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## Impact of COVID-19 on livestock sector in India: An economic analysis

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### Abstract

Coronavirus or COVID-19 has made a devastating loss to the different sectors of the world. Out of which, livestock sector is the one among them which is not directly affected by the virus, but indirectly has created a great economic loss to the sector mainly because of the lockdown. The lockdown has created several issues i.e. decline in the demand as well supply of animal products. In addition, there is a rumour that COVID-19 can be spread through the consumption of animal products. The coronavirus pandemic has been a public health emergency all over the world, and the continuous phase of lockdown for a long period has created a major impact in the different sector of the world. Likewise in India, various sectors have been drastically affected and livestock and poultry sector which is the fastest growing sector in India is tremendously affected. There is a great impact of COVID-19 and its associated lockdown on livestock and poultry sectors in India that includes impact on dairy and associated value chain, poultry, nutrition and health care and labor availability. In this context, the present article is going to depict the economic analysis that indirectly reflects the impact of COVID-19 outbreak in India on the livestock sector.

**Keywords:** COVID-19, economic analysis, gross value added, livestock sector, lockdown

### Introduction

Coronaviruses are one of the important human and animal pathogens. At the end of 2019, a novel coronavirus was identified as the cause of a cluster of pneumonia cases in Wuhan, a city in the Hubei Province of China. It rapidly spread, resulting in an epidemic throughout China, followed by an increasing number of cases in other countries throughout the world. In February 2020, the World Health Organization designated the disease COVID-19 and declare as Pandemic on 11<sup>th</sup> March. The virus that causes COVID-19 is designated severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) <sup>[1]</sup>.

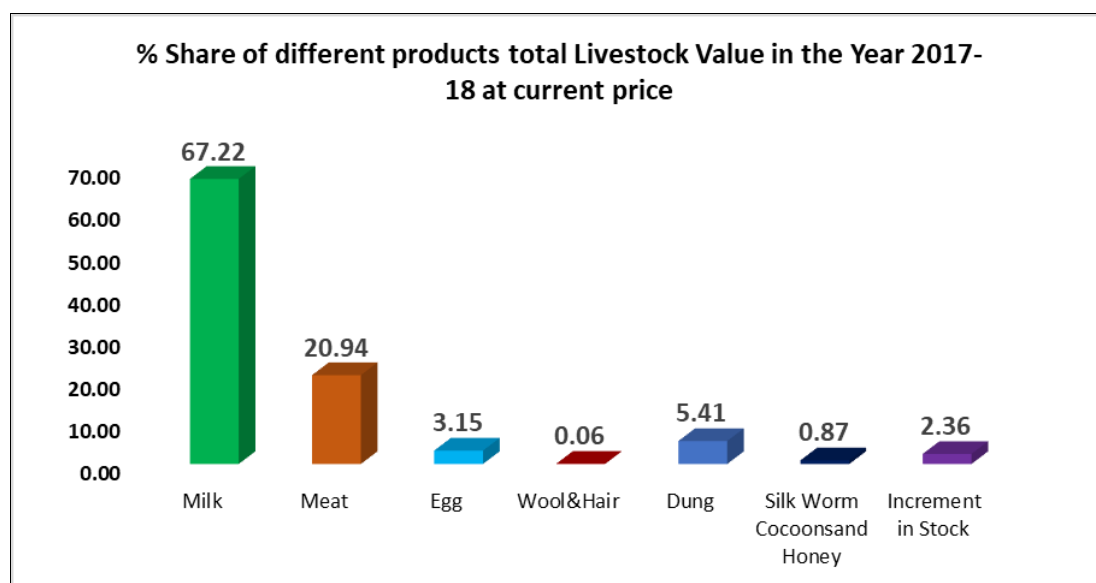
COVID-19 has created a severe negative impact on different sectors of the country including the livestock sector, an emerging and fast growing sector in India. The livestock sector in India has come to a standstill, there has been a drastic change in the temperament and interest of livestock keepers including poultry farmers (both commercial and backward poultry farmers), especially the marginal and small-holder farmers. When the Government imposed the lockdown in the country to break the chain of COVID-19 infection that spreads at the faster rate, the demand for the animal products i.e. meat including poultry have witnessed a huge decline in the market due to rumours that the virus can spread through the animal's meat especially through chicken. It has been seen that the commercial birds are sold at very lower price (10 rupees per piece). In addition, there was a drastic decline in the consumption of milk and milk products that is mainly due to supply (consumers are not able to purchase the milk/milk products at their nearby locality due to restriction in the movement) and decrease in demand (shutdown of sweet shops, tea shops and decline in the income of daily wage earner) issues. There are more than 156 Million rural households in India which solely depend on livestock as one of major source of income. Among them, more than 85% includes landless, marginal or small farmers those who own less than two hectares of land, where dairy/goatery/poultry farming is one of the major sources of their income, which helps them to sustain over their livelihood. Income earned from dairying/goatery by a landless farmer generally being used for family needs of the farmer and to maintain and manage the livestock. On the other hand, the cattle may fall sick due to feed shortage, rise in feed prices, and unavailability of forages during lockdown period. According to NIANP (2015), there is 21 per cent, 26 per cent and 34 per cent shortage of dry, green and concentrate feed respectively.

