

# Mitigating the Impact of Covid-19 on Ghana's Livestock Industry: The Role of Stakeholders

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## ABSTRACT

COVID-19 a global health pandemic since its outbreak in Wuhan, China in December 2019 continues to cause major problems to various sectors of the global economy. In Ghana, the pandemic has negatively impacted the livestock sector in feed production and supply, supply of agricultural inputs, veterinary services delivery, livestock trade, capacity building, and slaughtering, processing, and marketing of livestock products. Therefore, the need to develop suitable strategies to counteract these negative effects on actors along the livestock value chain to ensure sustainable livestock production for food security and enhance wealth creation. The adverse effects of COVID -19 on the livestock industry and mitigation strategies in response to the effects of the pandemic are documented. Sensitization of stakeholders on such mitigation strategies including their roles will make the livestock industry more resilient and respond more appropriately to future pandemics.

**Keywords:** Animal genetic resources, Food security, Livelihoods, Pandemics.

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## I. INTRODUCTION

Livestock and livestock products play very important roles in the socio-economic development of most developing countries including Ghana. They serve as a source of food (eggs, meat and milk), income, manure, traction and transport as well as provide financial aid and enhance social status among others [1]. The African livestock sector contributes between 30 and 80% of agricultural Gross Domestic Product (GDP) depending on the region and plays critical role in economic, food and nutritional security [2]. In most African countries, livestock continues to support and sustain the livelihoods of actors along the value chain including producers, traders, transporters, slaughter facilities/processors, feed manufacturers and veterinary drug suppliers. Unfortunately, the livestock sector has been adversely affected by the COVID-19 pandemic since its outbreak, requiring the need to develop suitable strategies to offset its impact on the national and international fronts. These impacts have been highly heterogeneous across different areas of the globe. In Africa, there was limited access to inputs, animal feed, labour, and markets [3].

In Ghana, these negative impacts have been felt on activities of stakeholders along the livestock value chain from feed production, supply of agricultural inputs, provision of veterinary services, livestock trade, transport, slaughtering and processing to marketing of livestock products [4]. In general, the pandemic has reduced the productivity of livestock and increased morbidity and mortality rates leading

to substantial economic losses to many stakeholders [5]. On the socio-economic front, the restrictions imposed as a result of the outbreak of COVID-19 including lockdowns, mass quarantine and transport bans limited movement and operations of livestock workers. These also affected the food production and distribution of agricultural products [6] consequently decreasing access to feed, drugs and other essential farm inputs [7]. Ultimately, the effects stated are threats to food security therefore necessitating the need for interventions that enhance the capacity of developing countries such as Ghana to manage the current situation and also safeguard against future food insecurity outcomes as a result of subsequent outbreaks [8].

In a paper on the impact of COVID-19 pandemic and global food security, Mardones *et al.* [9] indicates loss of jobs for agricultural workers, livelihoods, food safety and animal health human nutrition and public policy. In this review, we document the challenges of the COVID-19 pandemic along the livestock value chain in Ghana and identify innovative technologies available to key stakeholders for sustaining livestock productivity in safeguarding the livestock sector against future pandemics.

## II. IMPACT OF COVID-19 ON GHANA'S LIVESTOCK INDUSTRY

COVID-19 is caused by severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2) [10]. The outbreak of this pandemic in China in December 2019 continues to

pose serious health and socio-economic challenges to the world. According to Haque *et al.* [10], COVID-19 induces a range of effects in livestock that is reflected economically since human health and livelihood are intertwined with animal health. The negative impact of the pandemic on the livestock industry in Ghana has been felt especially in the area of animal production and health.

#### A. Animal Production

Ghana had a total livestock population of 17,709, 547 in 2018 as reported in the Ghana Statistical Agricultural Census before the outbreak of the COVID-19 Pandemic (Table I). As a result of the pandemic, there is presently a shortage of feed ingredients including maize, soybean, and wheat bran that the poultry and pig farmers heavily depend on for compounding rations for various species of farm animals. Shortage of these feedstuffs has led to high unaffordable prices (Table II), increased production costs, and decreased production and marketing of livestock products, culminating in reduced profits and economic loss to farmers, thus threatening the survival and viability of most livestock businesses. Some farmers in a bid to cut-down costs have changed their formulations for feeding birds sometimes to inferior rations leading to a decrease in productivity (e.g., reduced weight gain and birds taking a much longer time to reach market weight) and a decline in profits. Other farmers have resorted to selling their birds prematurely, because of the shortages and high price of feed ingredients.

TABLE I: LIVESTOCK POPULATION

Type of Livestock	Number	Percent
Ruminants (Cattle, sheep, goats)	3,758,647	21.2
Non-ruminants (Pigs, donkeys, horses)	513,412	2.9
Non-traditional (Snails, grasscutters, rabbits etc.)	350,662	2.0
Poultry (chicken, guinea fowl, duck, turkeys, quail etc.)	13,086,826	73.9
Total	17,709,547	100.0

Ghana Statistical Agricultural Census (2018).

