

TREND OF ANIMAL HUSBANDRY IN INDIA AND THEIR CONTRIBUTION TO NATIONAL ECONOMY.

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Abstract: Animal Husbandry sector plays a significant role in the welfare of India's rural population as it employs a major section of the countries labour force and also provides a large share of draft power being used to cultivate crop land. India's livestock sector is one of the largest in the world with a holding of 11.6% of world livestock composition. Contribution of livestock sectors to the national economy in terms of Gross Domestic Product (GDP) is 4.36. Agriculture and allied sector contributed about 17.39 % to the total GDP. Out of the total GDP, livestock sector contributed about 4.36 % during 2014-15. The livestock sector is an important source of foreign exchange too and is performing well in the manner of production, value addition and export of dairy, fishery, wool, poultry and other products.

Keywords: Livestock, Population, Production of livestock.

Introduction:

In Indian civilization peoples has been utilizing different animal species for a variety of purposes viz. production of milk, meat, wool, egg and leather. Apart from these, various animal species are also used for draught power, companionship, entertainment, research experimentation, sports, security etc. Livestock sector plays a vital role in rural economy and livelihood. As per report of the working group on animal husbandry and dairying- 11th five year plan: 2007-12, the livestock sector employs eight percent of the countries labour force, including many small and marginal farmers, women and landless agricultural workers. Milk production alone involves more than 30 million small producers, each raising one or two cows or buffaloes. The organic fertilizer produced by the sector is an important input to crop production, and dung from livestock is widely used as fuel in rural areas. Livestock also serves as an insurance substitute, especially for poor rural households.

Data source:The present paper is based on extensive survey of secondary data from various published research articles, proceedings of conferences, annual reports and data published by Department of Animal Husbandry Dairying & Fisheries (DAHDF) from time to time.

Statistical Data analysis:

The collected Data is tabulated in order to satisfy the objectives of the study. Considering the objectives of the study some statistical technique are also used for the data analysis. Such as SD, CV, CGR, SGR etc.

Objectives:

1. To study the composition of livestock in India.
2. To analyses the trend of livestock production in India.
3. To study the scenario of Indian livestock in Global market.

Livestock population in India:

As per 19th Livestock census of India,(2012) India's livestock sector is one of the largest in the world with a holding of 11.6% of world livestock population which consists buffaloes (57.83%), cattle (15.06%), sheep (7.14%), goats (17.93%), camel (2.18%), equine (1.3%), pigs (1.2%), chickens (4.72%) and ducks (1.94%). India has massive livestock population of 512 million nos. which mainly includes cattle, buffaloes, goats, sheep and pigs. Contribution of cattle, buffalo, sheep, goat, pig and others in total livestock population is 37.28, 21.23, 12.71, 26.4, 2.01 and 0.5%, respectively. Livestock population in India has increased substantially in Gujarat (15.36%), Uttar Pradesh (14.01%), Assam (10.77%), Punjab (9.57%), Bihar (8.56%), Sikkim (7.96%), Meghalaya (7.41%) and Chhattisgarh (4.34%). Total poultry population in India is 729.21 million, which includes 692.65, 23.54 and 13.02 million chickens, duck and turkeys & other poultry, respectively. It is observed that growth trend in total poultry population is quite more as compared to total livestock population. Table 1 shows detailed livestock and poultry population since 1st livestock census to 12th livestock census of India.

Table No.1

Census wise livestock population in India (in Million)

speci es	Cattle	buffalo	Sheep	Goat	Hors& Ponies	Camels	Pig	Mule	Donkey	Yak	Total livestock
1951	155.3 (53.18)	43.4 (14.82)	39.1 (13.35)	47.2 (16.12)	1.5 (0.51)	0.6 (0.20)	4.4 (1.50)	0.06 (0.02)	1.3 (0.44)	NA (0)	292.8 (100)