This will also further increase. Due to shortage of different feed, cattle are underfed in most of the State especially eastern Indian States. Due to lockdown, the price of feed especially concentrate has increased by 150 to 200 rupees per 50 kg of bags, while dry fodder has increased by 1 rupee per kg. Already, the milk yield per animal is very low in most of States, difficulty to access and low availability of feed will push the milk yield further below. As a result, the overall income of farmers have reduced. The above challenges will have negative impact on livelihood of small and marginal farmer times to come.

In this context, the present paper tries to estimate the economic loss incurred in the livestock sector due to COVID-19 based on the previous gross value of livestock sector by assuming different scenario.

### Data and Methodology

The annual Gross Value Added (GVA) data of livestock sector provided by Central Statistical Organisation, Government of India (National Accounts Statistics-19) has been used in this study. The annual GVA data of livestock sector for 2018-19 and 2019-20 are not available. Therefore, we have derived the annual GVA of livestock sector for 2018-19 and 2019-20 from agriculture GVA at current price by assuming the average share of livestock sector at the rate of 37 per cent. The share of different livestock products to total livestock GVA is calculated by assuming similar share pattern of previous year (2017-18). Raw Milk and milk products constitute about 67 per cent of total gross value of livestock, while meat group constitutes about 21 per cent.



**Fig 1:** % Share of different products total Livestock Value in the Year 2017-18 at current price

The GVA of livestock sector for the year 2020-21 is calculated based on the earlier data. At the outset, the assumption has been made that if there is any hindrance in the growth rate, the nation still has the capacity to produce the same level of output of livestock sector as like the rate that was being produced in the year 2019-20. But the real output would be much different. Since the lockdown was imposed in the last week of March, it would have created a huge impact in the GVA of all livestock products badly due to demand and supply issues. In March, all government and private institutions were keenly interested to achieve their annual targets. Though, the nationwide lockdown was imposed from March 25, many states had already imposed a lot of restriction from mid-March in different forms. As mentioned earlier, because of the false communication that spreads faster that COVID-19 can spread through meat consumption especially poultry meat, the demand for poultry meat could have declined drastically. It has been observed that most of the commercial poultry farms had culled the birds or sold them at very lower price even at the rate of Rs. 10/ per bird. India has 851.81 millions of poultry bird, out of which 534.74 comes under commercial poultry and 371.07 are under backyard poultry. In addition, due to outbreak of COVID-19, the Asian and middle eastern countries had stopped the import of carabeef and chevon. We assume that the production and total value of meat has declined, which contributes around 21 per cent to total livestock GVA. Likewise, the value of wool also

would have declined due to lockdown.

India ranks first in the global milk production and produces around 188 million tons litres of milk, out of which 103 million tons sold in the market (55 per cent of total milk produced) including both formal and informal market. It is important to note here that, only less than 30 of milk are procured by formal sector (government/private) and rest 70% of the milk is being utilized through informal channels (sweetshop, hotel, tea shops and such others). It has been observed that due to decline in the demand for milk and milk products, milk procured by the formal sector has been reduced by 10-20 per cent. On the other hand, all informal channels (sweet shops, tea stall and hotels) those that procured 70% of milk, got reduced and it is observed to be that there are no procurement from the farmers since 24<sup>th</sup> March, due to restrictions in movement and decline in demand. In some cases, it has been seen that farmers are dumping milk in water channel or just pouring them in the river or any water source. Likewise, sweet shops and hotels are closed, milkmen/village milk traders are not buying milk or milk products from the smallholder farmers. Therefore, we assume there would be a tremendous loss in total value of milk and milk products<sup>[2]</sup>. On the other hand, the cattle may fall sick or decline in provision of maintenance ration due to feed shortage, rise in feed and fodder prices, and unavailability of forages during lockdown period. As mentioned above, there is a shortage of more than 21, 26 and 34 per cent of dry, green and