TABLE II: COST OF INPUT AND EGG FROM 2020–2022

Ingredient	Price (*GHS)		Increment	
	2020	2022	(GHS)	(%)
Maize	70	185	115	164
Soya bean	105	300	195	186
Wheat bran	25	50	25	100
Concentrate	180	360	180	100
Egg per crate	15	23	8	53

Source: Small Scale Poultry Farmer's Association of Ghana (2022).

\* GHS = Local currency.

1 GHS = 5.601 US\$ as at May 2020 (interbank rate).

1 GHS = 7.109 US\$ as at May 2022 (interbank rate).

Haque *et al.* [10] in a recent review on the impact of COVID-19 on livestock health and production had also indicated that the coronavirus crises affected the availability and supply of materials for livestock feed such as soybeans, maize, barley, and wheat worldwide. COVID-19 has adversely impacted funding of the Government of Ghana for the purchase and supply of fertilizers to farmers at subsidized rates for cultivation of foodstuffs including very important ingredients such as maize, soybeans and rice. Shortages of fertilizers and high prices of these feedstuffs have negatively affected the viability of many livestock businesses.

Another implication of COVID-19 on livestock production is the reduction in the availability (supply) of farm inputs including breeding stock (e.g., day-old chicks), labour, vaccines semen and drugs for disease control consequently leading to high prices of these products [4], [11]. In Ghana, for instance, most agricultural inputs are sourced through importation. In compliance with the social distancing and safety protocols including the closure of borders and trade disruptions that emerged as a result of the outbreak, farmers were denied access to these inputs. Restrictions to movement and the closure of schools, hotels, and entertainment centres among others led to an “egg glut”. Demand dwindled and farmers could not dispose of daily production leading to losses. The demand for day-old chicks also reduced drastically as local producers (Hatcheries) were no longer producing and the importers were no more importing due to low market demand and trade restrictions. Furthermore, the movement of animals to the slaughter and sales points declined drastically resulting in a reduced availability of meat and other animal products. The limited farmer access to breeding equipment and biological resources including semen due to the restricted movement was also reported to disrupt supply chains on both national and international fronts [12], [13].

The pandemic thus led to the disruption or termination of breeding programmes. Restriction on movements had a great impact on cattle producers who primarily herd their animals to graze on communal grazing lands. This was in agreement with the observation by Haque *et al.* [10] who reported that transhumance pastoralists were hampered by movement restrictions making it difficult for farmers to adequately feed their livestock. Some farmers had to switch to feeding animals with concentrates which could be quite expensive for an average farmer [14]. Herdsmen have had to resort to other ventures as a means of livelihood to make up for their basic needs. The issue of scarcity of feed resources did not only affect transhumance farming systems, but also industrial feed producers (Feed Millers) who had to battle with production amidst the high prices of feed ingredients and competition with other industries for these same products.

Training programmes for staff and farmers were reduced due to social distancing and restrictions, and the availability of skilled labour for farms was negatively impacted as was also observed by other researchers elsewhere [15], [16]. Ultimately, the effects stated are threats to food security therefore the need to develop interventions that enhance the capacity of African countries to manage the current situation and also safeguard against future food insecurity outcomes as a result of subsequent outbreaks. In the poultry industry, for instance, it is projected that the COVID-19 pandemic will affect consumption, transport and the economics of poultry farming and therefore stakeholders including farmers and veterinary staff.

#### B. Animal Health

During the lockdown, the movement of veterinary staff and farmers was restricted. This adversely affected animal healthcare delivery services especially in the urban areas, leading to the loss of farm animals especially, poultry and consequently financial losses. The cost of veterinary care increased, affecting the cost of production for farmers

resulting in price increases of meat and meat products. Restricted movement of people has been reported to hinder preventive measures against animal diseases [15] and this lack of attention to prevention may increase the risk of zoonotic disease transmission [10]. Also, the restricted movement affected the supply of drugs and vaccines on the market because production was stalled in the countries of origin. Currently, the supply of drugs and vaccines has remained inconsistent with some important vaccines and drugs still out of stock, affecting the quality of animal healthcare delivery.

The COVID-19 pandemic also led to a diversion of public attention more to human health since it was not directly affecting animals. Outbreaks in animal diseases during the COVID-19 pandemic were not given much attention. A case in point is the outbreak of African Swine Fever which occurred around the same period in 2019 during which many pigs were lost in Ghana. The attention of the Government has been diverted to human health and for this reason, minimal resources were provided for the animal health sector to procure vaccines and drugs for animal disease control, leading to the loss of many animals to diseases. The situation has not seen much improvement with the supply of essential animal vaccines being still erratic resulting in very high price increases. Additionally, there has also been a serious outbreak of Avian Influenza (Bird flu) in some parts of the country in recent times, where many thousands of chickens have been lost to the disease. Many farmers have lost their investments and livelihoods as a result of this bird flu outbreak. Enforcement of Legislations on the control of animal diseases is presently not adequate in Ghana and needs an urgent review by stakeholders.

Veterinary Laboratory Services were also adversely affected. Laboratory services for import and export have reduced and imports or exports have dwindled due to trade restrictions and low business opportunities.

