Livestock production, marketing and future prospects in India

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Abstract. Livestock husbandry has always been the backbone of rural economy in India. It provides the income, employment, nutrition and manures for the poor under privileged farming community of rural India. Intensification and scaling up of livestock size is increasing and traditional form of production system with limited capital and labours tends to move up for achieving economic viability or profitability and avoiding land and water stress or crisis generated through extra demand for food crops, fodder and feed crops. The present study tries to analyze the mechanism of livestock production system, marketing structure and future implications of current socio-political decisions in India. The results of the study show that after launching of operation flood program the livestock sector grown at tremendous pace and the country became largest producer of milk and livestock population in the world. Initially cattle population increased but during 1992-2012 it declined from 206 to 109 millions. Buffalo increased 43 million in 1951 to 108 million in 2012. India is the largest producer of milk with a record of 176.30 million tonnes during 2017-18 which grew up from 56.60 million tonnes in1991-92.marketing of livestock ant their products as meat and milk has been still traditional and controlled by unorganised sectors like village traders, itinerant traders, producer sellers and some commission agents. Rural markets and farm gates in villages are mostly transaction place for live animal trades. Meat industries located in peri-urban areas exceptionally follow some organised channels.80 percent milk trade is performed by unorganised network consisting of producer sellers, itinerant village traders and sometimes consumer himself. Cooperative societies and corporate private enterprises undertake about 20 percent dairy trade. Domestic marketing of meat trade is also undertaken by unorganised sectors especially particular a Muslim community. Poultry and mutton trade has exception which is also undertaken by non Muslim in urban areas. Meat export chiefly buffalo beef is increasing after globalization of economy and agricultural trade This sector presents huge potentials of growth as the population base of the country is expanding and creating huge demand and employment opportunities but government need to established the proper marketing channels, regulatory bodies and standard pricing system.

Keywords: backbone, nutrition, Intensification, demand, expanding.

1. Introduction

Livestock husbandry is one of very important agro economic activity since antiquity. The first agricultural revolution started with combined domestication of animals and plants in 8000 B.C. It has been always as a complimentary and supplementary to cropping system in different agronomic realms of the world. Nomadic herding, livestock ranching, mixed farming, dairy farming, commercial grazing and poultry farming are very common which emerged in response to spatial variation of geographical

attributes over terrestrial space of the earth (Grigg, D. 1969). Livestock system occupy about 30 percent of planet's ice free terrestrial area (Steinfeld et.al 2006).Approximately one fourth world population are involved in various operations of this giant sub system of agriculture, providing direct livelihood to about 600 million poor small holder farmers in developing world. It is one of important component of food security both in form of availability and nutrition security (Rosegrant et.al.2009, Ali, M.2009, Taneja, 2008,Rama, et.al,2005) . Livestock economy in developing countries moving in transitional stage , shifting from subsistence farming to commercial one and from traditional mode of production to industrial and processing one through the process of intensification, scaling up and modernization after starting of globalization of economy and trade from last decade of 20th century (Davendra,2004 &Khan,N.et.al 2011). Demographic transformation and structural changes in terms of rural urban divide, socio economic modification and transformation as well as increasing awareness for health and nutrition intake in developing countries resulted in a broad gap of demand for livestock derived products between developed and developing countries. It is estimated and projected by Food and Agriculture organization (FAO) and Steinfled, et.al during 2006 that rate of growth in demand of milk and meat per capita would be rather manifold higher in developing countries as compared to developed countries. Further the geographical condition of tropical climate, both wet and dry, is the competitive advantage for developing countries in Latin America, Africa and Asia to produce or rear animals with less fate producing lean free meat which are greatly demanded in developed countries on increasing health consciousness (Khan, et.al.2011 & Ray, N.1999) The temperate area ruminants, both big and small, are fattier due to adaption of animals with cold climate. Increasing land and water resource competition for production of feed grains and fodder is another new emerging crisis as the area under food crops has been declining at a considerable land. Food security in many countries is at stake. Livestock system is viewed as tools of poverty alleviation, employment and income generation and behave as an insurance agency and risk coverage agency in the time of failures of cropping system or during agricultural off season when no work is found for household members (Khan,N. 2011,Leonard, 2006,Picca,calammra, 2008,Rangnekar, D,V. 2006 &Shaheen, A.et.al. 2006 , Khan, 2018). Integrated livestock farming system or mixed farming, the characteristics of farming system in tropical monsoon countries is viewed as sustainable farming system in which by-products from livestock i.e. dung, manures and crops 'residues from cropping system are reutilized saving production cost. Social security, economic empowerment especially for women and sustainability of soil and water and economic viability of farming system would be enhanced. (Okeato, 1977, Jost, 2004, Leeuw, D.1977 &Khan, N. 2018)

Moreover, the livestock production system experienced various form of dynamism in response to socio economic, cultural and geographical entities in distinct region of world (Steinfeld, 1999, & Khan, N, et.al, 2011). Intensification and scaling up of livestock size is increasing and traditional form of production system with limited capital and labours tends to move up for achieving economic viability or profitability and avoiding land and water stress or crisis generated through extra demand for food crops, fodder and feed crops . The land resource is limited and greatly demanded for construction purpose for urban development and infrastructural facilities. Demand of biofuels in some countries also responsible for land stress for livestock development.Livestock is one of the important users of water resource. They consume all varieties of water directly or indirectly. It is estimated that livestock industries consume 8% of global water supply with most of water being used for intensive feed based production(Schilink, M.L. et.al 2010) Water is directly used for animal husbandry through feeding, drinking, cleaning and processing the products while the water, utilized in production of feedgrain, fodder, both dry and green, indirectly consumed by livestock. They appear as a competitor to human population as well agriculture. Thus the water consumed by livestock to maintain life as well as to the water used during product processing amounts to lion share to total water consumed globally. Distribution of global fresh water resource is very uneven and more than 2.3 billion population in 21 countries live in water stressed basin. 1.7 billion Live under the condition of water scarcity and a billion people do not have sufficient access to clean water. According to estimate, 2/3rd of world population

will be living in water stressed region and 1/3rd in absolute water scarcity (Hockestra, A.Y. and Chapagain, A.K., 2007).

