

IMPACTS OF COVID-19 ON LIVESTOCK PRODUCTION IN SUDUR PASCHIM PROVINCE OF NEPAL: ASSESSING GOVERNMENT INTERVENTIONS AND LESSONS LEARNED

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ABSTRACT

This study examines the influence of COVID-19 pandemic on livestock sectors in Sudur Paschim Province (far western province) of Nepal with a focus on the government's response. Analyzing provincial interventions in the livestock sector, we present findings from a primary survey and interviews with livestock farmers, agri-business traders, market agents, and key stakeholders across Kanchanpur, Kailali, Doti, and Achham districts. These districts represent the diverse agro-climatic conditions of far western Nepal. Using mixed methods, we combine qualitative and quantitative data to analyze the impact on livelihoods, business performances, employment, and income for livestock farmers and traders compared to the pre-pandemic scenario of 2019. The pandemic significantly disrupted the livestock and fresh meat production system due to supply chain disruptions, affecting all stakeholders – farmers, producers, suppliers, traders, agro-businesses, and consumers. The repercussions varied among these actors. Dairy farmers experienced a 50-60 percentage income loss, while poultry farmers had to sell birds at half price. The dairy, poultry, and fish sub-sectors were particularly hard-hit. Despite government support, assistance primarily reached well-off farmers and larger businesses rather than smallholders. This study not only underscores lessons learned for Nepal in managing the pandemic and similar disasters but also offers insights for other countries in South Asia facing comparable constraints and opportunities. By investigating the pandemic's repercussions and government interventions in Nepal, this research contributes to better preparedness and response strategies for future crises in livestock and agriculture.

Keywords: Impact of COVID 19, Livestock Production, Far western Nepal

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INTRODUCTION

The COVID-19 pandemic stands as a historic and disastrous humanitarian crisis, representing one of the most significant challenges humanities has encountered in the past century. The number of people infected and dying from COVID-19 has been increasing day by day. In an effort to control the outbreak, the Government of Nepal implemented a lockdown from 2nd March 2020 to the end.

of August 2020, severely impacting the physical, mental, social, and livelihood aspects of a large portion of the population (Raut, 2020). Subsequently, Nepal's economy gradually reopened starting from the first week of September 2020. This lockdown not only disrupted the movement of people but also seriously affected the food supply chain, leading to significant disruptions in food production, supply networks, and overall food security in the country (Adhikari et al., 2020). During the 17-week lockdown, Nepal's GDP is estimated to have fallen by 2.12 percent first time in the last two decades in fiscal year 2019/20 due to the impact of Covid-19 pandemic which is sever than devastating earth quake of fiscal 2014/2015 (MOF, 2021). National poverty rate increases by **22%** during the lockdown (Pradesha et al., 2021).

The livestock sector holds a crucial position in the agricultural system, contributing to nearly one- third of the agricultural GDP (AGDP) and around 7% of the national GDP (CBS, 2019). Within the livestock sector, the dairy industry emerges as the primary contributor to the national GDP. Additionally, goat farming plays a significant role in GDP contribution and livelihoods, especially in the Sudur Paschim Province. Rapid commercialization of goat farming has been observed in peri-urban areas of this province. Moreover, sheep and Himalayan goats (Chyangra) play an essential role in the mountain economy of Sudur Paschim. Given this context, it is important to investigate the impact of COVID-19 on the livestock sector, particularly among dairy farmers, to address the potential for increasing incomes, reducing poverty, and enhancing food security. While studies on the effects of COVID-19 have been conducted globally, there is a dearth of targeted research on the Sudur Paschim Province. Understanding these effects and fostering the adoption of preventive practices is crucial for the prosperity of livestock producers and the formulation of effective policies. Despite an increasing body of knowledge on COVID-19's impact on livestock, there remains a lack of literature on the adoption of preventive practices in Nepal. This study aims to address these gaps by examining how dairy farmers in Sudur Paschim Province coped with and adapted to the challenges posed by COVID-19.

MATERIALS AND METHODS

Study Area

The study area is Sudhur Paschim Province of Nepal. Sudur Paschim Province covered Batidi, Darchula, Bhajang, Bajura, Dadheldhura, Doti, Acham, Kanchanpur and Kailali districts provincial government official records. Field-level investigations

were conducted in the selected districts, specifically two municipalities from each district. Key stakeholders in the livestock industry, such as Veterinary Hospitals, Specialized Livestock Service Centers, livestock units in municipalities, as well as leading agro-vet and agricultural market centers were consulted.

Limitations of the Study

This study is confined to Sudur Paschim Province of Nepal, focusing on dairy farmers organized in dairy cooperatives and individuals. The available respondents might have provided limited information in some instances. The study did not cover heavy investment-required prevention strategies. Variations in dairy development across different districts were not extensively explored. Insufficient reliable data and geographical challenges during fieldwork affected the study. Some farmers were unwilling to share information due to personal reasons. Additionally, the study had to be completed within a limited time and resources due to its affiliation with the MOLMAC target program.

