

Dynamic livestock Sector

Expectations from Union Budget 2019-20

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Livestock comprise an integral component of India's rural economy and contribute to social and economic development in several ways. They provide nutrient-rich foods (milk, meat, and eggs), dung for domestic fuel and manure, and draught power for cropping activities and transportation. In addition, they make up an important source of wealth and act as a financial institution—a living bank with offspring as interest, and risk-mitigating mechanism during times of crisis.

Key words: Agriculture, Budget, Livestock

INDIAN agriculture is dominated by small landholders. Two-thirds of the farm households have less than or equal to one hectare of cultivation land holdings. For them, crop production is not the main source of livelihood, and they are simultaneously engaged in several other income-generating activities including animal husbandry. These households have a higher endowment of family labour in relation to land and other assets they own, while animal husbandry is labour-intensive, requires small start-up capital, and the animals—being a form of reproducible asset—can be easily multiplied to scale-up the enterprise. Livestock produce a continuous stream of output, on daily basis or at very short intervals, that can be consumed within the producing households to improve the household nutritional security, or sold for cash to purchase daily consumption needs and meet other household expenditures. In India, livestock are raised as component of mixed farming systems, and derive most of their energy requirements from by-products of crops, hence lower cost of production. These characteristics of livestock production system perfectly matches the resource endowments and income requirements of small landholders.

There are considerable opportunities for livestock sector growth in India. With sustained rise in per capita income and fast-growing urban population, the food basket of Indian consumers has been undergoing a shift in favour of high-value food commodities including commodities of animal origin. Recent evidence indicates a decline in per capita consumption of foodgrains but a sustained increase in consumption of animal-food products in urban as well rural areas and among poor as well as rich households. Global market for animal food products is also expanding fast, especially in Asia and Africa, which is an opportunity for India to increase its share of exports of livestock products. Currently, India accounts for about 0.5% of the global exports of dairy products and 2.5% of meat and meat products. India's export basket has been changing; the livestock-based export items now account for more than 10% of the total agricultural exports, with buffalo meat sharing almost 90% of the livestock-based exports.

Economic performance and impacts

India experienced a tremendous growth in milk production in the past three decades, which is termed as 'white revolution' and in the

development literature it is as celebrated as the 'green revolution'. Milk production that hardly exceeded 20 million tonnes during the 1960s gradually increased to 36 million tonnes in 1982–83 and further to 176 million tonnes in 2017–18. In 1997, India overtook the United States of America as the largest producer of milk, and since then it has retained its position. Milk is now the largest agricultural commodity, in physical as well as value terms.

India's policymakers have been targeting 4% growth for the agricultural sector (including crops, livestock, fisheries, and forestry) since the ninth five-year plan (1997–2002); the target, however, has remained elusive. The realized rate of growth remained around 3%, except during the eleventh plan (2007–11), when it improved to 3.8%. Livestock sector has grown faster than the crop sector, raising its share of livestock in the total value of output of the agricultural sector from 21% in 1982–83 to 30% in 2017–18. In absolute terms, the value of output of livestock is now more than the value of output of food grains. In the past three decades, the sector has grown at a rate of over 4% a year, which is almost 1.3 times of the overall growth of the agricultural sector, lifting their contribution to

agricultural growth from 31% during the 1990s to 36% during the 2000s.

Not only that, the growth in livestock sector has been less volatile than the growth in crop sector, and has cushioned agricultural growth against climatic shocks to crops. During the crises, the earnings from sale of livestock and livestock products smoothen household consumption. At the macro level, this translates into a cushion for agricultural growth. Livestock are raised as part of the mixed farming systems extracting their energy requirements from crop residues and by-products. In the event of a climatic shock, though the production of both crops and livestock experiences a shortfall, the extent of shortfall is small in livestock production, because when crops fail to produce grains, their by-products remain available as fodder for livestock.