Species wise livestock production also shifting their geographical concentration, intensification and mode of production and consumption. Bovine livestock concentration and derived products like meat and milk have been moving from temperate industrialized and low density of population to tropical wet monsoon region with deficient technology and dense population. Small ruminants like goat, managastric livestock like poultry and pigs are overpowering and catching up big ruminants i.e. cattle and buffalo in many countries of tropical monsoon region. Corporate sectors or big rich players are taking over poor small holders.. The interest of small and marginal farmers are badly affected and expected potential of livestock production systems for resolving existing poverty in rural areas appears futile and problem oriented .Poultry growth is increasing at very considerable and dramatic rates in South and south East Asia on account of being source of white meat , suitable for people suffering from diabetic, hypertension and heart disease and also being cheaper and highly acceptable to all social groups in the discussed areas.

Marketing of live animals and their derived products contributed and played a pivotal role in bringing livestock revolution in developing world. Liberalization of agricultural trade and high demand of lean free meat from tropical countries and rather higher rate of competitive advantage due to cheap labour and production costs. The technological innovation and support as well as demographic and social pressure undoubtedly played catalytic role in livestock production system upgradation but weak market channels and system in developing countries shadowed and slowed the development path recently. In basic terms a market for any product has to be accessible, reliable, consistent and competitive. Sadly these attributes are not found in most of the markets that are available to smallholder livestock producers in the rural areas.90 percent of our livestock being produced by farmers who have no idea where they will sell the product and when they can sell. Their market is not regular, it is not competitive, in fact, and it is nothing more than an accident of events.(Dube, M. 2019, Neggassa, A. et.al. 2011, Das, S.K. &Tirpathi, H. 2013, Khan, N. &Iqubal, M.A. 2011). Rural markets are only option for ruminant trades which have weakest linkage to standard markets or consumer markets as urban population and processing units which performed trading through organized sector. Small holders with their small stock size, low marketable surplus and less information about demand- supply and price receive rather very low share of consumer price of live animals and their products. Religious, social, political and legal ethics are also very important controller of livestock production system and marketing. Production trends and pattern as well as structure are found to be modified and transformed in many countries of world in time and space. Production of beef (cow) in India, pork in Arab world and some Muslim dominated nations are almost absent. Concept of halal and Zabihah meat especially for Muslim consumers all over world became one of the important terms and conditions for export or import of meat. Market accessibility, in terms of quality, quantity, price, and legal policy are the most important strategic steps for sustainable and economically viable development of livestock production system in world in general and in developing countries particular.

1.1.Livestock Production Performance in India

India is one of the important contributors to world livestock production system since antiquity. She is the largest livestock holder of 512.05 million heads and ranks as first in number of buffalo (105.30 million) and second in goat (140.50 million) and cattle (190.90 million) andthird forsheep (72 million) in the world during 2011. Poultry is also developed at fast rate recently and recorded second rank in chicken meat market and fifth in number of birds. Swine production is also exist but restricted and concentrated to some specific locations and communities. Pork is not consumed by both Muslims and Hindus. Livestock husbandry is one important sub system of Indian farming and is practiced as complimentary and supplementary to cropping system, most of cases as integrated or mixed farming. Livestock contributed 16% to the income of small farm households as against an average of 14% for all rural households. It contributed generally 4.11 percent to total National GDP and 25.22 percent of agriculture GDP during 2017-18(Annual Report 2018-19**).** Milk and meat are most important livestock

derived products demanded in the country. She produced 176.30 million tonnes milk securing first rank since 1980. Meat production is rather low with tune of 7.70 million tonnes while eggs production records as 95.22 billion. The value of output of livestock sector at current prices was Rs 9, 17,910 crores at current prices during 2016-17 which is about 31.25% of the value of output from agricultural and allied sector.

Livestock in India like other developing generate income and employment to rural poor and small holders maintain few heads of animals. Big ruminants like cow and buffalo add 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.(Mahapatra, R.2015, Bhasin, N.R.2009, Shaheen, at.el.2009, Khan, N. 2018, Khan,N. et.al.2015, 2011, 2010, 2010).. The animals also serve as moving banks and assets which provide economic security to the owners. 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 less land people depend upon livestock for utilizing their labour during lean agricultural season Animals are natural capital, which can be easily reproduced to act as a living bank with offspring as interest, and an insurance against income shocks of crop failure and natural calamities,. At the same time, consumption of livestock products like eggs, milk and meat is increasing due to rise in the income of the booming middle class, both in urban and rural areas. Between 1983 and 2004, the share of animal products in the total food expenditure increased from 21.8 per cent to 25 per cent in urban areas and from 16.1 per cent to 21.4 per cent in rural areas (Mahapatra, R. 2015). The non-farming communities are also benefited through indirect involvement in processing, distribution and marketing and some allied enterprises either as owners or workers. Meat production in traditional form has provided livelihood to millions of population especially from Muslim community as butchers. The organised meat producing units, called as meat factory, had also employed the population in surrounding areas and income of poor land less farmers is increasing and it helps in reducing poverty as poverty alleviation programmes,

