys, ponies, mules etc. are being extensively used to transport goods in different parts of the country in addition to bullocks. In hilly terrains, mules and ponies serve as the only alternative to transport goods. Similarly, the army has to depend upon these animals to transport various items in the areas of high altitude.

Dung and other animal waste materials: Dung and other animal wastes serve as very good farm yard manure (FYM) and worth several crores of rupees. In addition, it is also used as fuel (bio gas, dung cakes), and for construction as poor man's cement (dung).

Storage: Livestock are considered as "moving banks" because of their potentiality to dispose off during emergencies. They serve as capital and in case of landless agricultural labourers many times, it is the only capital resource they possess. Livestock serve as an asset and in case of emergencies they serve as guarantee for availing loans from the local sources such as money lenders in the villages.

Weed control: Livestock are also used for biological control of bush, plants and weeds, hence increasing the agricultural production and contributing to the economy indirectly.

Cultural: Livestock offer security to the owners and also add to their self esteem especially when they own prized animals such as pedigreed bulls, dogs and high yielding cows/ buffaloes etc.

Companion animals: Dogs are known for their faithfulness and are being used as companions since time immemorial. While the nuclear families are increasing in number and the old parents are forced to lead a solitary life, pet animals like dogs and cats are providing the needed company to the latter thus making them to lead a comfortable life.

THE FARMERS' FRIENDLY ROLE OF LIVESTOCK

The livestock has become a partner of the farmer in his life. The farmers' life is incomplete without livestock. The livestock serve different purposes to enhance the life of the farming community.

Income: There's a saying, "Calf is the fixed deposit to the farmer" as after calf matures, if female, it can contribute to the income of the family by the sale of milk and production of replacement stock. Also, bullocks can be used for transportation purpose. After the productive life is over, it can be slaughtered for meat purpose. Livestock is a source of subsidiary income for many families in India especially the resource poor who maintain few heads of animals. Cows and buffaloes during their lactation period will provide regular income to the livestock farmers through sale of milk. Animals like sheep and goat serve as sources of income during emergencies to meet exigencies like marriages, treatment of sick persons, children education, repair of houses etc. The animals also serve as moving banks and assets which provide economic security to the owners.

Employment: A large number of people in India being less literate and unskilled depend upon agriculture for their livelihoods. But agriculture being seasonal in nature could provide employment for a maximum of 180 days in a year. The landless and small landholders depend upon livestock for utilizing their labour during lean agricultural season.

Food: The livestock products such as milk, meat and eggs are an important source of animal protein to the members of the livestock owners.

Social security: The animals offer social security to the owners in terms of their status in the society. The families especially the landless which own animals are better placed than those who do not. Gifting of animals during marriages is a very common phenomenon in different parts of the country. Rearing of animals is a part of the Indian culture. Animals are used for various socio-religious functions. Cows for housewarming ceremonies; rams, bucks and chicken for sacrifice during festive seasons; bulls and cows are worshipped during various religious functions. Many owners develop attachment to their animals.

Draft: The bullocks are the back bone of Indian agriculture. The farmers especially the marginal and small depend upon bullocks for ploughing, carting and transport of both inputs and outputs.

Dung: In rural areas, dung is used for several purposes which include fuel (dung cakes), fertilizer (farm yard manure), and plastering material (poor man's cement).

LIVE STOCK CONTRIBUTION TO GDP IN INDIA

The Indian economy is highly dependent on livestock. India is the world's fastest expanding country, with the agricultural and animal husbandry sectors employing more than 70% of the population. Agriculture and animal husbandry both contribute equally to national GDP. In addition, India is the world's biggest producer of total milk. A total of 30.5 million people rely on livestock for their survival. Small farm households earn 26 percent of their income from livestock, compared to 24 percent for all rural households. Two-thirds of rural communities rely on livestock for their livelihood. It also employs approximately 18.8% of India's population. India has an abundance of livestock. The livestock sector accounts for 4.11 percent of GDP and 25.6 percent of overall agricultural GDP. Livestock supplies milk and milk products, as well as meat and meat products, and is a major provider of food and food articles, raw materials, and finished products, among other things. Animal husbandry, dairy, and fisheries are all part of the livestock industry. As a result, the cattle sector is extremely important to the country's economy and socioeconomic growth. It also contributes significantly to the rural economy by boosting family incomes and creating gainful employment, notably among landless workers, small and marginal farmers, and women.

