

## **ROLE OF LIVESTOCK IN DOUBLING THE FARMERS INCOME – NATIONAL PERSPECTIVE AND THE WAY FORWARD**

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**Abstract:** To increase the farmers income through livestock sector in real terms requires restructuring livestock processes & policy interventions. Fundamentally there are three ways in which income of farmers may be enhanced, viz., increasing the gross income, reducing the costs, and stabilizing the income. Increasing incomes by improving productivity, integrated and diversified farming system, better market price realization and special policy measures are needed. The strategies require four critical pillars—technology, institutions, infrastructure and incentive structure. Livestock based policy should be based on the principles of social acceptability, economic feasibility, technical viability and resource conservation ability. Increasing incomes by improving productivity along with stabilizing income and risk management through holistic approach are needed to double the farmers income.

**Keywords:** Farmers income, livestock sector, farming system, Livestock based policy.

### **Introduction**

“If agriculture goes wrong nothing else goes right ” and “Younger people will join agriculture if it is technologically driven” Dr. M.S Swaminathan (2008) - Father of green revolution in India. Livestock production and agriculture are intrinsically linked, each being dependent on the other, and both crucial for overall food security. Livestock sector is an important subsector of the agriculture of Indian economy. It forms an important livelihood activity for most of the farmers, supporting agriculture in the form of critical inputs, contributing to the health and nutrition of the household, supplementing incomes, offering employment opportunities, and finally being a dependable “bank on hooves” in times of need. It acts as a supplementary and complementary enterprise. Livestock also serves as an insurance substitute, especially for poor rural households; it can easily be sold during time of distress. Animal husbandry promotes gender equity. The agricultural sector engages about 57% of the total working population and about 73% of the rural labour force. Livestock employed 8.8% of the agricultural work force albeit it varied widely from 3% in North-Eastern states to 40-48% in Punjab and Haryana.

NSSO’s Situation Survey 2002–03 and 2012–13 are the only sources of data on farmers’ income. The average monthly income per capita from farming increased from Rs

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1,060 in 2003 to Rs 3,844 in 2013, according to the report Situational Assessment of Agricultural Households by the NSSO, a compounded annual income growth rate of 13.7%. To double the income of farmers by 2022 would require a 15% compounded income growth rate, which is a marginal increase over the achieved increase from 2003 to 2013. However, real income of farmers had been calculated on the basis of GDP deflator, showing a real growth rate of 5.24 per cent. If the more appropriate index, the Consumer Price Index for Agricultural Labourers, is used the annual growth rate of real income for farmers falls to 3.5 per cent. With this growth rate farmers' income will double in 20 years. Therefore, in order to achieve the target of doubling farmers' income in 6 years there is a need for much greater effort and focused attention.

### **Current Livestock Population in Nation**

As per 19th Livestock census, 2012 (GOI, 2014) India's livestock sector is one of the largest in the world with a holding of 10.86% 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 huge livestock population of 512 million nos. The total livestock population in India has decreased by 3.33% over the previous census. 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. 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.

### **Current National Status in Livestock Products**

Livestock sector grew at an annual rate of 5.3% during 1980s, 3.9% during 1990s and 3.6% during 2000s. Despite deceleration, growth in livestock sector remained about 1.5 times larger than in the crop sector which implies its critical role in cushioning agricultural growth. Among the different livestock products, growth rate during 2012-13 was maximum for meat (7.87%) followed by egg (4.94%), milk (3.54%) and wool (2.95%) (BAHS, 2014). The per capita availability of milk, poultry meat and egg are 322 grams, 3.1 kg and 61 eggs respectively (DAHDF, 2015-16) as against the ICMR recommendation of 285 gm milk, 11 kg poultry meat and 180 eggs per person per year.

**Current production of livestock products in India (DAHDF, 2015-16) –**

Category	Annual production during the year 2014-15
Milk	146.3 million tones
Meat	6.7 million tones
Eggs	78.48 billion nos.
Wool	48.1 million kg

**Value of output from livestock sector in Indian Economy (GOI, 2014)**

Items	Value (million rupees) in 2012-13 at current prices	Percent (%) of total values
Milk and milk products	3496720	65.05
Meat and meat industry by products	1066050	19.83
Eggs	202510	3.77
Wool and Hair	5280	0.1
Dung	372340	6.93
Silk worm cocoons and honey	52320	0.97
Increment in stock	180150	3.35
<b>Total</b>	<b>5375370</b>	<b>100</b>

**Role of Livestock Sector in National Income**

Contribution of livestock and poultry sectors to the national economy in terms of Gross Domestic Product (GDP) is 4.1 and 0.9%, respectively. Agriculture and allied sector contributed about 18.1% to the total GDP. Out of the total agricultural GDP, livestock sector contributed about 28.7% in terms of Rs.7, 33,054 crores during 2015-16 (CSO, 2015-16 and DAHDF, 2015-16). On an average per year, average value of livestock products are nearly 1% of total export earnings and 6 % of agricultural export earnings (Kumar *et al.*, 2008). Meat and meat products are the main livestock products exported, accounting for above 90% of total export earnings from the livestock sector.