1.2. Livestock Dynamics in India

The livestock sector improved well in developing countries in general and in India particular. Analysis of data during 1951-2012 reflects a shining trend and indicating bright future prospects of this sector of economy. During last 60 years the country witnessed an addition of 219 million heads of livestock with a tune of 1.85 percent per annum. Similarly Cattle, buffalo, goat and sheep also changes in their number during same period. The trends of livestock numbers indicates that species wise analysis of livestock number varied time to time. The cattle number started to decline after peak of 205 million heads to 109 million heads during 1992 to 2012.with negative growth due to mechanization of agriculture, low productivity, squeezing of grazing land, and prohibition of slaughter. Male cattle usually were used for drafting purpose in agriculture. Buffalo on the other hand reflated steady positive trends from 84 million to 109 million. Dairy farming development schemes like flood operation and different co-operative societies and involvement of corporate sector in contract dairy farming and dairy processing operation accelerated the number of milch animals especially buffalo which is considered more productive and remunerative as compared to cows. Meat industry development is most effective factor for marvellous performance of buffalo rearing. Buffalo have multi facet function and utility which increase the economic utility and farmers prefer to keep them. Domestic demand for beef from buffalo slaughtered through unorganised sector as well as international demands from Indian meat factories is fully met. Goat, household rearing animals, are mainly for mutton production with little share as milch animal also grew up in their number after independence from 72.20 million to 135.00 million heads during 1951-2012.The livestock census 2007-12 witnessed negative trends due to decreasing demand in mutton among common consumers on account of high price as compared to beef and chicken, though it is acceptable among all communities of the country. Standardization of houses with new modern facilities like tiled floor, bath rooms and smart toilets as well as female literacy also discouraged the household rearing of goats in rural areas. Squeezing of pasture land on account of increasing demand

for cultivation of valuable crops after development of assured irrigation in arid and semi-arid regions, agronomic region of small ruminants; overgrazing of grass lands and non-profitability of goat rearing in India are another actors for slowdown of production. Their demand also increased for meat production which is greatly demanded in all ethnic groups but usually by high income groups. Mutton is regarded as VIP meat due to its high price in India. Goat husbandry is very common in fragile environment like arid, semi-arid and hilly rugged topographic region. In wet region, their rearing is at household level performed by poor households especially by female's members. They are called as ATM of poor and mini bank of women. Their demand also increased for meat production which is greatly demanded in all ethnic groups but usually by high income groups.. Moreover, Swine population also declined as pork is not much acceptable even in non-Muslim and completely prohibited for Muslim who shares about 12% of Indian population.

The growth and development of livestock sector also exhibited regional variation among various provinces of the country. Fig. 5,6,7,8presents a scenario of growth of different species of livestock during 2003-12. Buffalo, (an important bovine) recorded positive growth in all states of the nation with variable rate. North, North western states like Jammu & Kashmir, Punjab, Gujarat and Haryana; Andhra Pradesh in south India with a tune of more than 30% growth rate.North Eastern states as well as, Kerala and Tamil Nadu in Southern states and Orissa and West Bengal in the east improved buffalo numbers at lowest rate less than 10 percent during same period. Central belt from north to south had moderate change in buffalo number between 10-30 percent. The development of cattle production as visualized by map study (Fig.6)J & K , Gujarat, Tamil Nadu, Arunachal Pradesh and Meghalaya showed high positive growth above 30% during 2003 t0 2012. U.P., Bihar, Madhya Pradesh, Maharashtra, Kerala and Orissa witnessed a negative growth in cattle number. Remaining states are representing moderate change in their number between 10 to 30 percent. Goat , very important small ruminants, are household animals of poor and women in almost all states and flock of nomadic herders in semi-arid and arid and hilly areas , also grew up in different rates among the states of the country. North Western region including Rajasthan, Gujarat, J& K, Tamil Nadu and Karnataka, Orissa, Arunachal Pradesh and Meghalaya showed highest growth of goats during same period. Bihar, Jharkhand, Chhattisgarh, Karnataka and Kerala unfortunately exhibited negative change. Moreover, the fast growing species poultry showed regional and spatial variation. It showed a high level of multiplication more than 30 percent in all states of south India and Assam, West Bengal and Orissa in eastern and NE region. Madhya Pradesh, Rajasthan, J &K and Andhra Pradesh achieved moderate growth (20-30 %) in poultry development. Other states exhibited either low or negative growth.

The livestock derived products like milk and meat recorded positive growth. India is the largest producer of milk with a record of 176.30 million tonnes during 2017-18 which grew up from 56.60 million tonnes in1991-92. The growth in milk production occurred on account of increasing urban demand and through government policies and strategy in different five year plans and involvement of cooperative societies at grassroots level. Milk production showed spatial variation as 25.98 million tonnes produced by Uttar Pradesh securing first rank in country. She is followed by Rajasthan (16.93 MT) Madhya Pradesh (16.79 million Tonnes) Gujarat (11.69 million Tonnes) Maharashtra (9.54 million Tonnes), Haryana (7.90) million Tonnes and Bihar (7.7 million Tonnes 7). The availability of per capita per day also improved from 178 grams to 375 grams during same period but the consumption pattern is very poor, most of rural population as well as one third of urban consumers do not have minimum weight(300grams per person per day) recommended for per capita per day by National Nutrition Monitoring Board. Meat production from all sources is also recorded breakthrough after 1991, the beginning of economic reforms and globalization economy. Meat production increased from 1.87 million tonnes in 1998-89 to 7.37 million tonnes during 2017-18 in India,mainly, due to liberalization of agricultural trade after 1994 which resulted in industrialization of meat production for export purpose. Internal demand for meat consumption moved upwards as a result of expansion in abrupt urban population, modification in food tastes among youngsters from vegetarian to non-vegetarian and mushrooming of fast food providing centres at unrecorded number(Tepper, 2012, Gandhi and Zhao, 2010,). The buffalo beef exported during 2017-18 was 1.35 million Tonnes while the total meat traded

