

Livestock husbandry in India: A blessing for poor

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ABSTRACT: Livestock husbandry is an important economic asset in India. It contributed 5.36% to national GDP and 31.70% to agricultural GDP during 2006-07. Country recorded tremendous growth in livestock number as well as their products during 1991-02 to 2006-07. Buffalo and chicken recorded laudable change due to increasing demand of milk and meat at national and international level on account of increasing urbanization, increasing disposable income, food habit change and rise in health consciousness to take animal derived food. Cattle showed negative change or deceleration over the time owing to increasing agricultural mechanization and prohibition for their slaughter on religious ground. This sub sector of agricultural economy is a potential source of employment generation and income for rural poor landless and farmers as 15-40% of income for 75% of livestock rearers /holders earned from livestock husbandry and allied activities in the country. 75% of female workforce in rural areas engaged in livestock related operation. Livestock holders dominantly belonging to backward castes and small and marginal holdings. It is suffering from infrastructural facilities as well as from negligence by government. In comparison to some Asian countries, Indian livestock husbandry is satisfactory but still need a support and incentive to bring this sector at the level of China and other countries especially in meat production. However, an efficient and practical livestock farming system based on socio economic conditions of livestock rearers with latest modern infrastructural facilities should be developed for harnessing the potential inherited in for poverty alleviation, rural transformation and reducing rural urban migration. Livestock –cropping integrated farming system is recommended for economically viable, socially acceptable and environmentally sustainable development of agriculture in the country.

INTRODUCTION

Livestock is an important sub sector of agriculture all over the world. Globally it contributed 1.5 percent to GDP and it is one of the most important farming which keeps pace with overall economic expansion. In India, it played significant role through supply of milk, meat and eggs to the millions of population and contributing 5.36 % to national GDP and 31.70% to agricultural GDP during 2006-07. India has the largest number of cattle, buffalo and second for goat and sheep in world. 104.80million tonnes milk, 53.50million eggs, 44 million kg wool and 6.51 million tonnes meat were produced from this sector during 2007-08.

The real value of livestock products grew up very fast over the last decades. Livestock husbandry is viewed as an output function in which food and non food items like milk, meat, eggs, hair, hide and skin are produced. It also provides inputs for crop production in the form of manures, energy and fuels. Draft animals are used for plowing the land, transporting crop products from farm house to markets. Big and small ruminants are reared in various agro climatic conditions and by various socio economic groups in the country. The livestock sector has a good potential of risk coverage in the case of crop livestock mixed farming while crop failure is caused by either monsoon failure or floods. It is also concerned with some socio- cultural functions and linkage. Their importance in Indian society is evident from the fact that the livestock are considered as a social status and many festivals and fairs are based on livestock products. The most excellent example is the sacrifice (Qurbani) of big ruminant and small ruminant like sheep and goat on occasion of Idul Azha. Millions of livestock slaughtered on this festival by Muslims every year. This sector of economy has been appearing as a very potential option for diversification of farming system with a high level of value addition.