### **Livestock Role in Farmers Income**

Farmers earn income from various sources, *viz.* crop cultivation, horticulture, dairy, poultry, fisheries, other allied activities, non-farm activities, and wage employment. During the last 30 years, the income disparity between farmers and non-farmers has increased. In 1983–84 the average income of a farm household used to be about a third of that of a non-farm household. By the year 2004–05, this statistic had reduced to one-fourth. Livestock has been an important source of livelihood for small farmers. They contributed about **16% to their income**, more so in states like Gujarat (24.4%), Haryana (24.2%), Punjab (20.2%) and Bihar (18.7%) (Planning Commission, 2012).

### **Hurdles in Livestock Sector To Double The Farmers Income**

Livestock sector act as an engine for agricultural growth. Doubling the farmers' income would require addressing challenges availability of high yielding germplasm, shortage of feed and fodder, frequent occurrence of some deadly diseases *etc.* The sector has remained under-invested; and neglected by the financial and extension institutions. Livestock markets are under-developed, which is a significant barrier to the commercialization of livestock production. Besides, the sector will also come under significant pressure of increasing globalization of agri-food markets.

Major hurdles in livestock sector to double the farmer's income are listed below.

1. Improving productivity in a huge population of low-producing animals is one of the major challenges. The average annual milk yield of Indian cattle is 1172 kg which is only about 50% of the global average. Likewise the meat yield of most species is 20-60% lower than the world average.
2. The deficit of dry fodder, concentrates and green fodder currently is 10, 33 and 35%, respectively. Only 25% of forage seeds are available, that too of 15-20 years old varieties. Nearly 4% of total cultivated area utilized for fodder production is nearly constant from last three decades. The common grazing lands too have been deteriorating quantitatively and qualitatively.
3. Insufficient prophylactic vaccination and deworming. Frequent outbreaks of diseases like FMD, BQ, PPR, Brucellosis, Swine fever and Avian Influenza *etc.* continue to reduce productivity and production.
4. Available veterinary support in terms of infrastructure (for hospitals and diagnostic labs) and technical manpower are insufficient.

5. Livestock sector receives only about 12% of the total public expenditure on agriculture and allied sectors and about 4-5% of the total institutional credit flowing to agriculture and allied sectors. Insufficient funding, subsidy and bank loan as compared to other agriculture sectors
6. Insufficient Livestock insurance coverage- Only 6% of the animal heads are provided insurance cover.
7. Livestock extension- Livestock extension remains grossly neglected. Only about 5% of the farm households in India do access information on livestock against 40.4% for crop farming.
8. Organized slaughtering facilities are too inadequate.
9. Lack of access to organized markets and meager profits distract farmers from investing into improved technologies and quality inputs. Informal market intermediaries often exploit the producers.

#### **Recommendations to double the farmers income through livestock sector**

1. Increasing incomes by improving productivity along with stabilizing income and risk management through holistic approach.
2. **Improving productivity in a huge population of low-producing animals-** Crossbreeding, Upgrading and Selective breeding are the most effective way for improving productivity. Crossbreeding of indigenous species with exotic stocks to enhance genetic potential of different species has been successful only to a limited extent. Distribution of improved bulls can be practiced in remote areas where A.I. facility is not available.
3. **Increasing funding, subsidy and bank loan-** Bulk of the investment for livestock development comes from the state governments. The central government contributes about 10% to the total investment. There is hardly any private sector investment in animal husbandry. Investment linked tax incentives and attractive credit facility to private investors are missing which is needed to increase.
4. **‘National Dairy Plan’ (NDP) should be implemented-** as a National Project.
5. Systematic conservation, genetic improvement and sustainable utilization of indigenous livestock breeds.
6. **Fodder and Feed development-** Since Fodder and Feed contribute 60-70% of total recurring expenditure, thus, economic feeding will increase the profitability. Fodder Development Program along with fodder bank should be designed in every district.