internationally reported as 1.39 million tonnes in same year. The share of meat production from different species varied and very much influenced by socio cultural and economic factors. Being Hindu dominated countries for whom cow is sacred animal, beef (cattle) production has been very negligible or almost absent as cow is officially banned and punishable offence. Male cattle were permitted for slaughter; due to this reason some share of beef is added to total meat production. Cattle and buffalo beef shared almost equally till 2007-08 livestock census year with little variation. Buffalo and chicken production improved well after 2007-08 and onward. Poultry meat production jumped from 849000 tonnes to 7386000 tonnes during 2007-08 to 2017-18.Most of the production of chicken meat is internally consumed and has been preference of all population (non-vegetarian). Low price and recommended for patient suffering from diabetic, blood pressure, hypertension and heart problems are attributed for fast growth of this industry (Devi, S.M. et.al.2014, FAO 2012, & Yadav, et.al. 2006). Buffalo beef ranked second (19.64% of total) in production which caters the need of majority of Muslim consumers and imported to large number of countries of Asia and Africa. Price competitiveness, cheapest in all, is the most attraction for poor and middle income group in the country. Mutton is another important form of meat which accounts for 14 percent of total meat production during 2017-18. Its share continuously increased due to increasing demand among non-Muslim consumers as it is widely acceptable in all religious community especially high income group who prefer less beef and chicken in comparison to mutton . Cattle beef production either remained stagnant or declined during last 20 years, being cattle prohibited for slaughtered as religious sanctioned from majority of Indian population (Epley, et.al.2008, Khan, N. & Ali, M.2008).