1956	158.7 (51.76)	44.9 (14.64)	39.3 (12.81)	55.4 (18.07)	1.5 (0.49)	0.8 (0.6)	4.9 (1.60)	0.04 (0.13)	1.1 (0.36)	NA (0)	306.6 (100)
1961	175.6 (52.36)	51.2 (15.27)	40.2 (11.99)	60.9 (18.16)	1.3 (0.39)	0.9 (0.27)	5.2 (1.55)	0.05 (0.02)	1.1 (0.33)	0.02 (0.01)	335.4 (100)
1966	176.2 (51.20)	53 (15.40)	42.4 (12.32)	64.6 (18.77)	1.1 (0.32)	1 (0.29)	5 (1.45)	0.08 (0.02)	1.1 (0.32)	0.03 (0.01)	34.1 (100)
1972	178.3 (50.42)	57.4 (16.23)	40 (11.31)	67.5 (19.02)	0.9 (0.25)	1.1 (0.31)	6.9 (1.95)	0.08 (0.02)	1 (0.28)	0.04 (0.01)	353.6 (100)
1977	180 (48.78)	62 (16.80)	41 (12.09)	75.6 (20.49)	0.9 (0.24)	1.1 (0.30)	7.6 (2.06)	0.09 (0.02)	1 (0.27)	0.13 (0.03)	369 (100)
1982	192.45 (45.87)	69.78 (16.63)	48.76 (11.62)	95.25 (22.70)	0.9 (0.21)	1.08 (0.26)	10.07 (2.39)	0.13 (0.03)	1.02 (0.24)	0.13 (0.03)	419.59 (100)
1987	199.69 (44.84)	75.97 (17.06)	45.7 (10.26)	110.21 (24.75)	0.8 (0.17)	1 (0.22)	10.63 (2.38)	0.17 (0.03)	0.96 (0.22)	0.04 (0.01)	445.29 (100)
1992	204.58 (43.45)	84.21 (17.88)	50.78 (10.78)	115.28 (24.48)	0.82 (0.17)	1.03 (0.22)	12.79 (2.72)	0.19 (0.04)	0.97 (0.20)	0.06 (0.01)	470.86 (100)
1997	198.88 (40.97)	89.92 (18.53)	57.49 (11.84)	122.72 (25.28)	0.83 (0.17)	0.91 (0.19)	13.29 (2.74)	0.22 (0.05)	0.88 (0.18)	0.06 (0.01)	485.39 (100)
2003	185.18 (38.18)	97.92 (20.18)	61.47 (12.67)	124.36 (25.64)	0.75 (0.15)	0.63 (0.13)	13.52 (2.79)	0.18 (0.03)	0.65 (0.13)	0.06 (0.01)	485 (100)
2007	199.08 (37.58)	105.34 (19.89)	71.56 (13.51)	140.54 (26.53)	0.61 (0.12)	0.52 (0.10)	11.13 (2.10)	0.14 (0.03)	0.44 (0.08)	0.08 (0.02)	529.7 (100)
2012	190.9 (37.28)	108.7 (21.23)	65.07 (12.70)	135.17 (26.40)	0.63 (0.12)	0.4 (0.08)	10.29 (2.01)	0.2 (0.04)	0.32 (0.06)	0.08 (0.01)	512.03 (100)
CGR	1.84	8.54	5.21	9.91	-6.92	-3.52	10.11	14.10	-8.35	*	9.36

Source- 19th Livestock census of India. (2012)

Note – Figure in parenthesis () show percentage to Total livestock

Table indicates different types of livestock species in India during 1951 to 2012 .the percentage and CGR of each of the livestock population has been analyzed in the table.it was observed that the percentage of cattle have decreased from 53.18% to 37.28% during 1951 to 2012. It annual CGR is estimated at 1.84%. The percentage of buffalo have increased from 14.82% to 21.23% during the same period under the study.it CGR is 8.54%. It reflect the population of buffalos bovine breed increased rapidly as compare to cows. Because, buffalo's species are more productive milking & riches fats animal so, animal holder mostly preferred to reared buffalos than cows. On the other hand the percentage of sheep has decreased from 13.35% to 12.70% during the same period .CGR of sheep has 5.21% .the increasing trend seen about Goat population it has increased from 16.12% to 26.40% & their CGR observed 9.91% .The pig seen constantly growth in each census .its share reduce from 1.50% to 2.01% .it's CGR is 10.11%. The table indicate that the increasing trend of ovine animal of Goat has been more than other ovine animals like sheep, pig .The Horse & Ponies share decreasing from 0.51% to 0.12% & the share of camel also reduce from 2.20% to 0.08% .The horse, Ponies and camel has been nominal share. CGR of Horse, Ponies, camel has decreased by -6.92% & -3.52% respectively. The percentage of Mules has also nominal it 0.20% in 1951 and 0.04% in 2012. As well as the share of Donkey & Yak observed as few share .their share decreasing from 0.44% to 0.06% & 0 to 0.11% respectively. CGR of Donkey has decreased by -8.35%

Table indicate the CGR of each of the livestock species in India. It was show that among the bovine species the CGR of buffalo population is highest .it is 8.54%. On the other hand among the ovine animal population the CGR of goat is highest & among the equine animal the CGR of Donkey highest. It is observed from that analysis the bovine and ovine animals in India represent the positive CGR & the Group of equine animal represent the negative CGR. The farmers opinioned that the “Goat is the Cow of poor peoples” so, they were rearing more Goats than sheep .Hence, large numbers of animal holders preferred to rearing milking bovine animals rather than ovine and equine animals.