DYNAMISM IN LIVESTOCK HUSBANDRY

Livestock sector has been continuously improving up as the demand for livestock products rose up tremendously over the years after implementation of new economic order or WTO during 1991. The table- I shows that all species of livestock grew up in their number of heads during 1991-92 to 2006-07 in India. Their number changed from 762.20 million during 1991-02 to 1031.70 during 2006-07 at the annual growth of 2.20% per annum. Cattle number exceptionally declined from 203.50 million heads in to 176.60 million heads during 1991-02 to 2006-07 with 0.82% annual negative growth rate due to increasing mechanization of agriculture which discouraged the use of oxen or male cattle as draft animals after adoption of green revolution (Khan, N. et. al 2006).. Other species like buffalo, goat, sheep, pigs and chicken improved their number during last 16 years. -Buffalo number grew up at the highest rate of all bovines/ ruminants in the country with 1.25% per annum during same period. Their number rose up from 82.16 million heads to 98.70 million heads during last 16 years. Similarly goat number moved up from 114.25 million heads to 125.40 million heads, sheep from 49.74 million heads to 57.00 million heads, and pig from 12.60 million heads to 14.00 million heads during 1991-02 to 2006-07 with annual growth rate of 0.61%, 0.91%, and 0.69% respectively while, the chicken number grew up, with the exceptionally highest rate of 5.40% per annum. Livestock products i.e. milk, meat and leather also have shown positive trends during discussed period. Their demands are increasing day by day not only in India but all over world especially in developing and less developed countries. It is expected to double the demand for livestock derived products up to 2020 (Delgado, 1999). Table 2 reveals the fact that both milk and meat production enhanced to a considerable level in the country after 1991 when she adopted new economic order policy under WTO. Milk production improved up from 54.06 million tonnes in 1991 to 106.10 million tonnes in 2006 registering an annual growth rate of 6.02%. Species wise analysis showed the domination of buffalo milk over cow milk because the former has rather high density, quality and quantity as compared to latter. Buffalo milk jumped up at rather high rate i.e. 6.65% as compared to cow milk at only 2.89% during same period. Similarly, meat production also witnessed a positive change over the last decades. Total meat production rose up to 6.51 million tones during 2006-07 from 3.90 million tones during 1991-02 at a rate of 3.94%. All categories i.e. buffalo, , goat. Sheep and chicken meat recorded laudable rate of growth except cattle (0.25%) and pork (1.00%). Chicken meat showed highest growth rate 33.80%, followed by mutton (1.36%) and buffalo (1.32%).

This kind of temporal change in livestock sector in the country, however, is attributed to the government livestock intensification policies began more than three decades before in the area of dairy and poultry development through provision of offering subsidies for inputs and the facilities like veterinary hospitals and extension services. -Operation flood scheme with addition of larger number of crossbreed cows and buffalo encouraged the country to be largest producer of milk in the world. The continuous increase in urban population and urban centres, increasing disposable income due to sustained economic growth and increasing consciousness for health with high intake of livestock derived food and the liberalization of agri business recently are the most important deriving factors for spurt in livestock sector. The preference of buffalo as milk and meat livestock, recently, has enhanced their number as well as volume of their products i.e. milk and meat, during post economic reform period (Khan, N. et. al. 2008). Rangnekar (2006) described buffalo production, from sustainable livelihood perspective, has multiple roles ranging from being a source of regular income, being an asset to a source of draft power and manure, providing nutritional security to their social value. Their milk can be sold easily even in those area where co operative dairy centres have not been established. Their maintenance is rather easier as the adult buffalo rarely have health problem and can thrive on even coarse feed. They also have good market price especially for meat production when they become unproductive for milk or burden during drought conditions when fodder shortage prevails unlike the cattle which become burden under discussed condition due to religious sanction or taboo for slaughter in many states of the country especially in north India (Khan, N. et al. 2006). The increasing trends of buffalo meat in national and international markets have encouraged farmers to rear buffalo in abundance. Similarly, goat, sheep and chicken number as well as meat improved on account of their high level of acceptance among all groups of the society. The commercial intensive poultry farming by individual small farmers as contract poultry farming recently developed in many states have

accelerated at a fast rate to meet the demand of burgeoning urban population in the country. Moreover, the cattle number and meat production either improved at slower rate or declined due to the mechanization of agriculture resulting fall in demand of male cattle as draft animals. The low productivity in term of milk per head of cow as compared to buffalo also discouraged the cattle production in successive years. Prohibition of cow slaughter is the cause responsible for reduction in cattle heads.

Table 1. Growth of Livestock Number in India during 1991-02 to 2006-07
 (Number in million heads/birds)

Species	1991-02	2006-07	Change	Annual Growth(%)
				1991-2006
Cattle	203.50	176.60	-26.90	-0.82
Buffalo	82.16	98.70	16.54	1.25
Goat	114.20	125.45	11.25	0.61
Sheep	49.74	57.00	7.26	0.91
Pig	12.60	14.00	1.40	0.69
Chicken	300	560	260	5.41
Total	762.20	1031.70	269.50	2.20

Source: Selected indicators of agriculture in Asia and and Pacific Region, FAO ,1992 and 2007