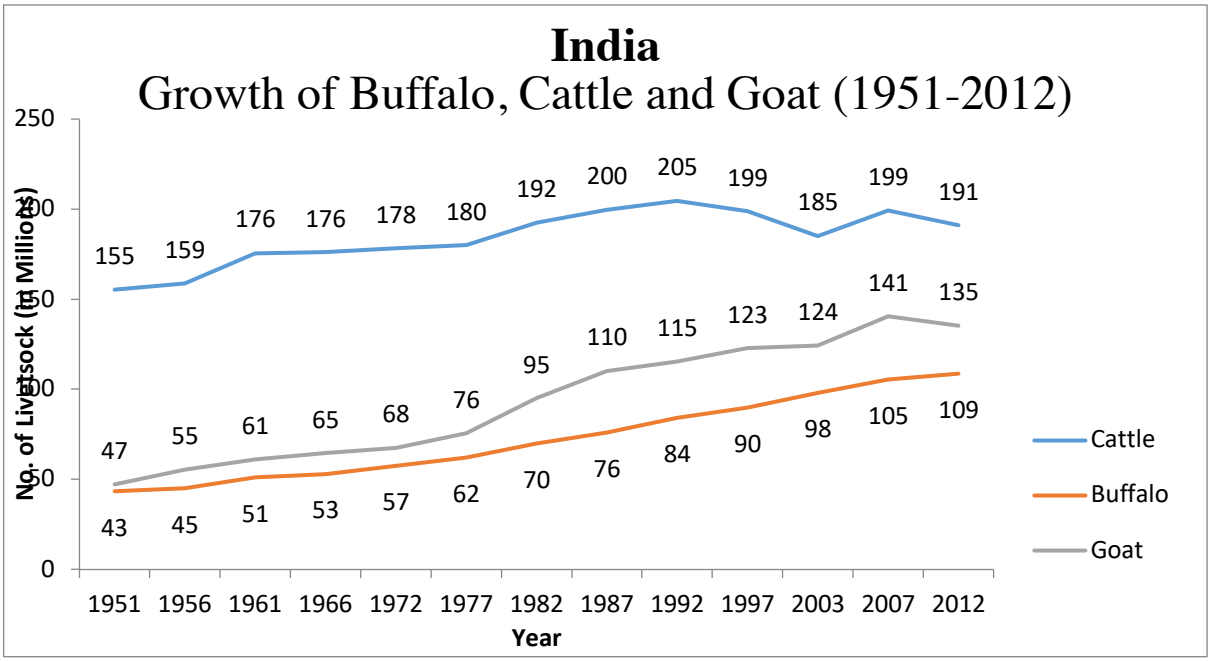

Fig.1

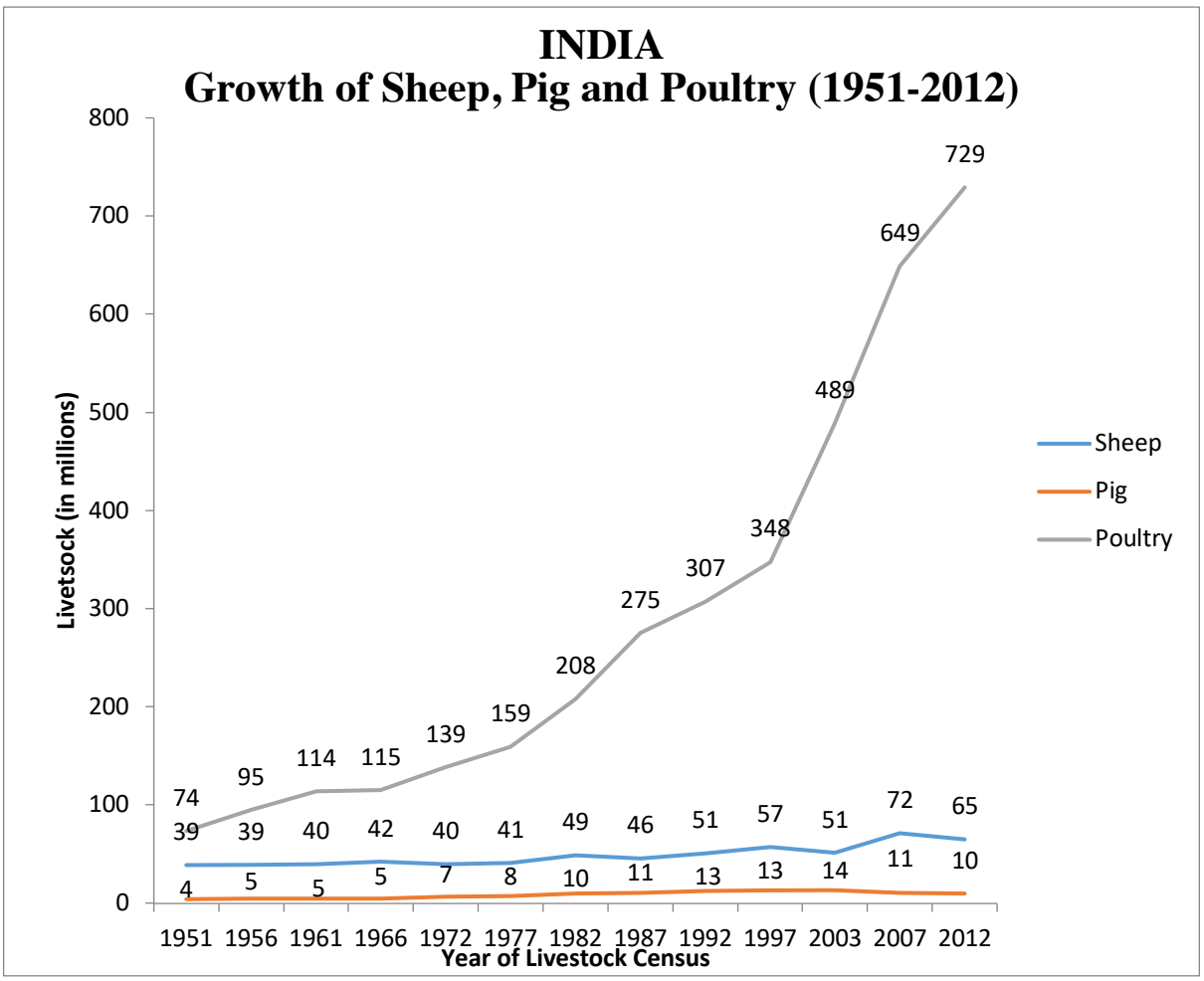
INDIA
Growth of Sheep, Pig and Poultry (1951-2012)
Livetsock (in millions)
Year of Livestock Census
Sheep
Pig
Poultry
0
100
200
300
400
500
600
700
800
1951 1956 1961 1966 1972 1977 1982 1987 1992 1997 2003 2007 2012
74 95 114 115 139 159 208 275 307 348 489 649 729
39 39 40 42 40 41 49 46 51 57 51 72 65
4 5 5 5 7 8 10 11 13 13 14 11 10