Livestock production

India has a competitive advantage in production of different livestock products. As per report of the working group on animal husbandry & dairying- 12th five year plan: 2012-17, demand for animal food products is responsive to income changes, and is expected to increase in future. By the end of 12th Plan, demand for milk is expected to increase to 141 million tons and for meat, eggs and fish together to 15.8 million tons. Global market for animal products is expanding fast, and it is an opportunity for India to improve its participation in global market. During the year 2012-13, livestock sector produced 132.4 million tons of milk, 69.7 billion nos. of eggs, 46.1 million kg of wool and 5.9 million tons of meat.

- **Milk Production**

It is also known as Dairy production. It is one of the most valuable, nutritional food supplied by Domestic mammal like cow, buffalo, Goat to the human. Dairy business provides employment as well as nutrients. Milk and milk products provide protein, calcium, phosphorus, magnesium, potassium, sodium, sulfur, vitamins to human body. Mother's milk is the best food for small children's but when it is not available cows or Goats milk may be used as supplementary. Milk is a unique fluid not merely because of its chemical composition but also it provides the material for a wide variety of foods like cream, butter, cheeses, paneer, casein, milk powder, khava, kunda & other dairy products.

India continues to be the largest producer of milk in the world. The average annual milk yield of Indian cattle is 1172 kg which is only about 50% of the Global average. Milk production has been increasing significantly from 127.9 million tons at the end of the 11th five year plan. In India nearly 36% of the milk production is contributed by buffaloes, 26% by Cows. According to the Integrated sample survey 2015-16 the average milk of exotic, crossbred, indigenous, & non-descript cows has been estimated 10.85 Kg., 7.40Kg, 3.56Kg, 2.29% kg respectively per animal per day. The average yield of milk from indigenous & non-descript buffalo are estimated to be as 5.86 kg, & 4.04kg per animal per day respectively. The first five highest milk producing states are UP (16.97%), Rajasthan (11.89%), Gujarat (7.89%), MP (7.81%), Andhra Pradesh (7%) and the lowest milk production found in the state of Lakshadweep, Dadra & Nagar Haveli, Div. & Daman, Adman & Nikobar Island, Chandigarh, Pondicherry, Nagaland. The significant growth in milk production in India was due to 'Operation Flood' which emphasized improved breeding technology, germ plasma, dairy development. Table no 2 shows milk production and per capita availability of milk during the period from 2007-08 to 2015-16.

Table No .2: Milk production & Per capita availability in India

Sr. No	Year	Milk Production (Million ton)	Trend (%)	Per capita milk availability(gm./per day)	Trend (%)
1	2007-08	107.9	100.00	260	100.00
2	2008-09	112.1	103.89	266	102.31
3	2009-10	116.4	107.88	273	105
4	2010-11	121.8	112.88	281	108.08
5	2011-12	127.9	118.54	290	111.54
6	2012-13	132	122.34	299	115
7	2013-14	137.7	127.62	307	118.8
8	2014-15	146.3	135.59	322	123.85
9	2015-16	160.4	148.66	337	129.62
	Average	129.17	-	292.78	
	CGR (%)	4.48	-	2.93	

Source-AHD 2015

As per above table the milk production in India has increased to 148.66 percent in 2015-16 as compared to 2007-08. The per capita availability of milk has increased to 129.62 per cent during the same period. During 2007-08 to 2015-16 milk production showed the compound growth rate is 4.48 per cent and per capita availability of milk is 2.93 per cent during the same period. Per capita availability of milk has been adversely affected by rapid growing population of India. As a result it showed only a considerably growth of 2.93%. The average growth of milk production in India during 2007-08 to 2015-16 was 129.17 million ton while the average growth of per day per capita milk availability was 292.78 grams in the same period.

- **Meat production:**

Meat production has registered a healthy growth from 2.3 to 5.5 million ton at the end of the 11th five year plan. The total meat production has increased from 2.24 million tons during 2015-16. Nearly 47.86% of the meat production is contributed by poultry & Buffalo, Goat, Pig, Sheep and Cattle

contribute 23%, 13%, 6%, 7% and 5% of meat production respectively. The 1st five highest meat producing state are UP (20.2%), west Bengal (9.8%), Maharashtra (9.6%) of, Andhra Pradesh (8.1%), and Tamil Nadu (7.8%). Andhra Pradesh, Maharashtra, Tamil Nadu contribute about half of the total poultry meat .UP produce about one third of the buffalo meat followed by Maharashtra, Andhra Pradesh. Andhra Pradesh, west Bengal, Maharashtra, Bihar, Orissa, & Rajasthan, are important state for small ruminants meat. Out of the total meat produced in India, 54 per cent is from mutton and chevon, 26 per cent from beef, 13 per cent from chicken and 7 per cent, from pork. The availability of meat in India is only about 15gm per person per day but the ICMR recommendation of 30gm per person per day. Large number of India's population is vegetarian they don't like non-veg so, occurred low level of per capita availability in India. Table no. 3 represent the meat production in India.