LIVESTOCK GLOBALLY

Livestock contributes over 40% of agricultural GDP and provides livelihoods and income to at least 1.3 billion people around the world. Despite their economic importance, cattle receive only a modest portion of agriculture's official development aid. Livestock production may be a major source of income for millions of people in low- and middle-income nations with additional investment.

Table – 1: Live stock population (2019 live stock census)

S. No	Species	Number (in millions)	Ranking in the world population
1	Cattle	192.49	Second
2	Buffaloes	109.85	First
	Total (including Mithun and Yak)	302.79	First
3	Sheep	74.26	Third
4	Goats	148.88	Second
5	Pigs	9.06	-
6	Others	0.91	-
	Total livestock	535.78	

	Total poultry	851.81	Seventh
7	Duck	-	Fifth
8	Chicken	-	
9	Camel	0.25	Tenth

Source: Annual Report 2018-19, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, GOI.

Table- 2: Production of livestock in India 2017-18

Sl. No.	Product	Quantity	Ranking in the world production
1	MILK in million tonnes	176.30	FIRST
2	EGGS in millions Nos.	95,217	THIRD
3	MEAT million tonnes	7.70	NA
4	WOOL in million kgs.	41.50	NA
5	FISH in million metric tonnes	12.61	SECOND

Source: Annual Report 2018-19, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, GOI.

Table- 3: Average Yield Rate for Milk from Breeds, The average yield of milk per day per animal in milk at National level from different species during 2017-18 is given below

Exotic Cows (kg/day)	Cross bred Cows (kg/day)	Indigenous Cows(kg/day)	Non-Descript Cows(kg/day)	Indigenous Buffalo(kg/day)	Non-Descript Buffalo (kg/day)	Goat (kg/day)
11.48	7.61	3.73	2.41	6.19	4.21	0.47

Source: Annual Report 2018-19, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, GOI.

Strategic significance is also highlighted by the Economic Survey 2021. "Livestock sector is Its an important sub-sector of agriculture in the Indian economy. It grew at CAGR of 8.24 per cent during 2014-15 to 2018-19. As per the estimates of National Accounts Statistics (NAS) 2020, the contribution of livestock in total agriculture and allied sector GVA (at constant prices) has increased from 24.32 per cent (2014-15) to 28.63 per cent (2018-19). Livestock sector contributed 4.2 per cent of total GVA in 2018-19."

CONTRIBUTION TO THE ECONOMY

Although livestock's share of agricultural GDP is generally higher in high-income countries than in low- and middle-income countries, it is expected to grow in low- and middle-income countries. While this growth will generally benefit livestock producers, they face risks. One is that small- and medium-scale producers will be confined to local and informal markets while commercial producers benefit most from the growth in larger, more integrated markets. Another risk is that, depending on a given pathway of