Fig. 2

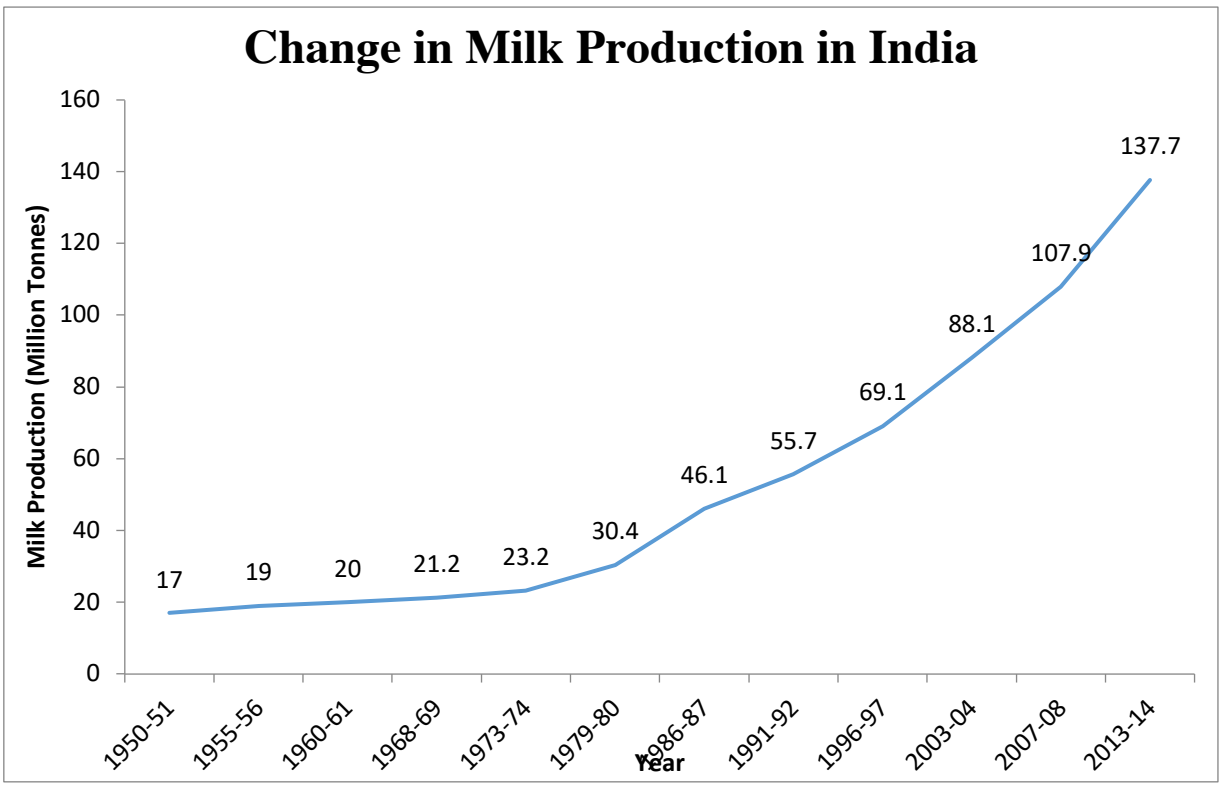
Change in Milk Production in India
Milk Production (Million Tonnes)
160
140
120
100
80
60
40
20
0
17
19
20
21.2
23.2
30.4
46.1
55.7
69.1
88.1
107.9
137.7
1950-51
1955-56
1960-61
1968-69
1973-74
1979-80
1986-87
1991-92
1996-97
2003-04
2007-08
2013-14
Year

