UNIVERSITY OF VETERINARY AND ANIMAL SCIENCES LAHORE

COVID-19
AND CHALLENGES OF FOOD SECURITY RELATED TO LIVESTOCK SECTOR IN PAKISTAN

POLICY PAPER

April 2020

Center for Applied Policy Research in Livestock and Poultry (CAPRIL)
UVAS BUSINESS SCHOOL
UNIVERSITY OF VETERINARY AND ANIMAL SCIENCES, LAHORE

Authors:
Prof. Dr. Nasim Ahmad *SI*
Vice-Chancellor,
University of Veterinary and Animal Sciences, Lahore, Pakistan.
vc@uvas.edu.pk

Prof. Dr. Rana Muhammad Ayyub
Director, Center for Applied Policy Research in Livestock, UVAS Business School, University of Veterinary and Animal Sciences, Lahore, Pakistan.
drranaayyub@uvas.edu.pk

UVAS
BUSINESS SCHOOL

Team Members:
- **Ms. Saira Naeem,** Teaching Assistant, UVAS Business School, UVAS Lahore
- **Dr. Muhammad Khawar Bashir,** Assistant professor, UVAS Business School, UVAS Lahore
- **Dr. Tahir Mahmood,** Associate Professor, UVAS Business School, UVAS Lahore

Table of Contents

EXECUTIVE SUMMARY

Currently, the threats of COVID-19 pandemic are hovering around and are being felt in almost every sector of life not only in Pakistan but also at the Globe. Like previous pandemics, it is estimated that COVID-19 will have devastating effects on the global economy and finally on the situation of global food security. Coronavirus originated from wild source and is being transmitted from human to human interaction. That`s why, to reduce its transmission, the governments of almost every country are using containment measures which are hampering the availability of workforce and transportation especially of food products. The Organization for Economic Cooperation and Development (OECD) has forecasted that ongoing scenarios will directly slow down the global economy, increase poverty and ultimately pose serious threats to the food security of many nations especially developing countries. Pakistan is no exception, as per estimates of FAO, the food security situation of Pakistan is not satisfactory at all since long. Now, it is expected that the current COVID-19 threat will further aggravate this situation very badly.

As per the Ministry of Health and Unicef`s Survey 2018, only 63.1% of Pakistani households are food secure and the remaining 36.9% are food insecure. This food insecurity is not due to the non-availability of sufficient food material but is mainly due to the inability of the poor people to get access to these food products. Though Pakistan is claimed to be self-sufficient in its majority of food items even then food security situation is still alarming. Livestock products are considered the main source of cheap protein and nutritious diet on one hand and become a source of employment for millions of Pakistani rural families on the other hand. In this way, the Livestock sector plays a pivotal role in ensuring food security in Pakistan.

It has been reported that COVID-19 does not have a direct impact on the Livestock sector as it has neither originated from Livestock nor has an impact on the Livestock population. However, it is imperative to report the dimensions of the impact of COVID-19 on the Livestock sector and possible recommendations to avoid such negative repercussions. Thus, Firstly, this policy paper relates the role of pandemics like COVID-19 with poverty and food insecurity in a historical perspective. Secondly, while linking this situation with the Pakistani context, this paper substantiates the role of the Livestock sector in ensuring the food security of Pakistan and summarizes all the possible impacts of COVID-19 on the Livestock sector and food security situation in Pakistan. Finally, this paper presents the policy guidelines/ recommendations to avoid negative repercussions of COVID-19 threats on the Livestock sector to ensure sustainable food supply chain and food security in Pakistan.

2 PANDEMICS & FOOD SECURITY-HISTORICAL PERSPECTIVE

Human history has been witnessing many pandemics and this century has more frequency than the previous era. Since the start of this century, the world has faced Ebola, Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS), Avian Influenza and now COVID-19. It is interesting to note a common element in almost all these pandemics i.e. the main causative agent has been a virus from animal origin. However, unlike SARS, MERS, or the Avian flu; COVID-19 has not spread through the Livestock source.

It is a fact that previous pandemics including SARS, MERS, and Avian influenza resulted in negative impacts on food and nutritional security as well as price hikes which led to great panic in affected regions. For instance, the global outbreak of Ebola in 2014 rendered farmers to abandon agricultural areas and reduced usage of fertilizers in West Africa. This situation led to a significant reduction in food production and an increase in prices of rice by over 30% in domestic markets of Guinea, Sierra, and Liberia. Likewise, the price of cassava, a major staple in Liberia, increased up by 150%. Similarly, the SARS outbreak of 2003 has triggered panic buying and badly affected the food markets in Chinese cities of Zhenjiang and Guangdong[1] .

It is largely claimed that, so far, COVID-19 has resulted in neither food shortage nor price hikes even in hard-hit China. Some reports claim that it does not affect the livelihood of farmers or does not cause immediate food shortages[2]. The main reason is that this virus transmits through person-to-person hence it will primarily affect the urban activities where more people come in closer contacts amidst thickly populated cities due to lifestyle here. That`s why social distancing is advised in this scenario to combat its transmission. However, in China, it has been reported that some stress has been witnessed in supply chains of

[1]The Telegraph, "If corona virus disrupts staple crop production the impact on food security could be grave" by Kevin Chen on 6th March 2020.