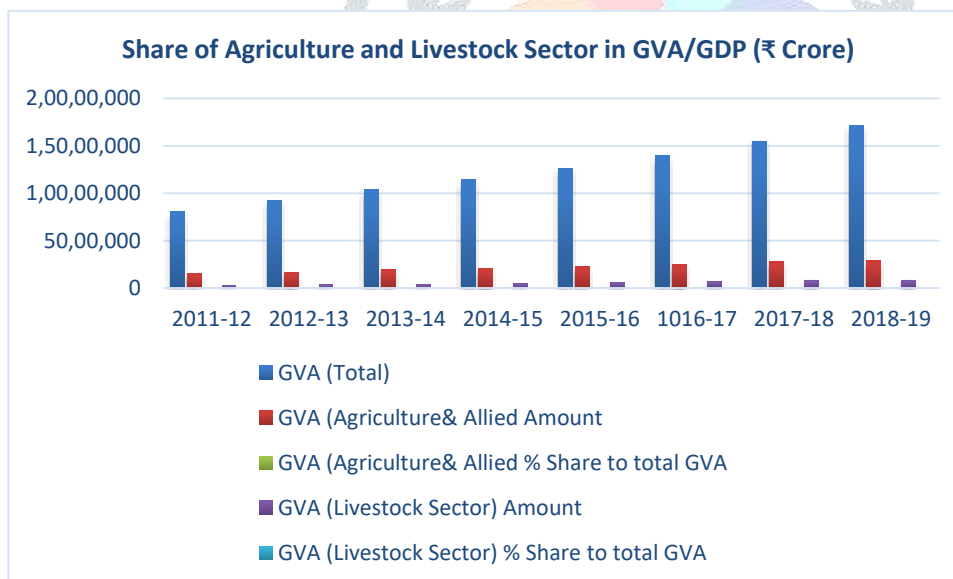
livestock development, environmental hazards and resource degradation may occur. While the private sector can capitalize by investing in this livestock growth, public investments are needed in market infrastructure and public-private partnership mechanisms.

Table -4: Share of Agriculture and Livestock Sector in GVA/GDP (₹ Crore)

At Current Prices					
Year	GVA (Total)	GVA (Agriculture & Allied)		GVA (Livestock Sector)	
		Amount	% Share to total GVA	Amount	% Share to total GVA
2011-12	8,106,946	1,501,947	18.5	327,334	4.0
2012-13	9,202,692	1,675,107	18.2	368,823	4.0
2013-14	10,363,153	1,926,372	18.6	422,733	4.1
2014-15	11,504,279	2,093,612	18.2	510,411	4.4
2015-16	12,574,499	2,227,533	17.7	582,410	4.6
2016-17	13,965,200	2,518,662	18.0	672,829	4.8
2017-18	15,513,122	2,796,908	18.0	785,180	5.1
2018-19	17,139,962	2,922,846	17.1	871,884	5.1

Source: National Accounts Statistics-2015, Central Statistical Organisation, GoI

The above table reveals that of agriculture and allied sector from 2011-12 to 2018-19 total share GVA increases from Rs. 8,106,946 to Rs. 17,139,962 in that Agriculture and Allied contribution Rs. 1,501,947 (18.5%) and increases to Rs. 2,922,846 GVA on an average 18% and live stock contribution increases from Rs. 327,334 to Rs. 871,884 Share of GVA increase from 4 % to 5.1%.



The above diagram shows that 2011-12 to 2018-19, the contribution agriculture and livestock sector to the GDP.

LIVESTOCK INVESTMENTS

National public-sector livestock investments are low in most low- and middle-income countries. Public resources commensurate with the livestock sector's contribution to economic growth should be invested to ensure increased productivity and participation by smallholders so they can capitalize on new

market-driven opportunities. Evidence should be used to prioritize public agricultural investments with the highest potential for rural growth and returns to investment.

MARKET AND TRADE OPPORTUNITIES

Policies should facilitate trade in underexploited regional markets by removing non-tariff trade barriers, harmonizing standards and investing in trade infrastructure. Domestic livestock markets are generally much larger than export markets in low- and middle-income countries, with 90% of livestock products produced and consumed in the same country or region. Policies should respond to this domestic demand and provide incentives for increased value addition and supply efficiency among locally processed livestock products, with priority to traditionally consumed products. Export-oriented policies that require large infrastructure investment should be weighed against realistic assessments of the potential benefits, including an understanding of the constraints imposed by sanitary and phytosanitary regulations and product quality standards.