Fig.3

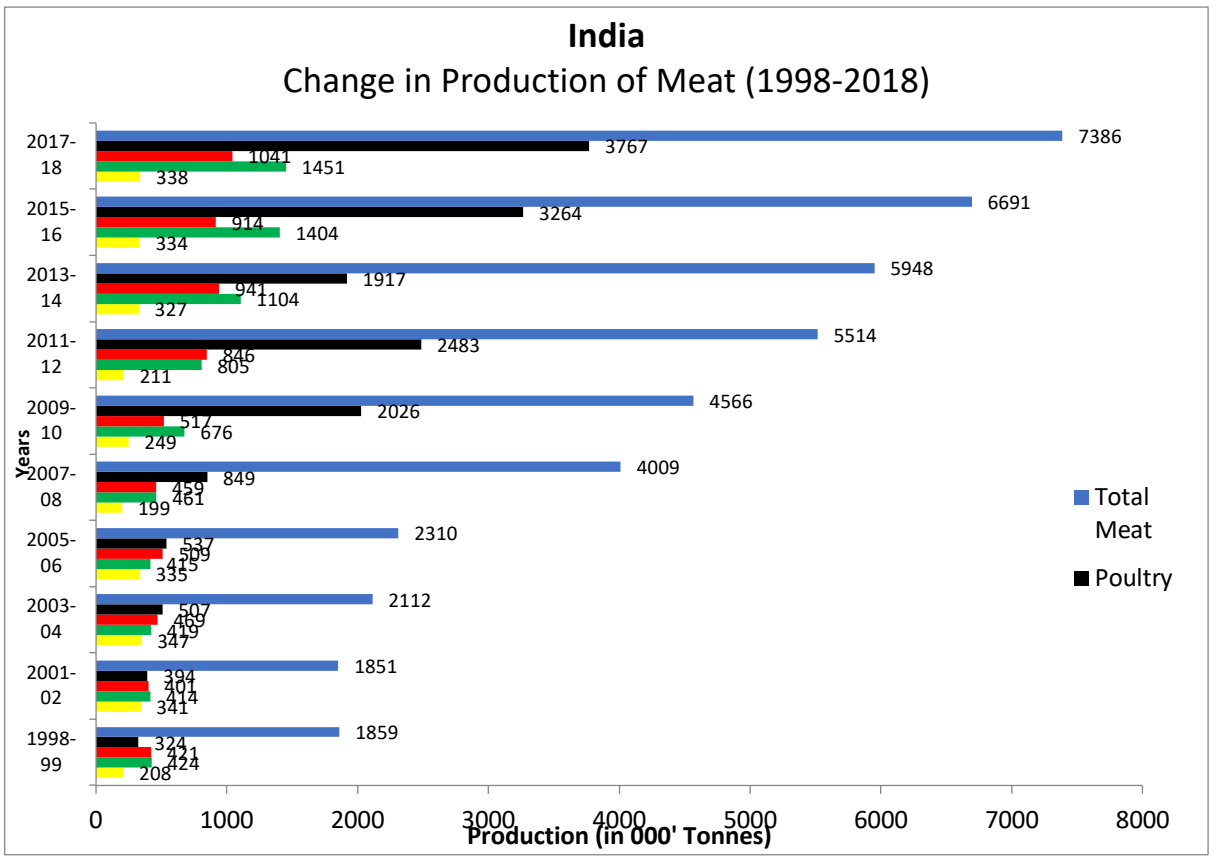

Fig4

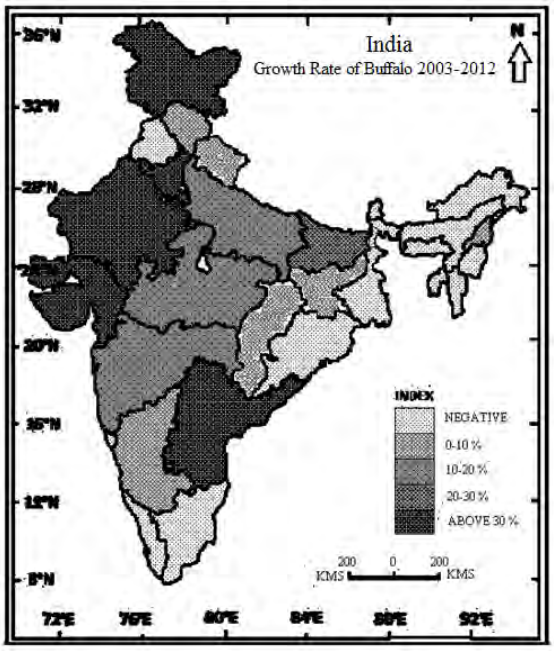

Fig. 5

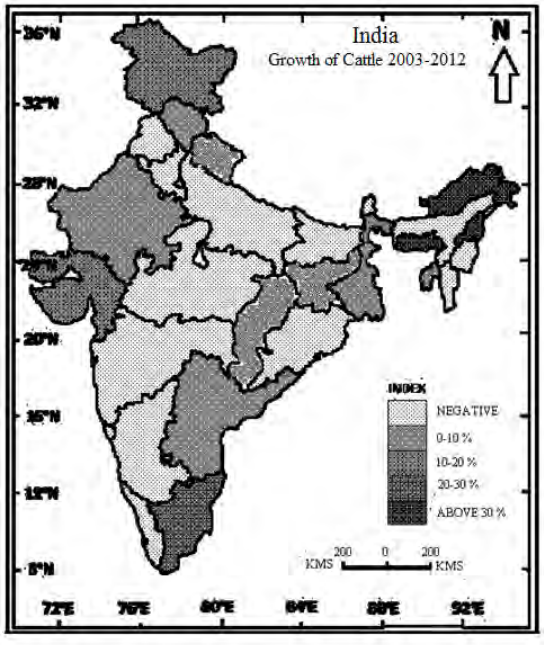

Fig. 6

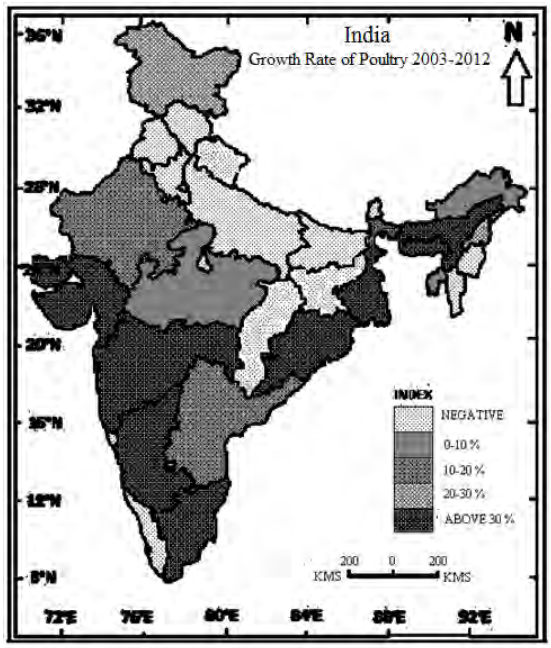

Fig. 7

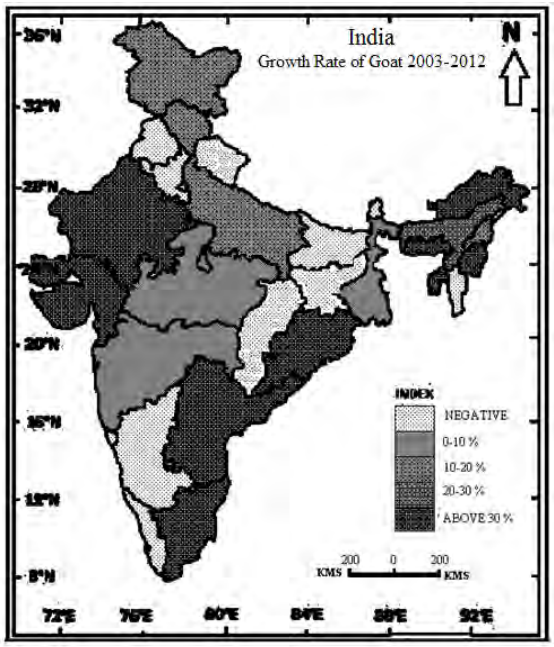

Fig. 8

1.3.Marketing of Livestock and their derived Products

Trade or exchange of live animals and their processed or raw products like milk, meat, hides and skin has been very much traditional in nature through unorganised sectors in developing countries.. Marketing facilities with perfect competition, regularity, value addition chains determine the trend of production of different species of livestock.(Khan, N.&Iqubal, M.A. 2011, Raza, S.H.2017, Ummae, Zia et.al. 2011). Live animals including small ruminants are generally traded either at farm gate or rural markets located near producing areas i.e. villages due to being bulky weight and small size of marketable surplus (Number of animals for sale) and least transport accessibility between farms house and markets. Most of the sellers of livestock bring the cattle, buffalo and goat by walking , vehicles are rarely used in interior rural areas but some modification are found in peri -urban areas where traders hire truck or local means of transportation for tracking animals from production to transaction area. The proportion of livestock traded varies with objectives of trade. Milk animals, draught animals (Big ruminants) and meat goats are traded in larger proportion in rural areas while meat livestock of all kinds are transacted in urban or nearby urban livestock markets (Khan, N.2011, Jooste, 2001). Poor and small farmers, about 80 percent of livestock holder with small stock size, sell their largest part of saleable animals through informal sector (Nikosi and Kirsten 1993, Das, K.S. &Tirpathi, H. 2013, OKike, I .et.al.2010).The farmers are not getting due price of their marketable surplus as they have very weak bargaining power and local buyers with low purchasing power as compared to traders or producer sellers having accessibility to urban markets and meat producing factories which offer at least four times more price rather than transaction made in rural markets. Present study reveals that more than 80 percent of livestock moves through rural market system. (Benson, et.al.2001). Contract livestock husbandry is also common in some areas where formal institution or meat or dairy processing industries are located. Animal rearers sell their livestock derived and live animals to the factories and get rather high price. (Khan, N. & Ali, M 2008). Some livestock assembling markets also informally exist in the country where whole sale trading occurs. Such centres are usually linked with meat industries. Government of provincial states established livestock markets and fairs which deal with livestock of different species reared in concerned area.

Meat trading is caste oriented activity and most of domestic meat traded especially of buffalo beef and mutton by aparticular social group known as Qurreshi. Meat trade channel is usually small i.e.

farmers- itinerant trader- butchers – consumers. But in the case of export usually from meat industries follow long channels as farmers- itinerant traders- wholesalers- industries- whole- salers- terminal point (export). Poultry meat also has local consumption but the birds are traded and transported from long distances even from other states in India. India exported 1.35 million tonnes of buffalo beef, 2.20 lakh tonnes mutton and 5000 tonnes chicken meat during 2017-18. It is reported that 80 percent of meat production in the country is internally consumed. A small share with 20 percent is exported. India has a good potential for meat production and export because meat export from India is risk free, lean, and nutritious and competitively price meat and highly demanded in Middle East, south East Asia and North African regions. Meat trade also employed millions of population from live animal trading to final distribution of meat to consumers.