[2] IFPRI Blog: Issue Post "As COVID-19 spreads, no concern for global food security yet" March 10, 2020 by Rob Vos, Will Martin and David Laborde.

poultry and pork[3] but the prices remained almost stable in affected areas. Furthermore, for Chinese farmers, it has been reported that they have discontinued selling eggs and chickens in the markets and started burying chicks and ducklings alive as estimates suggest that market inputs of these have decreased by 50 %. The same reports have been coming on the front for Pakistani poultry farmers too[4]. China has strict monitoring measures in place thus she suffered only negligibly small effects. However, it will not be prudent to expect the same response from other countries like Pakistan having different market dynamics . Thus, it is imperative to know that how this COVID-19 will affect food security and food marketing dynamics[5] throughout the world and in specific countries.

3 IMPACT OF COVID-19 ON GLOBAL ECONOMICS, POVERTY AND FOOD SECURITY

It is forecasted that COVID-19 would result in a major risk on global food security not directly but by triggering a global recession. As per estimates of the Organization for Economic Cooperation and Development (OECD), the economic growth outside China will fall by less than China. It is further estimated that the world economy will be reduced by half a percentage point relative to the previous forecast and under OECD`s worst-case scenario, the global growth could be cut in 0.5 to 1.5% in 2020. According to IFPRI`s global model, it has been calculated that "for every global economic slowdown of one percentage point, the number of people living in poverty (and likely also in food insecurity) would increase by 2% or by about 14 million worldwide, but affecting mostly (9 million) people living in rural areas of developing countries"[6] . Moreover, these effects were calculated by applying IFPRI`s global general equilibrium model named MIRAGRODEP to generate an impact on wages, income and key commodity prices across countries and calculated the poverty impact at the household level. Regarding both developed as well as developing countries, it was found that macroeconomic impacts on GDP, Agri-food production, household consumption, and trade would broadly be similar. However, it was found that due to disruptions in international trade, the impact will be more devastating on developing countries as compared to developed countries because of more dependence of developing countries on it. The following table shows the imminent

[3]*IFPRI Blog: Issue Post "As COVID-19 spreads, no concern for global food security yet" March 10, 2020 by Rob Vos, Will Martin and David Laborde.*

[4]Pakistan Poultry Association (PPA) reports on national media.

[5]The Telegraph, "If corona virus disrupts staple crop production the impact on food security could be grave" by Kevin Chen on 6th March 2020.

[6]IFPRI Blog: Issue Post "How much will global poverty increase because of COVID-19?" March 20, 2020.

macroeconomic impacts of a 1% reduction in global economic growth in terms of labor productivity scenario, total factor productivity scenario and trade costs scenario:

Table-1: Macroeconomic impact of a 1% reduction in global economic growth

		LABOR PRODUCTIVITY SCENARIO	TOTAL FACTOR PRODUCTIVITY SCENARIO	TOTAL COSTS SCENARIO
	Base value, bn USD 2011	Percentage change		
REAL GDP				
WORLD	111,387	-1.0	-1.0	-1.0
DEVELOPED COUNTRIES	66,362	-1.0	-1.0	-0.7
DEVELOPING COUNTRIES	45,024	-1.0	-1.0	-1.5
HOUSEHOLD REAL CONSUMPTION				
WORLD	46,746	-1.1	-1.0	-0.9
DEVELOPED COUNTRIES	30,268	-1.2	-1.0	-0.7
DEVELOPING COUNTRIES	16,477	-1.0	-1.0	-1.4
REAL VALUE ADDED				
ALL GOODS				
WORLD	36,924	-1.0	-1.0	-1.1
DEVELOPED COUNTRIES	16,778	-1.1	-0.9	-1.1
DEVELOPING COUNTRIES	20,145	-1.0	-1.0	-0.8
AGRIFOOD PRODUCTS				
WORLD	7,967	-0.9	-0.8	-0.9
DEVELOPED COUNTRIES	2,986	-0.9	-0.7	-0.8
DEVELOPING COUNTRIES	4,980	-0.9	-0.9	-0.6
EXPORTS, CONSTANT DOLLARS				
ALL GOODS				
WORLD	17,849	-1.1	-1.0	-13.8
DEVELOPED COUNTRIES	9,524	-1.1	-1.0	-12.4
DEVELOPING COUNTRIES	8,325	-1.1	-1.0	-15.4
AGRIFOOD PRODUCTS				
WORLD	1,498	-0.9	-0.8	-18.6
DEVELOPED COUNTRIES	849	-0.9	-0.8	-14.9
DEVELOPING COUNTRIES	649	-0.9	-0.8	-23.4

Due to COVID-19 containment measures, it is estimated that global poverty would increase by a simulated 14 million people due to a 1.9% increase in the total factor productivity scenario. However, this number would increase to 22 million (3 % increase) if trade channels will be disrupted. Thus, the negative repercussions of global poverty will be felt in Pakistani poverty which will ultimately affect the food security situation here.