Table 2. Growth of livestock Products in India during 1991-02 to 2006-07
 (Production in million tonnes)

Products	1991-02	2006-07	Change	Annual Growth (%)
				1991-2006
1-Milk	54.06	106.10	52.04	6.02
Cow	23.03	42.86	19.86	2.89
Buffalo	28.67	59.20	30.57	6.65
2-Meat	3.99	6.51	2.52	3.94
Beef	1.23	1.28	0.05	0.25
Buffalo meat	1.23	1.49	0.26	1.32
Mutton	0.61	0.78	0.12	1.36
Poultry meat	0.36	2.31	1.95	33.85
Pork	0.43	0.50	.07	1.00

Source: Selected indicators of agriculture in Asia and Pacific Region, FAO, 1993 and 2008

Table 3. (a) Comparative Annual Growth (%) of Livestock and Livestock Products in India with China, Bangla Desh and Pakistan during 1997-02 to 2006-07

Species	India	China	Bangla Desh	Pakistan
Cattle	-0.12	-1.00	0.50	4.00
Buffalo	0.94	0.45	3.55	3.06
Goat	0.20	1.10	4.30	2.60
Sheep	2.30	1.40	4.20	-0.10
Pig	0.50	1.30	-	-
Chicken	5.90	1.30	1.30	2.80

(b)

Products	India	China	Pakistan	Bangladesh
1-Milk	4.10	14.70	3,20	3.00
Cow	3.90	18.80	3.90	0.50
Buffalo	4.30	1.70	2.80	3.30
2-Meat	3.40	2.60	3.40	3.5
Beef	-0.70	3.60	5.10	1.20
Buffalo meat	0.90	-0.50	4.80	4.70
Mutton	1.70	6.90	-0.90	4.70
Poultry meat	13.60	3.90	3.70	5.60
Pork	0.70	7.60	---	---

Source: Selected indicators of agriculture in Asia and Pacific Region, FAO , 2008

COMPARATIVE PERFORMANCE IN LIVESTOCK SECTOR WITH SOME ASIAN COUNTRIES

India has achieved the respectable position in livestock sector in Asia continent. She has the highest number of cattle, buffalo and second in goat and sheep .Its position is also very high in milk production. Analysis of growth of this sector during 1997to 2006 showed a considerable variation with reference to their number as well as products. Cattle number declined but rather at higher rate than china. While the neighboring countries like Bangladesh and Pakistan recorded positive change .Buffalo number rose up in all four countries but again higher than China and less than Bangladesh and Pakistan. In the case of poultry the country witnessed a supremacy over all the discussed countries. Chicken number increased at 5.90% during 1997 to 2007.The comparative performance of livestock derived products showed little different position .In production of milk as a whole and cow milk in particular China reflected her supremacy over India and other countries with annual growth rate of 14.70 % and 18.80% during 1997 to 2007.As fa r as the meat is concerned, three countries except China have shown almost same rate .Mutton growth is rather low in India with only 1.70% where as China and Pakistan with 6.90% and 4.70% during same period. India further showed very excellent amelioration in case of chicken meat. This kind of meat grew at 13% annual rate during discussed period .while China, Pakistan and Bangladesh have less than 5.6%(Table 3,b) However, India has high level of potential for development of livestock sector .Milk . There is good demand for meat and dairy products in both national and international markets which could be met by the country through the development of export promotion facilities in livestock rearing regions.