SMALLHOLDERS AND LIVELIHOODS

Given the importance of smallholders in supplying low- and middle-income countries with livestock products, increased smallholder productivity and production is essential to meet the growing demand for these products. This will require policy and infrastructure support to help smallholder's access critical inputs and services (for example, animal breeds and feeds and veterinary services). Approaches are also needed to help small- and medium-scale farmers participate in livestock product markets in ways that allow them to comply with increasingly stringent market standards, such as via innovative business-oriented collective action or contractual approaches to gain from economies of scale and joint capacity development.

Many poor households rely on livestock assets for insurance and savings and so tend to keep surplus livestock, which may have negative effects on the environment. Policies should provide alternative insurance or financing options, such as a weather-based insurance index and reliable savings plans, to allow livestock keepers to manage their animals with a more market-driven orientation.

EMPLOYMENT AND INCOME

The livestock sector should be integrated into national rural development policies and programs. It has growing potential to create employment for the youth and women, not only in livestock keeping but also in processing livestock products, producing and selling livestock feeds and providing livestock information services.

Sustainable development policies in dryland settings should balance the goals of improved livelihoods of livestock keepers and environmental conservation. While policies should account for the fragility of many pastoral environments and support sustainable livestock keeping, they should also help diversify

enterprises beyond livestock. New public-private partnerships should also be supported to provide veterinary services in remote pastoral settings.

Table-5: Value of Output from Livestock sector (in ₹ Crore)

At Current Prices			
Item	2011-12	2012-13	2013-14
1 Milk Group	3,24,895	3,68,997	4,07,396
2 Meat Group	96,287	1,14,402	1,32,360
2.1 Meat	88,429	1,05,072	1,22,147
2.1.1 Beef	11,715	14,252	15,053
2.1.2 Mutton	32,695	38,651	43,232
2,1,3 Pork	4,485	4,771	5,596
2.1.4 Poultry Meat	39,535	47,398	58,266
2.2 Meat Products	3,345	3,948	4,385
2.3 By-Products	4,512	5,383	5,828
2.3.1 Hides	2,087	2,519	2,639
2.3.2 Skins	1,097	1,291	1,447
2.3.3 Other By Products	1,328	1,573	1,741
3 Eggs	16,470	19,352	22,423
4 Wool & hair	512	581	569
5 Dung	32,754	36,936	41,443
6 Silk Worm Cocoons and Honey	4,331	5,227	6,707
7 Increment in Stock	9,854	11,609	12,964
Value of Output from Livestock Sector	4,85,103	5,57,103	6,23,861

Source : National Accounts Statistics-2015, Central Statistical Organisation, GoI

As per above table output of value of output of live stock sector increases from Rs. 4,85,103 crores to Rs. 6,23,861. Milk group, meat group and by products out increases.

Livestock Sector Contribution:

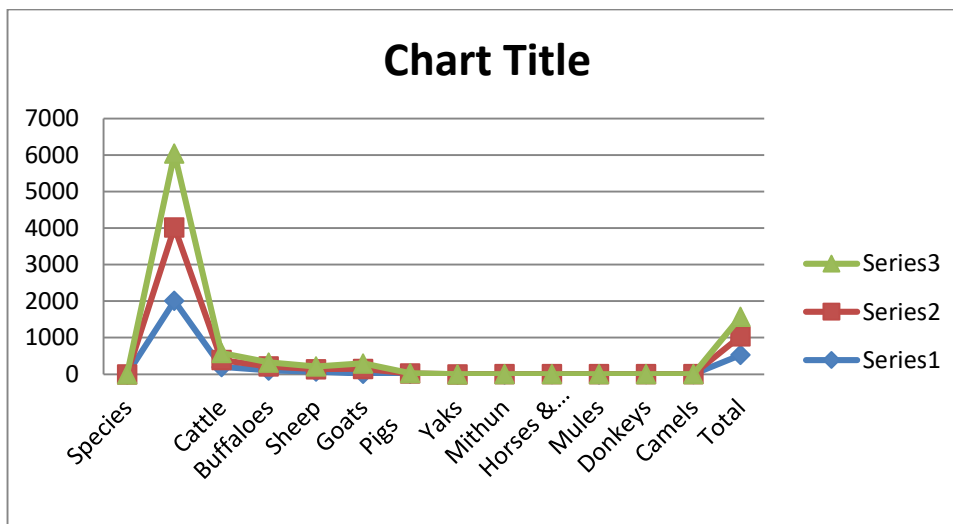
India is First in the total buffalo and cattle population in the world, second in the total population of goats, third in the total population of sheep (72 million), Fourth in the population of ducks and chicken, Ninth in camel population in the world. (Source: GOI, 20th livestock census)