As per Decode EFC analysis[7] , the impact of COVID-19 is expected to be of various severity levels for various industries. The following exhibit shows some industries as "Potential losers" and some others as "Potential winners". This analysis decodes Agriculture and Food processing & retail industries on the potential winners' side. However, it needs to be studied in the context of every country as the contextual factors may vary widely.

Figure-1: Decoding the Economics of COVID-19

3.1 RECENT ECONOMIC MEASURES TAKEN BY SOME COUNTRIES

Given imminent threats of COVID-19 on global food security , some countries have immediately responded as follows.

a. To provide fiscal stimulus to their industries. For instance, the United States of America (US) has taken some measures to reduce the interest rates to counteract the possible economic slowdown.

b. To pour all possible resources to contain the spread of disease and ensure health care facilities.

c. To provide additional social protection to compensate workers and families affected by the containment measures.

d. To encourage the E-commerce and delivery companies to play their pivotal logistical role especially for food products.

[7]*Source: Decode Economic & Financial Consulting (EFC) Analysis at https://dcodeefc.com/.*

It is evident from the food crisis of 2007-2008, that policy concerns about food availability usually result in serious price crisis. It happens as the countries impose export restrictions which pushes the world prices of staples high. Likewise, under the current scenario of COVID-19, some countries have taken following specific measures[8] to ensure the food security of their people. For instance:

a. Kazakhstan has suspended exports of several cereal products, as well as oilseeds and vegetables until 15th April 2020.

b. Viet Nam is no longer granting rice export certificates through the end of March to maintain domestic inventories.

The above-enlisted measures taken by big exporting countries, who produce the surplus amount of food items, will result in food price hikes in world markets especially import-dependent countries like Pakistan.

4 SITUATION OF FOOD SECURITY IN PAKISTAN

According to Food and Agriculture Organization (FAO) of United Nations (UN), the concept of food security indicates the situation "when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life". The food security is considered as a necessary element for any country to achieve a normal pattern of growth. As per estimates of FAO, a high rate of malnutrition can cost an economy 3-4% of GDP. Thus, the estimates regarding Pakistan show that malnutrition and its outcomes cost the Pakistani economy 3% of its GDP (US$7.6 billion) every year[9].

Pakistan is an agricultural country and produces large quantities of major staple and non-staple food crops. Thus, it is claimed that Pakistan is self-sufficient in major staples and is ranked 5th in sugarcane, 8th in producing wheat, 10th in rice, and 4th in milk production. Despite these encouraging figures, only 63.1 % of the country`s household is food secure as

[8] *IFPRI Blog: Issue Post "COVID-19: Trade restrictions are worst possible response to safe guard food security" March 27, 2020.*

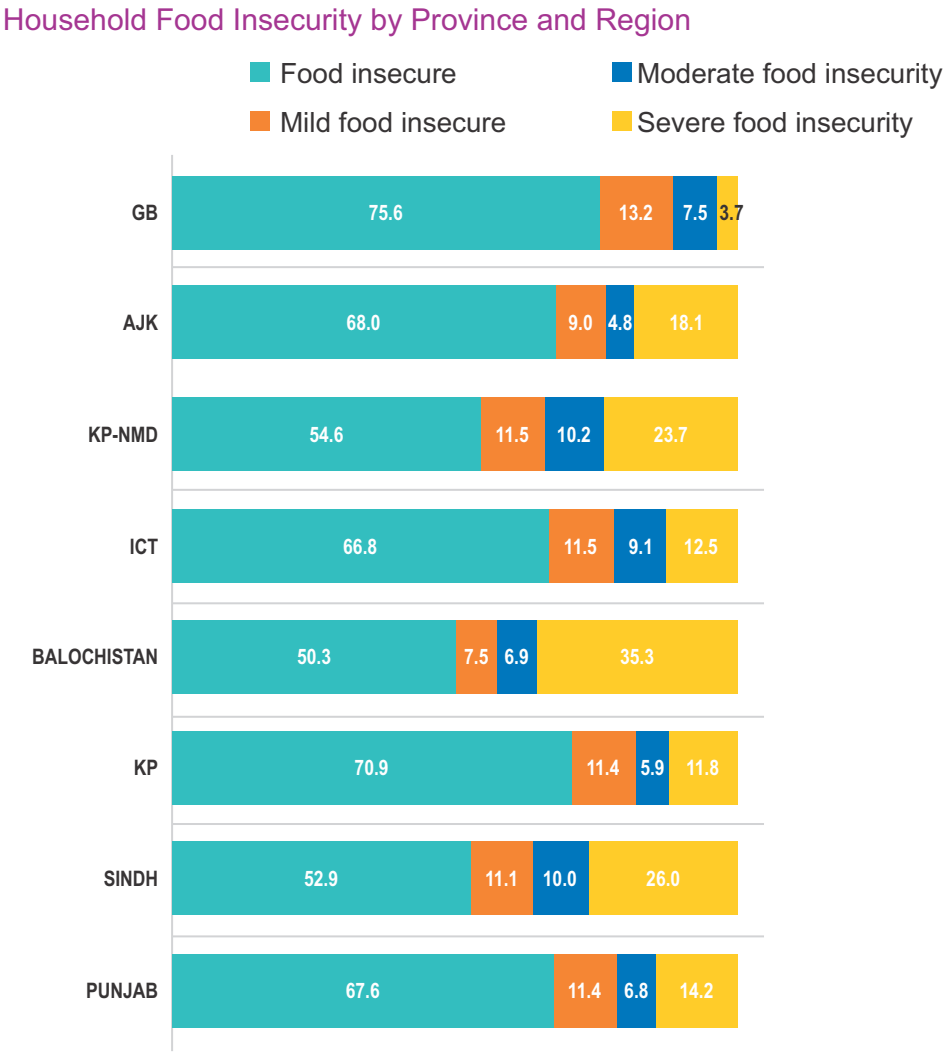
[9] *Report on "The Economic consequences of Undernutrition in Pakistan: An assessment of losses" (2017), launched by the Pakistan scaling Up Nutrition (SUN) secretariat at the Ministry of Planning, Development and Reform, in collaboration with UN`s World Food Program.*