Methodological Approach

To analyze the impact of the COVID-19 crisis, a quick survey (Fig 1) was undertaken using the following approaches:

- a) Discussions with key market agents and informants to understand the impacts on agri-business and market centers in the concerned districts.
- b) Direct interaction with 5-10 farmers in each district to gather information on the adverse effects of COVID-19 on farmers and the agricultural sector.
- c) Analysis of global reports and studies to provide insights into the larger context of the crisis.

The survey encompassed various tools and entities, as shown in the Fig. 1 below:

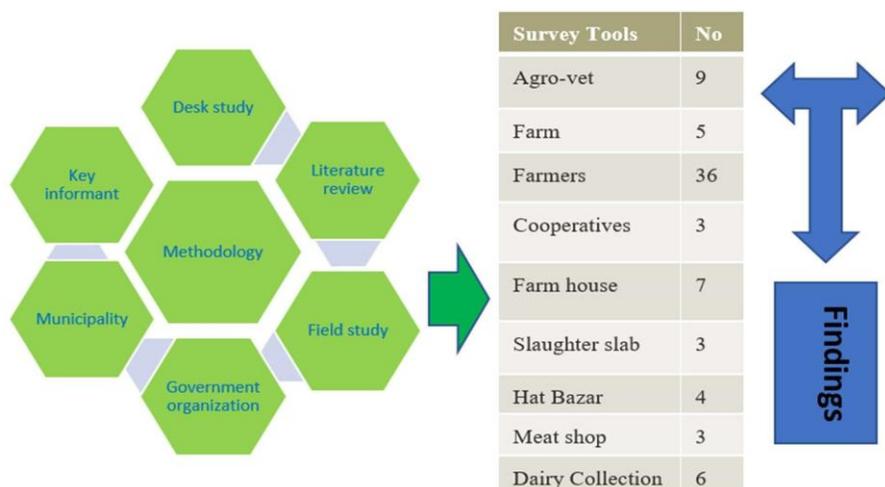


Figure 1: Survey tools of COVID 19

RESULTS AND DISCUSSIONS

In Nepal, 95% of the 3.7 million landholding families practice owner farming (FAO, 2020). These smallholders predominantly rely on family labor, with a significant portion of their production for household consumption. The COVID-19 lockdown, imposed since 24th March 2020 and partially lifted in September 2020, caused disruptions across various aspects of farming and livelihoods.

Impact of the COVID-19 crisis on the Milk supply chain

Based on the outcome of the quick survey, the impact of COVID-19 pandemic has impacted on the supply chain following the lockdown, the closures of dairy food outlets and restaurants, as well as the prohibition of all types of social and cultural programs, had sharply decreased the market demand for milk. As milk is a perishable item, milk marketing channels have encountered problems very early on in this situation. Reports have found that farmers have had to throw away their farm milk onto the street as an act of a symbolic protest as there were no alternative ways to sell. Nepal Dairy Farmers' Association claimed that about 4–6 million liters of milk have remained unsold (Nepali Patra), which has caused an estimated daily loss of 210 million Nepalese rupees (1.7 million USD). With the incidence of COVID-19, the dairy industry in Sudur Paschim Province has suffered significantly due to the reduction in overall demand of about 25-30% milk in the country, at least during first 1 month after the lockdown, that is, since March 24, 2020. The household consumption being the contributor of only about 25-30% of the overall milk usage of the province, such marginal increase in consumption was insufficient to compensate.

Impact of the COVID-19 crisis on Meat Production

A quick household survey was conducted in April, approximately a month after the commencement of lockdown measures, within Sudur Paschim Province. This survey unveiled the multifaceted impact of the COVID-19 pandemic during the lockdown period. Based on the findings derived from this survey, we arrived at the conclusion that the COVID-19 crisis has significantly affected meat production, causing a substantial reduction in the availability of goods and raw materials, primarily within the poultry sector. Specifically, it was observed that the availability of these resources dwindled to between 50% and 75% of their normal level. In terms of pricing dynamics during this period, changes were noted in various segments of the meat industry. Broiler chicken prices witnessed an increase of 10% to 20%, while local chicken meat experienced a price hike of 5% to 10%. On the other hand, fish meat prices surged by 25%. Regarding meat sales volume, the survey indicated that goat meat sales decreased by a substantial 70% to 80%. Broiler chicken sales were also impacted, with a decline to 40% to 50% of their usual volume. Local chicken meat sales witnessed a milder decrease, down to 4% to 5% of the normal quantity. Meanwhile, fish meat sales decreased to 50 kilograms.