Agricultural growth, to which livestock make substantial contribution, has been proven to be more pro-poor than the growth in non-agricultural sectors. In India, at least two-thirds of the farm households are associated with animal husbandry. Animal husbandry though widely practiced but is more concentrated among the marginal farm households who control 57-70% of the populations of different species as against their share of 30% in the land. Over time they have consolidated their position in the livestock sector. This pattern in the distribution of livestock, together with higher growth in its economic contribution, implies that livestock has a larger effect on poverty reduction (1.4 times), than that of crop sector. The demand for livestock products is income elastic, and with increase in their demand, the poverty-reducing effect of livestock is expected to be stronger.

The other dimension of livestock production is its effect on gender disparity and child nutrition. In India, livestock production is largely in the domain of women. Women comprise three-fourths of the labour force in livestock production. Livestock development, thus, can be important pathway to economic

empowerment of women. Livestock ownership is not bounded by property rights and can be owned by women to consolidate their bargaining power within the household. Livestock impact a household's nutritional status via the family member(s) who controls the income generated from sale of livestock and livestock products. Since, women are primary caretakers of household food security as well as livestock, hence, with a greater control over income they allocate more of it to improving nutrition, health, and education of the children.

In mixed farming systems, livestock make important contributions towards preserving environment, despite these being criticized for the negative externalities to the environment through emission of greenhouse gases, overgrazing/deforestation, and water pollution. Livestock generate positive externalities to environment in terms of prevention of carbon dioxide release due to use of animal energy in place of fossil fuels, saving of natural resources, mainly land, due to use of agricultural by-products and residues as animal feed, and use of dung as domestic fuel in place of wood and as manure in place of chemical fertilizers. If the feed energy that animals draw from consumption of agricultural residues were to be obtained from the cultivated green fodders, India would have needed an additional 40 million hectares of land to produce that much energy. Likewise, Indian households use about half of the dung for domestic fuel, and if the equivalent energy were to be obtained from fuel wood, the country would have to use 1.6 million hectares for fuel wood plantation. Use of dung as manure saves about 1.22 million tonnes of chemical fertilizers (NPK); and if the existing stock of draught animals were to be replaced by tractors, it would need 13 million tonnes additional diesel to run the tractors.

Existing technological, institutional and policy support to livestock sector

India has huge livestock population of various species, but of low productivity. The growth in

livestock production has largely been driven by numbers and less by yield improvements, especially in the case of crossbred cows. Not only that, the yield growth has also started decelerating on account of several constraints, which is a serious concern.

Feed and fodder supplies have always remained short of their requirements. Area under food-feed-fodder crops, such as pearl-millet and sorghum, has declined considerably. Rice straw is available in large quantity, but is considered inferior as fodder because of higher silica content. Area under green fodder crops is limited and common grazing lands have been deteriorating quantitatively as well as qualitatively. The deficit in concentrate feed, to an extent, is on account of huge exports of soybean cakes.

There has been considerable improvement in animal health infrastructure as well as manpower, yet several diseases like foot and mouth disease (FMD), black quarter (BQ), *peste des petits ruminant* (PPR) and influenza are frequently reported from one or another region. There are also regional disparities in infrastructure and manpower; states like Jharkhand, Bihar, Madhya Pradesh, and Chhattisgarh lack infrastructure as well as manpower.

Credit is important for the adoption of improved technologies, use of quality inputs, and scaling of the enterprise. Unfortunately, the livestock sector has not received much financial support from commercial banks and other financial institutions. The share of livestock sector in the total advances to agricultural sector has hardly ever exceeded 6%. Credit to animal husbandry is treated as investment credit, that is, for purchase of animals and equipment, and construction of cattle sheds. Securing investment credit requires collateral; but the poor producers lack assets that can serve as collateral.

Institutional mechanisms to protect livestock producers from the losses due to diseases are not developed enough to provide a cushion to their livelihoods. Despite the animal insurance scheme being in

operation for more than a decade, the insurance cover is miniscule.