Table-6: Livestock Population – Major Species During 2007 to 2019

Species	Population in millions		
	2007	2012	2019
Cattle	199.08	190.9	192.49
Buffaloes	105.34	108.34	109.85
Sheep	71.56	65.07	74.26
Goats	14.054	135.17	148.88

Pigs	11.13	10.29	9.06
Yaks	0.08	0.08	0.06
Mithun	0.26	0.30	0.38
Horses & Ponies	0.61	0.63	0.3
Mules	0.14	0.20	0.08
Donkeys	0.44	0.32	0.12
Camels	0.52	0.40	0.25
Total	529.70	512.06	535.78

Source: Basic Animal Husbandry Statistics, DAHD&F, GoI



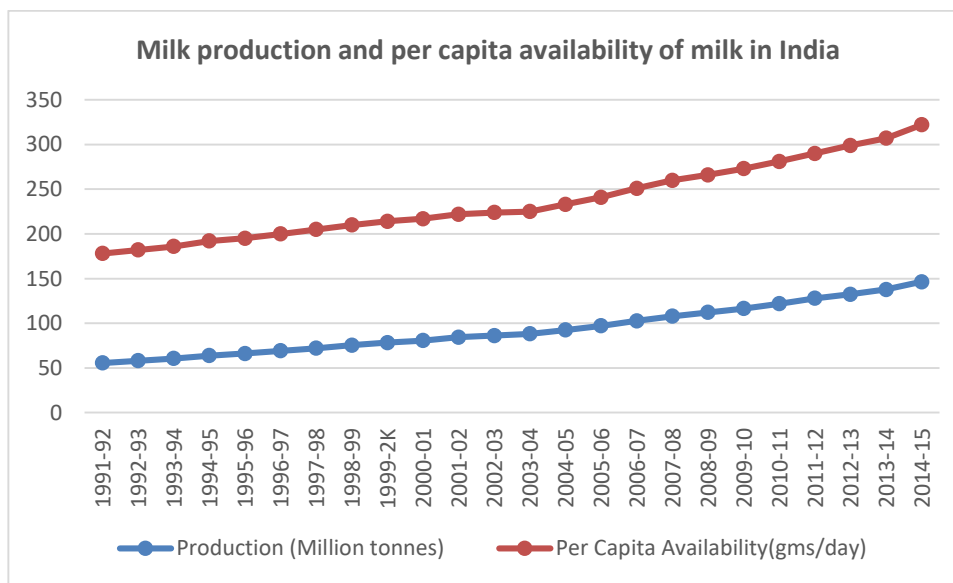
The above table reveals that live stock population is decreasing from 2007 to 2019. Horses & ponies, are decreased 0.61 to 0.30 (30%) declined, mules, donkeys, camels also declined. Sheep, and goat population only slight improvement.