per the Ministry of Health and Unicef`s National Nutritional Survey 2018. Whereas, 36.9% are categorized as food insecure. This survey incorporates "the Food Insecurity Experience Scale" developed by the FOA. As per this scale, the insecurity is divided into three main categories/dimensions as given below:

a. Mild (worrying about the ability to obtain food)
b. Moderate (compromising variety/quantity of food and often skipping meals)
c. Severe (experiencing hunger on a chronic basis)

Out of Pakistani food insecure households, 18.3% face "severe" food insecurity. The rest of 11.1% and 7.6% are facing mild and moderate food insecurity respectively. The following figure shows the situation of household food insecurity in Pakistan based on provinces/ regions.

Figure-2: Household food insecurity in Pakistan by province/region



National Nutrition Survey 2018

The food insecurity of Pakistan is basically due to limited economic access of the poorest and most vulnerable to food. If we look into details of the food insecurity of Pakistan, it is still struggling hard on various fronts like under-nourishment, micronutrients (iron, calcium, vitamin A, etc.) deficiencies and a deficit of safe drinking water. Furthermore, it is quite astonishing to note that "per capita consumption of food products containing high nutritional value like chicken, milk, fish, beef, vegetables, and fruits is almost 6-10 times lower than that of developed countries"[10] . The indicators of food security of Pakistan, as summarized form in comparison with the world, are given in the following table

Table 2: Indicators of Food Security of Pakistan in comparison with the world

Group	Variables	Unit	Year	World	Lower middle income	Pakistan
Availability	Avg. dietary energy supply adequacy	Percent	2015-17	120	113	108
	Average value of food production	$ per capita	2014-16	313	210	196
	Average protein supply	gr/caput/day	2011-13	80	55	74
	Average fat supply	gr/caput/day	2011-13	79	64	64
Access	GDP per capita (PPP)	const. 2011$	2016	15080.4	6298.5	4857.2
	Prevalence of undernourishment	Percent	2015-17	10.8	13.9	20.5
	Share of food expenditure of poor	Percent	2015-16			48.52
	%of population undernourished	Percent	2017	10.6	13.7	20.1
Stability	Cereal import dependency ratio	Percent	2011-13	0.9	-1.5	-17.3
	%arable land equipped for irrigation	Percent	2013-15	23.3	32.8	66.3
	Food imports/total exports	Percent	2011-13	5	9	16
	Political stability and absence of violence/terrorism	Index	2016			-2.47
	Per capita food prod.variability	Const.2004-06	2016	2200	3600	2500
	Per capita food supply variability	kcal/caput/day	2013	6	18	21
Utilization	People using at least basic drinking water services	Percent	2015	88.5		88.5
	People using safely managed drinking water services	Percent	2015	71.2		35.6
	People using at least basic sanitation	Percent	2015	68.0		58.3
	Children under years of age affected by wasting	Percent	2012			10.5
	Children under 5 years of age who are stunted	Percent	2012	24.9		45.0
	Prevalence of anemia among women (15-49 years)	Percent	2016	32.8		52.1

Data source: Food and Agriculture organization of United Nations: http://www.fao.org/economic/ess/ess-fs/ess-fadata/en/

[10]*National Food Security Policy: Government of Pakistan, Ministry of National Food Security and Research Islamabad.*

5 ROLE OF LIVESTOCK SECTOR IN FOOD SECURITY OF PAKISTAN

Pakistan is an Agrarian country and Livestock is the most vibrant subsector of the Agriculture sector in Pakistan which is evident from its 60.5% contribution to Agriculture value added in the year 2018-19. Last year, the Livestock subsector contributed 11.2% to the total GDP[11] of the country and has a continuously increasing trend over the last few years which advocates its inherent potential. This sub-sector engages over 8 million people (directly or indirectly) who depend on their earnings from animals and animal-related activities. Thus, this sector is directly involved in ensuring food security of above-mentioned families engaged in Livestock sector-related activities on one side by providing employment opportunities to them and common people by providing high preteineous food products like milk, meat (chickens, beef, mutton, and fish) on the other hand. The estimated livestock population of various animals along with its percentage growth as compared to the previous year are given in the following table:

Table 3 : Estimated Livestock Population (Million Nos.)