Table No 3: Meat production in India (million Tons)

Sr. No	Year	Meat Production (Million ton)	Trend (%)
1	2007-08	4	100
2	2008-09	4.2	105
3	2009-10	4.5	112.5
4	2010-11	4.9	122.5
5	2011-12	5.5	137.5
6	2012-13	5.9	147.5
7	2013-14	6.2	155
8	2014-15	6.7	167.5
9	2015-16	7	175
Average		5.43	
CGR		6.35	
CV		34.43	

Source-AHD 2015

The table shows that increasing trend of meat production in India from 4 million ton to 7 million ton since 2007-08 to 2015-16. The meat production in India has increased to 175 percent in 2015-16 as compared to 2007-08. The average growth of meat production during same period was 5.43 million ton .annual compound growth rate was 6.35%per annum .and coefficient variation showed 34.43% per year. Thus the total output value from meat production also higher than other livestock production in India.

• **Wool production:**

In India, total wool production has 44.7 million kg in 11th five year plan. Wool production in the beginning of 12th five year plan during 2012-13 was 46.05 million kg but it declined to 43.6 million kg in 2015-16. It means wool production has shown negative growth during 2015-16. Nearly 71% of the production of wool is contributed by Ram while Ewe and Lamb contributes 25% and 4%, respectively. Wool production is maximum in the state Rajasthan (30.78%) followed by Karnataka (18.80%), Jammu & Kashmir (17.75%), Telangana (10.46%) and Gujarat (5.23%).

Table No 4: Wool production in India (million Kg)

Sr. No	Year	Wool Production (Million kg)	SGR (%)
1	2007-08	43.09	--
2	2008-09	42.8	-0.67
3	2009-10	43.1	0.70
4	2010-11	43	-0.23
5	2011-12	44.7	3.95
6	2012-13	46.1	3.13
7	2013-14	47.9	3.90
8	2014-15	48.1	0.41
9	2015-16	43.6	-10.60

Source-AHD 2015

The growth rate of wool production was declined – 0.67 % in 2008-09. After the 2008-09 the growth rate of wool production was positively increased by 0.70% in 2009-10 but next year means in 2010-11 it declined -0.23%. Since 2011-12 to 2013-14 the growth rate was positively increased but in 2014-15 the growth of wool production was nominally increased by 0.41. Once again it reduced in 2015-16 around -10.60%. Table revealed the fluctuate growth rate of wool production in India due to lack of proper management as well as lack commercial view of animal cherisher.

Trade in livestock sector at global level.

According to FAO statistics 1.06 % increase in world milk production from 808 million ton in 2015 to 817 million ton in 2016. Which roughly two-third is concentrated in the developed countries. About 86% share of cow milk, 10.3% is buffalo milk the as world production comprise. Mostly confined trade of milk to the south Asian countries out of the total milk production in the world. Processed milk product such as skimmed milk powder, butter, ghee, cheese confined mostly trade. More processed dairy product is concentrated in the EU, US, India, Pakistan, China. Over 80 per cent of milk consumed in developing countries is handled by informal market traders with inadequate regulation. India is the largest producer of dairy products in the world. Many countries are large produce and consume milk production. In 2016 export around 72339 million ton and import around 68406 million ton milk in the world. The world's largest exporter of dairy products is New Zealand and dairy products are the largest export earner for the country. Japan is the world's largest importer of dairy products. Since 2007 the demand for the dairy products grew especially in Asian region from 64 kg per capita in 2007 to 84 kg per capita in 2016, the Asian consumers presented almost a half of the world demand for milk and milk products.

India is a net exporter of buffalo meat. In the last few years, exports have grown to record levels. India is third country after Brazil and U.S. in the world to export more than 1 million tons of bovine meat annually. Increased exports are primarily the result of lower cost of Indian buffalo meat. In 2015 buffalo meat exports reached to 1.15 million tons as compared to 1.02 million tons in 2014. India is still a small player in global market of livestock trade, though India ranks in the top tier of producers of different livestock commodities. India does not even contribute 1 per cent to the world export of the livestock products, except for bovine meat and eggs. India produced 31.7 million Kg. of wool during 2016.

Conclusion: Indian livestock industry makes up for a significant amount of world's livestock resources. Both the national economy as well as socio-economic growth of country is assisted by the livestock sector. Besides offering great potential and outstanding contribution in agricultural sector over the past years, livestock sector is performing well in the manner of production, value addition and export of dairy, fishery, wool, poultry and other products.

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