Except for poultry and to some extent for milk, markets for livestock and livestock products are thin, underdeveloped, and dominated by informal intermediaries. Markets for live animals are irregular and uncertain, and lack basic infrastructure and facilities. Likewise, slaughtering facilities are also inadequate. Dairy cooperatives though have played an important role in providing market access to the producers, but their spread has been highly unequal across states.

On the whole, the sector has remained under-invested. It receives about one-tenth of the total public expenditure on agriculture and allied sectors, which is disproportionately lower than its contribution to agricultural GDP. Moreover, the share of livestock in the total public investment in the agricultural sectors has been steadily falling.

Within the livestock sector, priority has been the animal health and dairy development, ignoring the research, education, extension and fodder development that together account for about 4% of the expenditure. Extension system for livestock is almost absent; hardly 5% of the farmers have access to information on animal husbandry.

Expectations from budget 2019-20

Livestock has considerable potential to accelerate agricultural growth and to contribute towards Prime Minister's vision of doubling farmers' income by 2022 provided there is an enabling policy support.

- Increase public investment in

livestock sector gradually to the level that matches its contribution in the agricultural GDP.

- Improve farmers' access to markets through developing comprehensive value chains or state-of-the art markets for live animals and their products. Outreach of dairy cooperatives has remained limited to a few states. The eastern and north-eastern States need special attention which have been by passed by the cooperative movement, and also by the private processors.
- Current system of milk pricing is based on fat and solid-non-fat contents, ignoring the input costs. There is a need to evolve a comprehensive method that considers cost of production in price determination.
- Improve flow of institutional credit for animal husbandry on the lines of crop loan for purchase feed, fodder, medicines, and other inputs.
- Dry fodder scarcity is region-specific, more in the arid and semi-arid regions. There is a need to create fodder banks or buffer-stock utilizing fodder from states where it is surplus and a large part of it is wasted in mechanical harvesting. For the purpose, attract private feed manufacturers to invest in conversion of straws into feed blocks. Besides, there is a need to focus on improving production and dissemination of quality fodder seeds and rejuvenating and managing pastures and grazing lands.
- Reorient animal health services towards prophylactic management of disease management, and

improve their outreach and efficiency by promoting mobile dispensaries and preventive vaccination campaigns.

- Despite being in existence for more than a decade the performance of this animal insurance scheme, is far from inadequate. Hence, there is a need to re-look into the scheme and re-design it in a manner that provides a comprehensive insurance covering all types of risks.
- Make veterinarians in the public sector responsible for delivery of information and services related to animal husbandry.
- Animal science research is capital-intensive and has a larger gestation period; hence it requires more investment to achieve technological breakthroughs and re-orientation of research agenda considering changing functions of livestock and climate risks.
- Increasing mechanization of cropping activities, demand for draught cattle has been declining, making them uneconomical to maintain. This requires promotion of research on 'sexed-semen technology', that offer producers a choice to select between male and female based on their economic utility for them.
- Develop entrepreneurship (say through start-ups) to convert rice straw into quality feed; and animal waste for example the dung into cooking gas.

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Jai Kisan, Jai Vigyan

- A total of ₹ 788.33 crores have been sanctioned for opening six new agricultural colleges for eastern India under Central Agricultural University, Imphal, and a new Central Agricultural University in Meghalaya.
- For the establishment of two new agricultural research institutes in Asom and Jharkhand, a sum ₹ 100 crores is allocated.
- First academic session of the Rani Lakshmi Bai Central Agricultural University has been allocated for four new agricultural colleges in Ditiya and Jhansi.
- An Memorandum of Understanding was signed for transforming the Rajendra Central Agricultural University, Pusa, Samstipur, Bihar. A proposal of ₹ 400 crores is submitted in EFC.
- Post-Graduate Institute of Horticulture is being established in Amritsar, Punjab.
- Foundation stone of the Indian Institute of Agricultural Biotechnology is laid at Ranchi for promoting agricultural biotechnology.