Regarding damage of meat business is 70-75% and fluctuation of meat business, the found to 60-80% of meat (Boyle et al., (2020) in USA explained that many processing plants shut down due to causes of 45% reduction in pig processing capacity. (FAO, 2020) studied found that in pig 27 percent lowers the price and 30 percent shortage in processing plant similar instant found in America, Egypt, Jordan and Tunisia. Regarding selling of the meat and support from the municipality created for an outbreak to reduce the price of live chicken, it needs to reduce the price of grain for feed preparation, facilitate to make for transportation grant assistance and interest should be discounted. Attia et al., (2022) found that the poultry sector affected covid-19 pandemic lost Bangladesh \$825 million, Egypt farm profit fell by 20% in the first half of 2020, compared with 2019, Projected losses were estimated in India \$3053 million, Indonesia the economic growth fell from 4.97% to 2.97%, in Ghana. Myanmar decrease in demand in 60% broiler farms 40% of layer farms, approximately 30% of broiler farms and 10% of layer farms have closed 42% of long-term farm workers have been laid off, Nigeria substantial drop in sales and market price of eggs (dropped approximately 20%). The impact of COVID-19 crisis can be concluded that the least developed and developing countries are highly affected due to shortage of alternate management of transportation and cold chain facilities then developed country.

Impact of COVID-19 crisis on unavailability of Vet/ technician

Immediately after lockdown we carried out a short survey analyzing the impact of the **COVID-19** crisis on livestock production on Sudur Paschim Province. Based on the outcome of this survey, we concluded that the respondents reported that the buffaloes, goat, pig and chicken died due to illness and unavailability of veterinary doctor. Medicines were not available in the market. The distribution of essential medicines, owing to their pivotal role in the economy, should be made readily accessible without cost. If we analyze globally, in Ghana, the quarantine report shows before lockdown and during lockdown the animal entry point were reduced drastically leading to increases in the price of meat to 61% and 64% respectively Frederick and Obese, (2021). The sudden restriction of movements on farmers, and veterinary professionals increase stress and devastate immune system, increase prevalence of animal disease affecting productivity and welfare of animals Fardel et al., (2020). The farm disease surveillance, shortage of feed ingredients, veterinary supplies, closure of processing facilities, movement and livestock input control, shortage of labour increased medication and feed cost causes fragile livelihoods and making them more vulnerable to COVID-19 effects Seleiman et al., (2020); Ejeromedoghene et al., (2020); Hossain et al., (2020); Mishra et al., (2021). The lockdown restriction of movement, transportation limited availability of veterinary treatment, vaccination, limited health care greatly impacts the reproductive efficiency and productivity of animals (Biswal et al., 2020). The study of impact of covid-19 in lockdown period can conclude that the unavailability of technician greatly affects the health of animal in Nepal.

The lockdown undoubtedly played a vital role in curbing the spread of the COVID-19 disease. However, its effects were significant on daily consumption, livelihoods, and overall well-being of those reliant on the affected sectors. The experience of adhering to social distancing and precautionary measures during lockdown serves as a valuable lesson for future preparedness. Collaboration between private entities, NGOs, and citizens will prove crucial in handling similar situations effectively. To mitigate the impact of COVID-19, implementing strategies such as subsidizing bank loans with a 1% interest rate for agricultural ventures is recommended. Such targeted subsidies ensure transparency and effective governance, benefiting farmers engaged in various aspects of agriculture, including milk, meat, egg production, processing, marketing, and storage. These strategies are instrumental in minimizing the impact of the crisis on livestock producers. Facilitating the implementation of interest rate subsidies on bank loans for livestock production at local and national levels is essential for sustainable agriculture. The distress sale of milk, which led to reductions of up to 60%, and the 50-75% decline in poultry meat production, has resulted in significant economic losses and forced many small-scale farmers into poverty and migration. Such impacts are observed globally, with developing countries bearing the brunt due to limitations in transportation and cold chain facilities when compared to developed countries.

CONCLUSION

This study underscores the profound impact of the COVID-19 pandemic on the livestock sector, agribusiness, and supply chain systems in Sudur Paschim Province of Nepal. The pandemic-induced lockdown disrupted both milk and meat production, leading to distressing consequences for farmers and livestock-related businesses. The unavailability of veterinary services further compounded challenges, affecting animal health and productivity. Efforts to mitigate these challenges should include strategies such as subsidized bank loans and targeted support for livestock production. The need for a resilient and adaptable agriculture sector has never been more evident, as the lessons learned from the crisis are invaluable for shaping future policies and practices. Collaborative efforts between all stakeholders, including governments, private sectors, and individuals, will play a crucial role in building a robust and responsive agricultural system that can withstand similar challenges in the future.

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