7. Wider and effective immunization for important economic diseases and compulsory deworming programme.
8. **Building dairy cooperative network – like AMUL, URMUL etc.** Besides handling liquid milk along with value-added products formation fetches higher price.
9. **Promoting quality livestock products**-Testing of milk for safety and quality parameters at the collection centres to get higher price. Establish food testing laboratories duly accredited by the Food Safety and Standards Authority of India (FSSAI) to check adulteration.
10. **Organized slaughtering facilities**- Inedible offal's and animal wastes from the meat plant have large potential to be used as valuable proteins/materials for export.
11. **Strengthening value addition and processing facilities**-Adding value to livestock by-products increases profitability.
12. **Compulsory Livestock insurance**- Livestock insurance provided by the public sector insurance companies could cover only about 6% of the animal heads. Innovative and acceptable insurance models may be designed to evolve a suitable scheme for various species.
13. **Promoting contract livestock and poultry farming**- Cooperatives and agribusiness firms can promote contract livestock and poultry farming including risk coverage.
14. **Women Livestock Producer Training** -Livestock production activities are largely in the hands of women. Appropriate policy and institutional arrangements would facilitate availing credit, insurance and other inputs and marketing services. Training women would reduce drudgery to women and improve animal productivity and enhance their economic returns.
15. **Strengthening Livestock extension services**- It has been observed that farmers who use information from extension services have **80 per cent higher net income**. Livestock extension remains grossly neglected. Only about 5% of the farm households in India do access information on livestock against 40.4% for crop farming. Building up an exclusive cadre of livestock extension workers, establishment of KVKs exclusively for livestock activities and strengthening ATMA with AH experts.
16. **Public-Private-Partnership (PPP)** - Public-Private-Partnership (PPP) in extension should be promoted for convergence and sharing of resources.
17. Livestock economics, business management and market intelligence should be strengthened.

18. **Biotechnology** is set to play critical role to improve livestock production
19. **Review of current scenario of farm credit and subsidy disbursement system-** Gradually phase out all subsidies and only transfer money to farmers, calculating aggregate measure of support. This improves efficiency of govt investments.
20. **Implementing ambitious Agribusiness Hubs and establishing Special Livestock Zones (SLZ) Model like AMUL for milk production and Nammakal model for poultry production all over the country.**
21. **ICT-based agricultural extension** brings incredible opportunities and has the potential of enabling the empowerment of farming communities.
22. **Adopting Integrated and diversified Farming System-** Diversification of animal husbandry activity like **duck cum rice farming, duck cum fish farming** *etc.* Diversification can be a major game changer. It can be of three types, *viz.* Product (high value enterprises), process (precision farming), and time diversification (delinking from seasonality).
23. **Fix minimum support price (MSP) for livestock products-** Farmer is mainly concerned with the profit he gets from a particular commodity. Upward push in MSP in favour of proposed diversification livestock products will be a practical option to achieve this objective. Better market price realization is essential.
24. **Integrating all central and state subsidies-** instead of reducing costs of inputs, need to be targeted to empower farmers through infrastructure development in rural areas to promote agribusiness, food processing, dairy, poultry, fisheries and enterprises *etc.*
25. **Strengthening Organic Food Program and Organic livestock and poultry farming-** Major parts of India such as NER, HP, J&K, Uttarakhand, MP, Chhatisgarh, Jharkhand, which are organic by default, must be made Organic by Process for the producers to get advantage of market value.
26. **Climate change adaptation-** The goal of increasing productivity without impacting environment can be attained through diversification and selection of inputs and management practices that foster positive ecological relationships and biological processes within the entire agro-ecosystem.
27. **Scientific validation and adopting proven indigenous technical knowledge (ITK) to improve productivity.**

### **Conclusion**

All the ongoing schemes recommended for continuation should be classified under three mega schemes; a) Animal production b) Livestock Health, and c) Dairy development. The

strategies outlined above rest on four critical pillars—technology, institutions, infrastructure, and incentive structure. Increasing incomes by improving productivity along with stabilizing income and risk management through holistic approach.

Thus, it is concluded that genetic improvement of poor yielding livestock through crossbreeding, upgrading and selective breeding to maximize their production along with local adaptability, economic feeding practices, proper health care and management practices will lead to optimization of production. MSP for livestock products, market development, product processing, packaging, value addition, cold storage facilities, easy availability of high yielding germplasm, livestock insurance, adopting diversified and integrated farming, contract livestock farming, adopting PPP model, strengthening extension services, repetition of AMUL co-operative model for milk production and Nammakal model for poultry production, increasing backyard poultry farming, promoting organic farming to specific areas along with increasing funding, subsidy and easy availability of bank loan for livestock farming are the key ways to double the farmers income. Farmer is not a labour or poor among the poorest, he is the ANNADATA in real sense. Agriculturer (Farmer) needed to transform into entrepreneur to double the income adopting innovative approach and technology.

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