Table-7: Milk production and per capita availability of milk in India

Year	Production (Million tonnes)	Per Capita Availability(gms/day)
1991-92	55.6	178
1992-93	58.0	182
1993-94	60.6	186
1994-95	63.8	192
1995-96	66.2	195
1996-97	69.1	200
1997-98	72.1	205
1998-99	75.4	210
1999-2K	78.3	214
2000-01	80.6	217
2001-02	84.4	222

2002-03	86.2	224
2003-04	88.1	225
2004-05	92.5	233
2005-06	97.1	241
2006-07	102.6	251
2007-08	107.9	260
2008-09	112.2	266
2009-10	116.4	273
2010-11	121.8	281
2011-12	127.9	290
2012-13	132.4	299
2013-14	137.7	307
2014-15	146.3	322

Source: Basic Animal Husbandry Statistics, DAHD&F, GoI

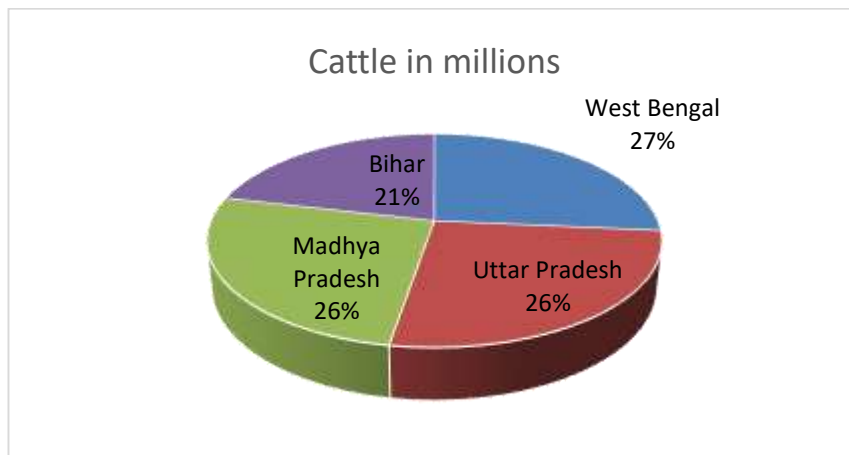


Since 1991-92 to 2014-15 the above graph shows that milk production and per capita availability gradually increasing

Table-8: West Bengal had the highest cattle population across India, at about 19 million in 2019. Indian states with the highest number of cattle in 2019 (in millions)

Characteristic	Cattle in millions
West Bengal	19
Uttar Pradesh	18.8
Madhya Pradesh	18.7
Bihar	15.3

Source: Basic Animal Husbandry Statistics, DAHD&F, GoI



The above picture shows that west bengal is the highest size cattle population 27%, Uttar pradesh and Madhya pradesh 26% Bihar 21%

Cattle In 2019, the total livestock population is 535.78 million; **cattle (192.90 million)** is the largest animal group in the country followed by goats (148.88 million), buffaloes (109.85 million), sheep (74.26 million) and pigs (9.06 million).18-Oct-2019

The Government has released the Key Results (Provisional) of 20th Livestock Census, 2019. The comparison of species-wise population of livestock and poultry between the last two Livestock Census periods is given in the following table:

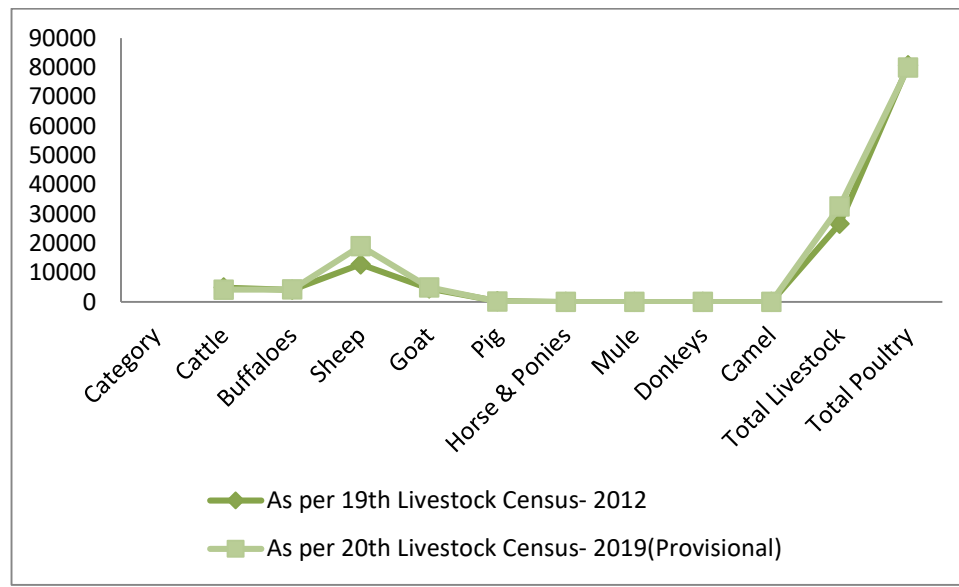
As per the Key Results (Provisional) of 20th Livestock Census-2019, the Cattle population has increased to 192.52 million in 2019 from 190.90 million in 2012. The detailed State-wise Cattle population is annexed.