Milk in India is also a tradable component which involved 20 percent of total employed people in livestock sector in India, though during 1970 - 80, subsistence dairy farming was dominated. 48 percent milk is either consumed by farmers or sold to non farmers in rural areas and 52 percent is sold in urban area to direct consumers, milk processors and dairy industries. Marketing of the largest share of the milk production takes place through unorganized sectors. The unorganised sector includes farmers, which includes local milk vendors, wholesalers, retailers, and producers themselves, Atta and Ganguly (2002) estimated Indian milk demand for 2020 under various GDP growth rates. The study reported that if the current growth continues for the next twenty years (the nation has been growing at a rate between 5 and 7 percent over past five years), milk consumption is likely to more than double by 2020.Cooperative and government sector are most valuable trading agents of organized sector and control 20 of milk trade. Moreover, recent livestock trade rules have negative effect on trading of live animals and meat production and trade.

1.4. Conclusion and prospects of Livestock Production

Livestock economy is one of the blessings and potential means for socio economic transformation and up gradation in developing countries like India. Increasing demand for livestock derived products in response to high urbanization, income growth, social taboos depletion in food habits are the harbinger of development of livestockhusbandry, dairy farming promotion, and meat and milk enhanced production. The demand of meat for domestic consumption and export to surrounding countries had been continuously increasing. It call up for expansion of livestock husbandry involving poor and marginalized group of people who are well equipped with patience and skills how to manage the livestock farming system in economical viable system, Proportion and number of small and marginal farmers and land less labours are estimated to be grown up on account of distribution and redistribution of land among heirs. They are chiefly controller of livestock production system (Brithal, 2008, Khan, N. et.al.) Mechanization and modernization of agriculture , the country achieved success of high appreciation, enhanced the probability and potentiality of livestock sector as peoples are spared from farming activities especially during off farm season. Availability of cheap labour, feedgrains and fodder from cropping system as crop residues and some fodder crops and well experienced traditionally existence of mixed farming in the country as a whole, if a proper scientific livestock management with assured marketing linkage developed, could intensify and enlarge the livestock and crop integrated farming system which will enhance the farmers income, employment and agriculture and farmers sustainability in future. Most of states except Punjab, Haryana, Western Uttar Pradesh, Rajasthan and Maharashtra, are lagging behind in dairy farming. The mechanization of agriculture negatively affected the livestock rearing and cropping residues are wasted through burning, causing environmental pollution. These regions are having potential for development of dairy farming as well as meat industries in future in the country. The country has good potential for meat production because of large livestock population. Goat rearing is a great source of household income especially for women and it is considered as micro bank of poor and larger portion of population and larger part of the country have good potential to develop goat farming at commercial level in scientific ways. The demand for mutton has been tremendously enhancing in the country after restriction of beef production and trade recently. Small ruminants and poultry have shown a promising trend in future. The future of livestock sector in developing countries in general and in India particular

appears to be shining and means for solving socio economic issues like poverty, food nutrition security, women's economic empowerment and unemployment- of the country.

Acknowledgements
We are very much grateful to Indian Council of Social Science and Research, New Delhi for providing financial support under different research projects for the study of livestock husbandry and its related issues in the country. Thanks are also to I STAP, Yogyakarta invited me for lecture and submission of paper. Department of Geography, Aligarh Muslim University deserves our special gratitude and appreciation that provides always facilities and support for doing such academic assignment.

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