Surveillance and control of animal diseases which is the main focus of the Veterinary Labs has been lost due to a lack of resources to purchase reagents and other consumables. The capacity of the veterinary laboratories to carry out disease surveillance has badly been affected hence the number of animal disease outbreaks in the country at the moment. The capacity of the Labs has now been channelled into testing humans for COVID-19 and this could adversely affect the animal industry in Ghana.

### III. INTERVENTIONS FOR SUSTAINABILITY OF THE LIVESTOCK INDUSTRY

Major impacts of the COVID-19 pandemic on livelihoods and food security are presently being experienced in Ghana as a result of the adverse effect of the pandemic. It is therefore essential that the livestock industry, device sustainable measures to sustain productivity. The success of these interventions will depend on the interest, active collaboration and participatory roles of all stakeholders including governments, policymakers, farmers, the private sector and scientists to keep the livestock value chain functional.

#### A. Animal Production

Farmers have to be supported and capacitated to increase the production and supply of maize, soybeans and wheat bran at reasonable prices for sustainable livestock production. This calls for the establishment of large-scale storage facilities for animal feed against future shortages. The need to mechanize agriculture (especially through the use of irrigation) to enable crop agriculture production of these feed inputs all year round and limit the overdependence on rainfed agriculture which can be affected by the vagaries of the weather cannot be overemphasized. The development of affordable high yielding maize and soybean varieties and their incorporation in the animal production value chain is very important.

There is also the need for government to implement policies to restrict the export of feed ingredients such as maize and soybeans that the livestock industry especially poultry and pigs depend on to ensure sustained availability to local farmers. Presently, there is a ban on the export of soybeans by the Government which is a very good initiative.

Feed constitutes a major cost (70–80%) in livestock production [11]. Feeding of animals has become problematic during this COVID-19 pandemic era. This calls for increased research effort in the use of cheaper, alternative/non-conventional feedstuffs in the diets of livestock to curb the ill effects of the pandemic. Also, the establishment of artificial pastures and processing of grasses into hay and silage for use by livestock farmers is key to ensuring the availability of feed for all year-round livestock production [17], [18]. Additionally, there is a need to develop disease-resistant and climate-resilient livestock breeds to sustain production under harsh conditions. Definitely, policymakers should strengthen their commitment to fund strategic innovative research in animal agriculture. The private sector should also be incentivized to invest in animal agricultural research. By supporting research institutes, it will be possible to better address potential future crises and create the necessary commitment to participate in international Scientific cooperation.

The government should also encourage Private sector involvement in livestock production. One of the major effects of COVID-19 on the livestock sector in Ghana is the shortage of livestock inputs e.g., drugs, vaccines, micro-nutrients, breeding stock (including day-old chicks), semen for artificial insemination. Most of these items are imported, thus, encouraging the private sector to invest in a local production of livestock inputs and also building the capacity of local hatchery facilities will help sustain the industry. Additionally, special permission should be granted with appropriate safety protocols for continuous importation of livestock inputs from exporting countries to curb the sluggish import situation which has led to the global scarcity of these inputs [17].

Government should support livestock farmers who have lost their investments and livelihood with low-interest loans, direct financing assistance, subsidies and incentives including sensitization programmes to alleviate the negative impact of COVID-19 on their livelihood [13], [19].

There is also the need to intensify training and capacity building of farmers in animal feeding and best husbandry practices, and safety protocols for such pandemics. In particular sensitization on the need to ensure livestock enterprises will go a long way to alleviate the negative



impacts of pandemics on farmer health and livestock production. Agricultural Extension agents should be key participants in such training programmes and equipped with the needed tools and skills to assist farmers. This should help minimize the onset of disease on farms and sustain production as has been suggested [18].

The COVID-19 pandemic has provided opportunities to change scientific dissemination. The entire scientific community is reconsidering the need for travel and therefore the role of virtual conferencing is expanding. These virtual systems allowing researchers to participate in conferences from their homes or offices should be encouraged and all stakeholders trained adequately in their use. Countries such as Ghana should put in place the requisite infrastructure through public-private partnerships to enable all stakeholders actively take part in all available innovative technologies in the event of future pandemics.

### B. Animal Health

The Government of Ghana through the Ministry of Food and Agriculture (MOFA) and the Veterinary Services Directorate (VSD) should give full attention to the sector and maintain critical activities such as national and local veterinary regulatory and inspection services, disease prevention measures and priority research activities. Adequate resources required for these activities should be provided [10].

The VSD should procure and be able to store adequate quantities of essential drugs and vaccines to control the erratic shortages and the Veterinary Labs should be supervised not to lose their focus and continue with their mandate.

## IV. CONCLUSION

The livestock value chain in Ghana has been negatively impacted by the COVID-19 pandemic right from input supply through production to the marketing of final products. These setbacks, however, present opportunities for stakeholders especially the Government, Animal Scientists and the private sector to collaborate and initiate appropriate interventions and innovative research that are vital in securing the country against the harsh negative impacts of the pandemic. Such an approach will better prepare the country and the livestock sector to better handle the impacts of such pandemics while also ensuring sustainable livestock production and food security.

## CONFLICT OF INTEREST

We certify that there is no conflict of interest with any financial organization regarding the material discussed in the paper.

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