The online data collection method adopted during 20th Livestock Census provided provisions for various online checks of data and also allowed the field officials to verify the data online. Further provisions were also provided for online monitoring of field work through various monitoring reports. The comparison of species-wise population of livestock and poultry in respect of Telangana between the last two Livestock Census periods is given below.

Table- 10: Telangana-Livestock & Poultry Population (in thousands)

Category	As per 19th Livestock Census- 2012	As per 20th Livestock Census-2019(Provisional)
Cattle	4880	4218
Buffaloes	4160	4226
Sheep	12836	19063
Goat	4576	4935
Pig	237	178
Horse & Ponies	3	4
Mule	0.54	0.09
Donkeys	3	2
Camel	0.15	0.07
Total Livestock	26696	32626
Total Poultry	80751	79999

Source: Livestock Census-Ministry of Fisheries, Animal Husbandry & Dairying



The graph shows that in telangana livestock and poultry population 2012 and 2019 almost similar.

CONCLUSION OF THE STUDY:

The Economic Survey 2021 also emphasizes strategic importance. "In the Indian economy, the livestock sector is an important sub-sector of agriculture. From 2014-15 to 2018-19, it expanded at an annualized rate of 8.24%. According to the National Accounts Statistics (NAS) 2020 forecasts, livestock's contribution to total agriculture and allied sector GVA (at constant prices) increased from 24.32 percent in 2014-15 to 28.63 percent in 2020. (2018-19). In 2018-19, the livestock sector provided 4.2 percent of total GVA."

The livestock sector in India accounts for a substantial portion of the world's livestock resources. The cattle sector supports the country's national economy as well as its socioeconomic development. The livestock sector is performing well in terms of production, value addition, and export of dairy, fishery, wool, poultry, and other products, in addition to offering significant potential and excellent contribution in the agricultural sector throughout the last years. Apart from its performance, there are several risks that we must examine in order to take advantage of global market chances.

India is the world's leading producer of cattle and buffaloes. India has 3,05,500 thousand cattle and buffaloes in 2020, accounting for 33.38 percent of the world's cattle and buffaloes

REFERENCES:

1. Annual Report 2018-19, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, GOI.
2. Annual Report 2018-19, National Dairy Development board
3. Pratap S Birthal., and P Parthasarathy Rao, Economic Contributions of the Livestock Subsector in India
4. Birthal, P.S. and Singh, M.K. 1995. Structure of rural income inequality: a study in western Uttar Pradesh. Indian Journal of Agricultural Economics 50(2):168-175.

5. Kelley, T.G. and Parthasarathy Rao, P. 1995. Availability and requirement of different sources of livestock feed in India,
6. Devendra C. and Gardiner P., Global Agenda for Livestock Research: proceedings of the consultation for the South Asia Region, 6-8 Jun 1995 ICRISAT Asia Center, Patancheru, India.
7. Kumar P. and Joshi, P.K. 1999. Socio economic factors contributing to nutritional security of rural households, National Academy of Agricultural Science and National Institute of Nutrition, Hyderabad.