Species	2017-18	2018-19	% Change
Cattle	46.1	47.8	3.69
Buffalo	38.8	40.0	3.09
Sheep	30.5	30.9	1.31
Goat	74.1	76.1	2.69
Camels	1.1	1.1	0

Source: Ministry of National Food Security and Research

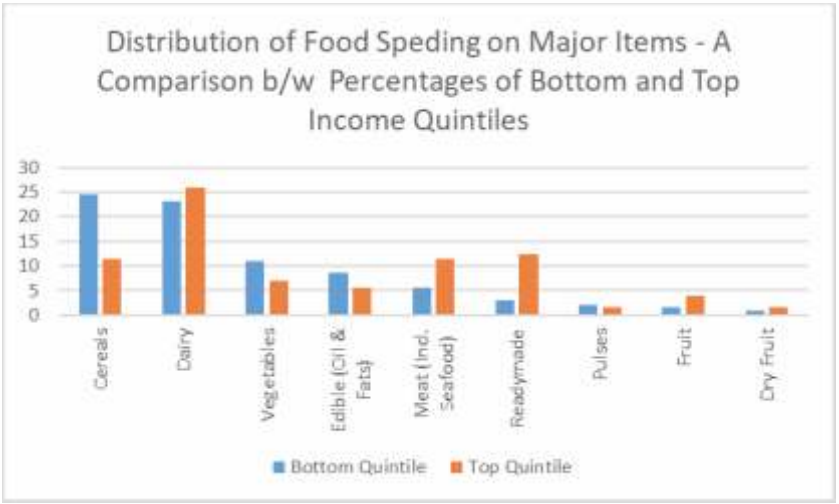
The Livestock subsector plays its pivotal role in national food security by providing daily cash income to farmers and self-employment opportunities for women. Pakistan is a leading milk producer with estimated milk production of 52.6 million tons, meat production of 3.9 million tons (2.01 beef, 0.69 mutton & 1.2 poultry meat). Likewise, 740 thousand metric tons of fish are produced in the country out of which US$ 349 million is exported. Pakistan is the 11th largest poultry producer in the world producing more than 1.02 billion poultry birds and around 16 billion eggs annually[12] .

[11]*Economic Survey of Pakistan (2019), Finance Division, Economic Advisor Wing, Government of Pakistan.*

[12]*National Food Security Policy: Government of Pakistan, Ministry of National Food Security and Research Islamabad.*

It is reported that the bottom 60% of the Pakistani households spend a substantial portion i.e. 45% of their income on food helping them and leading to food security[13]. Normally, the Livestock products mainly help in providing healthy nutrition to the people of developing countries which helps to attain food security. The following figure shows the spending pattern of Pakistani people on food spending on various items.

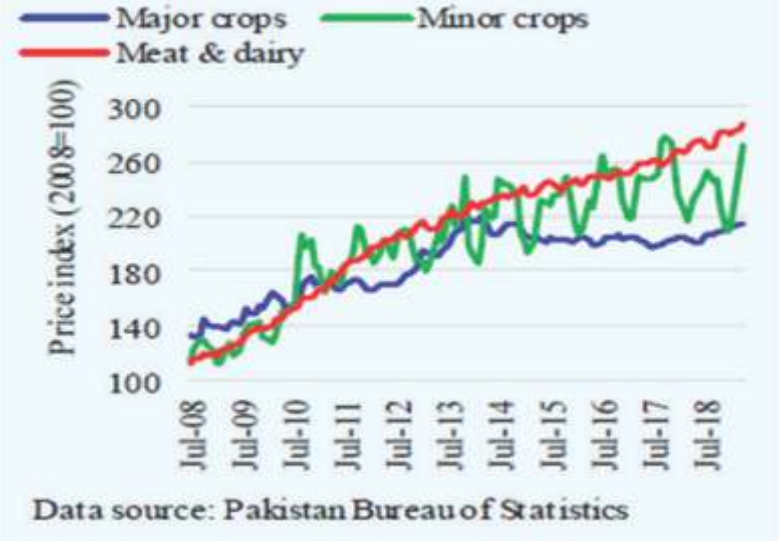
Figure-3: Distribution of Food Spending on Major Items-A Comparison between Bottom and Top Income Quintiles



The above figure shows that the top quantile spends around 25% on Dairy products and around 12 % on meat products. Whereas, bottom quantile spends around 23% on Dairy products and around 7 % on meat products. This figure shows that how Pakistani people apprise the importance of products from the Livestock sector to ensure their food security. However, in Pakistan, the prices of meat and dairy products have a comparatively upward trend as compared to other food items. The following diagram of Pakistan Bureau of Statistics vividly shows it:

[13]*Source: Household Income and Expenditure Survey 2015-16.*

Figure-4: Trend in Pakistan in Price Indices of Major Food Items



On one side the prices of products from the Livestock sector i.e. meat and milk has an upward trend and at the same time, it has been reported that the quarter of Pakistani population lives below the poverty line which means that 50 million people are unable to access basic needs out of their income. Likewise, under COVID-19, the impact of the increase in prices of these products has a significant negative impact on the food security of the People of Pakistan. Thus, it is imperative to study, document and report multifarious kinds of impacts of COVID-19 on Livestock sector-related food security issues. This policy paper will specifically focus on challenges and required measures because of COVID-19 on Livestock sector-related food security.

6 IMPACT OF COVID-19 ON LIVESTOCK SECTOR

Pakistani consumers have some special consumption dynamics. Pakistani nation is protein deficient[14] based on the reasons that on one side they have less buying power to purchase quality preteineous food and on the other hand, they avoid some cheaper preteineous sources

[14]Report in International The News, " Malnutrition in Pakistan severest in region: report" accessed on 5th April 2020 at https://www.thenews.com.pk/print/29240-malnutrition-in-pakistan-severest-in-region-report

like broiler meat based on their misperceptions[15]. It is noteworthy that negative propaganda against poultry on social media has polluted the minds of people and their first reaction comes in either reducing or completely abandoning broiler meat consumption. However, the officials of Pakistan Poultry Association (PPA), academicians, doctors, and technical experts have been stressing it hard to create awareness that consumption of chicken is not only safe rather it is quite instrumental in boosting immunity against infectious diseases like COVID-19[16] . FAO has also pointed out that, under the current scenario, the meat of healthy Livestock, which is cooked thoroughly, remains safe to eat[17].

The COVID-19 has been spreading fastly, thus the Pakistani Government announced lockdown from 21st March 2020 till 5th April 2020 for fourteen days. This situation has rendered the workforce to leave work and stay in their homes. COVID-19 has been mainly affecting elderly people so its impact on the workforce is minimal. However, it is severely hampering the industries in urban areas due to the unavailability of the workforce in workplaces. Moreover, it is noteworthy that main Livestock related activities are done in rural areas so people are not facing any major problems in rural areas. However, some other reports have indicated that its repercussions can easily be seen on Livestock related industries involved in the processing and further processing[18]. Such repercussions have already been reported on the global front as "its impact on medium-sized companies and small businesses will be grave as supply chains are being disrupted due to restrictions on transportation and movement of people"[19].

[15]Ayyub, R. M. (2016), "An empirical investigation of Consumer Alienation among broiler meat consumers of Punjab" a research report conducted by CAPRIL (Center for Applied Policy Research in Livestock) funded by Pakistan Poultry Association (PPA).

[16]Qasim, M. "Corona virus illness not linked with chicken consumption" article published in "The News International" on February 14, 2020 accessed at www.thenews.com.pk.

[17]FAO, "Coronavirus disease (COVID-19)outbreak" accessed from http://www.fao.org/2019-ncov/en/

[18]Bhandara, A. H. "Corona virus will affect Agriculture Production. Small Farmers need to be protected" 22nd March 2020.

[19]Martin, V. "What impact could the corona virus epidemic have on agriculture and food security" updated on 24th February 2020 on chinadaily.com.cn

The imminent effects on the Livestock sector, due to COVID-19, include the followings:

a. Restrictions on transportation have led to logistics challenges

b. Restrictions of movement of people have led to a shortage of workforce, especially for food processing industries.

c. Panic buying in the domestic markets has led to an increase in prices of food production.

d. Non-availability or restricted availability of workforce on Livestock and adjacent Agricultural farms has led to overall farm management issues.

e. Non-availability of freighter or cargo services by international flights has restricted meat exporters unable to export and meet international orders.

f. Increased chances of manipulations and blackmailing of farmers to lift their produce at cheaper rates.

g. An increase in demand for food items from consumers, because of containment measures, has led to a shortage of items.

h. Closure of gathering functions (e.g. weddings, social gatherings, schools, colleges, and universities, etc.) has significantly reduced the consumption of food items like chickens, milk, and meat, etc.

The above-mentioned factors have devastating effects on the whole food supply chain in Pakistan. This situation has rendered our Livestock and Poultry industries to non-sustainable and non-profitable ends. Thus, it has resulted in an emergency of the food supply chain in Pakistan.

7 RECENT HAPPENINGS IN PAKISTANI MARKETS

The media reports from Pakistan show that Government officials are expressing that there are ample stocks of basic food items such as wheat and edible oil in the country and Pakistan is self-sufficient in poultry, livestock and dairy items. Thus, it is stressed that people should not involve in panic buying at all[20]. Despite these affirmations, Pakistani people are involved in panic buying which is creating severe price hikes of food items in the markets.