concentrate feed, as results cattle are underfed. Further, the lockdown has imposed the farmers to feed the animal with the diet that is below than their average daily intake as like earlier days. The increase in the feed cost in the market and unavailability of fodder due to different reasons will definitely have negative impact on livestock productivity and reproduction. <sup>[3, 4]</sup> Therefore, we assume that there would be low increment of stock compared to previous year and so there would be a loss of value.

**Table 1:** Percentage loss of value in livestock products in different scenario

	Milk	Meat	Egg	Wool Hair	Dung	Silkworm Cocoons and Honey	Increment in Stock
Senario-1	3	10	0	3	0	0	0
Senario-2	5	20	5	5	0	3	0
Senario-3	10	30	10	10	0	5	2

## Results and Discussion

Table 2 shows the loss of value of livestock products due to impose of lock down in different scenarios. At scenario 1, where we assume economic activities in livestock sector is not much affected by the lockdown and so there would be loss of 3 per cent in value of milk, 10 per cent in value of meat and 3 per cent in value of wool & hair. The estimation indicated that there would be a loss of Rs. 510.24 thousand million at scenario 1. In scenario 2, there would be loss of 960 thousand million Indian rupees, where we assumed 20 per cent loss in value of meat and 5 per cent milk and 5 per cent in egg. In the scenario (3), there would be a loss of Rs. 2711. 20 thousand

million. In the third scenario we assume that there would be a loss of value 30 per cent in case of milk, 10 per cent of milk, 10 per cent of egg and 2 per cent in increment of stock. Looking at the present situation, we may be end with third scenario for 2020-21. There is argument that the budgetary support of 15000 crores for animal husbandry infrastructure development through private sector involvement and reverse migration to the rural economy will boost the dairy sector development in the last quarter of the year. However, we assume that the impact of budgetary support on livestock sector will have in 2021-22 <sup>[5, 6]</sup>.

**Table 2:** Total Value of Livestock product in different scenario Values in 000, millions

Year	Milk	Meat	Egg	Wool & Hair	Dung	Silkworm Cocoons and Honey	Increment in Stock	Total Value of Livestock	Loss
2017 - 18	7015.3	2185.4	328.44	5.99	564.24	90.96	246.23	10436.56	0
2018-19	7440.65	2349.91	349.82	6.66	599.69	96.62	262.09	11105.45	0
2019-20	8285.56	2616.75	389.55	7.42	667.79	107.59	291.85	12366.51	0
2020-21 (1st)	8037	2355.08	389.55	7.42	667.79	107.59	291.85	11856.27	-510.24
2020-21 (2nd)	7871.28	2093.4	370.07	7.05	667.79	104.36	291.85	11405.81	-960.7
2020-21 (3rd)	7457.01	785.03	350.59	6.68	667.79	102.21	286.01	9655.31	-2711.2

## Conclusion

The prolonged lock down and import ban on different meat by Asian and Middle Eastern countries have created a huge economic loss to the livestock sector in India. Our estimation indicated that there will 2711.2 thousand million loss in the value of livestock sector due to impose of lock down. The loss may be more as the COVID-19 virus has been spreading very fast. Although, Govt of India has already undertaken different steps i.e. 100 percent vaccination to cattle, improve the availability of quality feed and forages, easy loan for dairy business to boost the livestock sector, following interventions can be undertaken. There is a great shortage of milk processing unit as well as bulk milk coolers in rural India especially in Eastern India, lack of better supply chain management, all milk produced are not procured properly. Farmer should be given training on different capacity development skills for processing milk and also maintaining personal hygiene. So that the surplus milk can be utilised in the preparation of different milk products. Government should give incentive to the farmers and small processing centre that procures milk at the village level. Effort should be made to improve the share of formal sector for procuring the milk. Animal feed should be distributed to all dairy farmers (not only MPCs members) at least for three months at subsidised rate, where Panchayat can play a major role. The loss incurred

by the livestock keepers should be compensated which can boost the livestock farmers for further improvement of livestock production in the country.

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