SOCIO ECONOMIC STRUCTURE OF LIVESTOCK HOLDERS/WORKERS

Indian agriculture is engulfed in socio economic stratification of the country. Largest number of operational holdings, more than 75%, belonged to marginal and small farmers and other backward class of the society. Livestock sector is not exception but rather more controlled by poor and backward farmers. This sector of agriculture economy is key to the poverty alleviation and sustainable development of marginal and small farmers (Khan, N. et.al. 2009, Khan, N. and Iqbal, A. 2009, Focus 2007). It plays a significant roles in strengthening rural economy through self employment , income generation and food security.2/3rd of women agricultural work force are involved in various operations of livestock husbandry in the country .Their income is improved through rearing of small ruminants like goats, called as ATM and resource of poor and women, and women economic power is also strengthened.15 to 40% rural income is earned through this sector by 75 % of rural households(Bhasin, N.R. 2009, Rangnekar, D.V.2006, Shaheen,A. et.al. 2008) .Small, marginal farmers and landless laborers control 75% of the livestock husbandry in many ways. Several studies reveal that their share is rather high in peri urban areas of the urban centres and semi arid climatic condition. They follow generally livestock cropping integrated farming system which is more economical and sustainable system for poor farmers with limited land. The household labors are involved economically and both livestock rearing and cropping system is balanced through exchange use of by product for each other (Brithal, P.2002).

Women of Marginal Farmers Milking Buffalo



PROBLEMS AND NEGLECT OF LIVESTOCK SECTOR

Livestock sector, despite more potential sub sector of agriculture economy, could not get equal priority to cropping system during different plans after independence. Green revolution encouraged only few crops and many sub sectors like animal husbandry lagged behind. Flood operation scheme, undoubtedly, revolutionized this sector through the technological change and addition of more number of cross breeds cattle and buffalo for growth of milk production in the country. Establishment of Co-operative dairy societies, veterinary hospitals also encouraged the milk production. The emphasis on infrastructural facilities like processing centres, refrigerated transport system, credit facilities and extension services was not given well, so that this sector mainly confined to urban periphery areas. Several potential villages for livestock development remained unexploited and latent employment generation capacity could not be developed. In the recent plan, still, Rs 10628 crore is allotted for crop production as compared to Rs 626.26 crore for livestock husbandry and allied activities in 11th plan. The demand of Indian Dairy Association for concession on various inputs and reduction of custom and excise duty for import of equipment and technology for dairy development have also not been taken under consideration in the present plan. Various agricultural incentives like credit, insurance as well as Kirishi Vikas Yojana are mainly concerned with crop cultivation, mechanization of agriculture and horticulture development. Animal husbandry again is marginalized in development plans. Globalization of agri-business resulted in scaling up of this sector and aggravated further the problems with the challenges of environmental issues like water pollution, soil pollution, reduction in food cropped areas, as well as establishments of small and marginal livestock holders as they have no capability to compete with capital intensive big farm or enterprises mainly controlled by industrialist/ multinational companies. Moreover, meat industry is also neglected, though, it has a enormous invisible employment and it is also a source of income for rural masses directly or indirectly and foreign exchange earning through export.

CONCLUSION, SUGGESTION AND STRATEGIES FOR LIVESTOCK DEVELOPMENT

Livestock is an important economic asset for Indian farmers for improvement of their income, living standard, food nutrition and health standard. Livestock number and their products have been steadily growing up owing to increasing demand for animal derived products like milk, meat and eggs over the last decades. Increasing urban population in developing countries, improvement in disposable incomes, change in food habits from vegetarian to non vegetarian, and social transformation are the important drivers of the revolution in the sector. Buffalo and chicken showed an exceptional growth on account of enhancing demand for their meat in national and international markets. Development of large scale meat producing and exporting enterprises especially of buffalo meat led to a spurt in buffalo production. Contrary to this, cattle showed deceleration over the times in their number as well as products on account of mechanization of agriculture and prohibition of their slaughter because of religious consideration. Cow milk is also less preferred by producers and consumers as the fat and milk production per head are rather low. Small ruminants like goat and poultry also grew up due to involvement of poor and women workforce. They are considered as Poor's ATM and resource because could be sold immediately when they need cash. However, there have been several problems and negligencies made by government which inhibited the high growth of the livestock sector, despite a high level of potential, in the country. Infrastructural facilities like road accessibility to consumption points, refrigerated containers and transport to carry perishable livestock products, procurement centers for dairy products, dairy processing units in livestock husbandry areas, micro credit facilities for poor livestock holders are not available at satisfactory level in rural areas. The allocation of resource for animal husbandry is rather negligible i.e. Rs.626.26 crore as compared to crop development i.e. Rs10,628.00 crore in 11th plan. Not only inadequate budget provision have been made but the concession in the custom and excise duty and other incentives proposed Indian Dairy Association in this budget memorandum to the union government have not been provided. India lagged behind in growth level / rate of milk, mutton from China, Bangladesh and Pakistan have superiority over India in the growth of buffalo meat. Nevertheless, the country has the

leadership in buffalo milk and poultry meat against all the country discussed. The following suggestions are recommended for balanced development of livestock husbandry and rural transformation in the country.