Pakistani Government imposed an emergency in the country on 13th March and later on announced a complete lockdown for 14 days. Initially, that situation has devastating effects

[20]Geo News, Coronavirus outbreak: Food minister tells masses to refrain from panic buying, Mar 23,2020.

on the food supply chain as the feed mills and food processing units were forced to close completely. However, quite shortly, the ministry judged the gravity of the situation and its imminent negative repercussions for Livestock animals and related farming/ production systems. So, the Government managed to notify that feed mills and food processing units will remain open under special measures to ensure continuity of the entire food supply chain in the lockdown scenario. Now, the situation is claimed to be partially under control. However, some reports show that some other pathetic happenings are also creating problems for ensuring food security related to the livestock sector. A brief account of all such happenings is given in subscript.

For the Dairy industry, the dairy processors are not giving proper farm gate prices to poor small dairy farmers which is creating severe problems for them who constitute the major portion (>90%) of the dairy farming community in Pakistan. On one side, the cost of milk production of farmers is getting high day by day[21] and on the other hand, it has already been reported that dairy farmers are not getting justified farm gate prices for their milk which is adding economic hurdles for these dairy farmers in Pakistan[22]. On the other hand, under these severe conditions, the big dairy processors are trying to get the benefit of this situation by pressurizing the Government to allow them to import dry powder (SMP) and to avail it`s lowered prices in the international markets in these days. If this will happen so this will prove very disastrous for poor small farmers as the dairy processors will leave to collect milk from small dairy farmers. Hence, these poor dairy farmers will be forced to waste their produce increasing further threat of food insecurity in Pakistan. It is noteworthy that such adverse effects of import of dry milk and whey powders have previously been reported and required measures, to significantly increase the import duty on it, were presented to the Government of Pakistan[23].

[21]Ayyub, R.M. (2020), "Increasing but unwatched cost of milk Production-Policy implications for Dairy industry of Pakistan". A policy paper produced under CAPRIL (Center for Applied Policy Research in Livestock), UVAS Business School, UVAS Lahore.

[22]Ayyub, R.M. (2019), "Study on effects of price de-capping on milk and meat in Punjab". A consultancy report submitted to Punjab Enabling Environment Punjab Project of USAID under CAPRIL(Center for Applied Policy Research in Livestock), UVAS Business School, UVAS, Lahore.

[23]A Policy paper entitled, "Import of Milk & Whey powders in Pakistan" produced under CAPRIL(Center for Applied Policy Research in Livestock), UVAS Business School, UVAS Lahore.

For the meat export industry, the exporters have orders from international markets but are unable to export meat due to the non-availability of freighter/cargo services and international flights from Pakistan. Likewise, the local demand for products from animal origin has significantly lowered as a consumer is skeptical of the possible link of coronavirus with animal origin. Moreover, the ban on social gatherings like weddings hurts the demand for meat in the local market.

For the Poultry industry, due to unpredictable conditions under COVID-19 threats, severe jolts are being witnessed in the supply and demand of poultry products in Pakistan. Hence, poultry farmers are avoiding to place chicks. It has rendered the lowering of demand for day-old chicks (DOC) on one side and a significant reduction in the rate of grown broiler chickens to be marketed. It has been reported that the price of day-old chick (DOC) has been at Rs. 1-2 per chick and the market price of grown broiler chickens has been as lower as Rs. 85 in last week i.e. the first week of April 2020. Furthermore, because of the lowering of demand of broiler and breeder eggs in the local Pakistani market, the poultry businessmen want to export these eggs to international markets but are unable to do so due to the unavailability of flights/ cargo services. Moreover, the poultry processing plants are also facing a severe shortage of workforce due to containment measures which have resulted in the shutting down of these plants. The urgently needed measures for ensuring the export of poultry-related products including eggs and meat have also been pointed out previously for Pakistan[24] . All these happenings have severe negative repercussions for the whole poultry industry of Pakistan.

Given the above explained precarious condition for the whole Livestock sector, some policy measures are urgently needed to rescue it from threats of COVID-19.

[24]Ayyub, R.M. and T. N. Pasha (2018), "Shaping export friendly policies for poultry industry of Pakistan-2018". A policy paper produced under CAPRIL(Center for Applied Policy Research in Livestock), UVAS Business School, UVAS Lahore.

8 RECOMMENDATIONS

The University of Veterinary & Animal Sciences (UVAS) Lahore, has been playing its pivotal role in indicating the required strategies to the policy parlors of the Government. During COVID 19 pandemic, UVAS has convened an online meeting with all stakeholders of the Livestock and Poultry sector on the 1st of April 2020, which included representatives of academia, Livestock Department Govt. of Punjab, farmers, farmer`s associations, processing companies, exporters and FAO expert. The required measures to ensure the sustainability of the food supply chain were discussed in detail and the following recommendations were presented which are split into general and industry-specific recommendations.

8.1 General Recommendations:

1. **A comprehensive media campaign** should be launched at the national level to create awareness and educate the general public that the consumption of milk, meat (chickens, beef and mutton) and eggs is not only safe but also significantly helps in boosting the immune system for combating the imminent coronavirus infections.