1. There should be an effective extension service to educate the farmers about the latest technology available for development of livestock production as well as, processing, marketing and consumption of livestock derived products.
2. A proper efficient and economically viable and accessible refrigerated transport system should be developed for easy transportation of perishable livestock products from production points to processing, marketing and consumption points both at regional, national and international level. Interior and remote villages should be also interlinked with the urban markets.
3. Livestock insurance and credit facilities at easy term and conditions should be also developed at grassroots level for poor farmers, so that they can increase their bargaining power at the time of selling their products like milk. In the absence of these facilities , sometimes, under economic compulsion they have to sell their capital (livestock) at distress sale.
4. Rural markets should be well developed with infrastructural facilities and linked with national livestock markets and processing industries centres , as the rural markets are only option for transaction of live animals in the rural areas. Being a bulky nature, transport cost is rather high to transport live animals especially ruminants to longer distance from their rearing place.
5. Contract livestock farming with the partnership of farmers should be encouraged in the livestock rearing areas. This kind of effort may provide ensured marketing facilities and input easily. Rural urban migration would checked through involvement of leisure labors from the households of poor livestock rearing.
6. Livestock - cropping integrated farming system should be also encouraged through giving incentive to the small farmers with a view to enhance economic viability of the farmers and the sustainability of the environment.

LITERATURE CITED

- Bhasin,N.R. (2009) President's Desk, Indian Dairyman, June 2009 Issue, vol.61,no.7, pp1-2
- Britha, P.S.&Rao,P.P (2002)Technology Options for Sustainable Livestock Production In India, proceeding of the workshop on documentation, Adoptin, and Impact of Livestock Technologies in India, 18-19 Feb.2001. NCAP, New Delhi
- F.A.O (1993) Selected Indicators of Food and Agricultural Development in Asia and Pacific Region , RAP, Publication 2008/14 www.fao.org/docrep/012/i1020e/i1020e00.htm
- F.A.O (2008) Selected Indicators of Food and Agricultural Development in Asia and Pacific Region , 1998-2008, RAP, Publication 2008/14 www.fao.org/docrep/012/i1020e/i1020e00.htm
- Focus (2007) The Livestock Revolution: An opportunity for Poor FARMERS? Info resource, Focus No. 1/07, Swiss Agency for Development and co-operation, SDC
- Khan, N.,A and Ahmad ,A., Hashmi,S.N. and Hoda, M., (2006) Livestock Marketing and Diversification of Agriculture (2006), Vista International, Delhi
- Khan , N.,Hoda,M.,Siddiqui,Z. and Iqbal,A. (2008) Livestock Revolution in Monsoon Asia during Post Economic Reform Period, *Asian Profile*, Canada Vol. 36, No. 5, pp. 529-544.
- Khan, N., and Iqbal,A.(2009) Livestock Revolution and Its Impact on Sustainability of Marginal and Small Farmers in India: A case study, REVIJA ZA GEOGRAPHUO (Journal for Geography) , Maibore, Slovenia, Vol.15,No.2,pp.95-108
- Khan, N. & Asif Iqbal, M.D. (2009) Animal Husbandry Plays A Significant Role in viability of Small and marginal Farmers in Aligarh District, *Indian Farming*, Vol.59,No.4, July2009 pp.21-23.
- Rangnekar,D.V.(2006) Livestock in Livelihoods of Underprivileged Communities in India: A review, International Livestock Research Institute(ILRI) Nairobi, Kenya.
- Shaheen,A.,Farrington,J.,Deshingkar,P.,and freeman,A (2008) Drought and Vulnerability of Livestock in India, Discussion paper No.9 Targeting and Innovation, ILRI, Nairobi, Kenya.