2. To declare livestock and poultry farming as **"priority sector"** and to offer immediate financing for working capital either as soft loans or on special discounted rates.

3. To **defer electricity bills** of small and large farmers at least for one month. The payments should be taken in three months' installments once the emergency is over.

4. Govt. should **abolish the customs duties, sales tax and income tax** on the import of raw materials and machinery/equipment required for livestock and poultry industries for at least three years.

5. Necessary directions should be passed on to law enforcement agencies to facilitate personnel involved in the **logistics of food materials** of all kinds on national and local routes.

6. To **ensure un-interrupted** milk, meat, and egg supply chain in the country from villages to urban households. However, the required SOPs can be devised to avoid the spread of disease.

7. **Equal incentives** should be given to all stakeholders i.e. poultry, meat, and dairy industries to maintain equilibrium.

8.2 Recommendations for Dairy & Meat Industries:

1. Zero-rating regime for the dairy sector should be resumed immediately.

2. Tax exemptions /special tax packages should be given to revive the livestock farming production systems.

3. To safeguard the rights of local farmers and boost local production in this emergency, an immediate ban on the import of skimmed powder be implemented.

4. The animal “mandies” must be open and fully functional to ensure a fully efficient livestock supply chain.

5. The government should take necessary measures to ensure farm gate prices of milk and meat as these were before lockdown.

6. Urgent measures should be taken to provide a subsidy on wanda up to 25% for the next three years.

7. The policy related to opening animal feed selling outlets must be implemented properly which will ensure the supply of healthy feed and reduce the chances of aflatoxin in animals.

8. The Govt. should engage the processing companies especially “Milk powder plants” to buy and process the excessive or unsold milk from farmers to convert it to powder which can be used in the future.

9. The required measures, related to biosecurity, should be extended to ensure the safety of farmworkers.

10. To continue all veterinary services to livestock farms including vaccination, disease prevention, diagnostic, treatment, etc. even with more rigor which are presently halted.

8.3 Recommendations for the Poultry Industry:

1. To revive **exports of eggs and chicken meat**, some immediate measures be taken to start and regularize cargo flights/freighters services on subsidized rates.

2. Banks to be asked to help the sector to arrange **working capital and short loans** on minimum interest rates.

3. The government shall support the sector by **sharing the salaries and wages**, through grants to employees of this poultry sector.

4. The government should include the provision of processed chickens and eggs in the intended **food program of Prime Minister**.

5. The government should use the **coupon system** in providing food from retail shops in place of giving cash to needy families.

6. To ensure that imposed **lockdown exempts** the farmers, feedlots, poultry farms, farming inputs supply companies, processing plants, feed mills, feed raw materials, dealers, shops, etc.
7. The **conventional chicken meat sale points** (Phatta sale) shall be allowed to continue even in this emergency lockdown.

Prof. Dr. Nasim Ahmad, the Vice-Chancellor, University of Veterinary and Animal Sciences, Lahore, has sent the above recommendations to the Honorable Prime Minister of Pakistan and has also forwarded it to other concerned Government officials through letter no. SVC-3386 dated 1st April 2020. It is expected that the above recommendations if implemented in true letter and spirit can significantly reduce the negative repercussion of COVID 19 Pandemic of the livestock sector and ultimately on ensuring food security of people of Pakistan. Thus, it is suggested that these recommendations should be immediately included in all recent measures of the Government of Pakistan to combat COVID 19 to ensure a sustainable food supply chain and food security.

REFERENCES

A Policy paper entitled, "Import of Milk & Whey powders in Pakistan" produced under CAPRIL(Center for Applied Policy Research in Livestock), UVAS Business School, UVAS Lahore.

A report in International The News, " Malnutrition in Pakistan severest in the region: report" accessed on 5th April 2020 at https://www.thenews.com.pk/print/29240-malnutrition-in-pakistan-severest-in-region-report

A report on "The Economic consequences of Undernutrition in Pakistan: An assessment of losses" (2017), launched by Pakistan Scale Up Nutrition (SUN) Secretariat at the Ministry of Planning, Development, and Reform, in collaboration with UN`s World Food Program.

Ayyub, R. M. (2016), "An empirical investigation of Consumer Alienation among broiler meat consumers of Punjab" a research report conducted by CAPRIL (Center for Applied Policy Research in Livestock) funded by Pakistan Poultry Association (PPA).

Ayyub, R.M. (2019), "Study on effects of price de-capping on milk and meat in Punjab". A consultancy report submitted to Punjab Enabling Environment Punjab Project of USAID under CAPRIL(Center for Applied Policy Research in Livestock), UVAS Business School, UVAS, Lahore.

Ayyub, R.M. (2020), "Increasing but the unwatched cost of milk Production-Policy implications for Dairy industry of Pakistan". A policy paper produced under CAPRIL (Center for Applied Policy Research in Livestock), UVAS Business School, UVAS Lahore.

Ayyub, R.M. and T. N. Pasha (2018), "Shaping export friendly policies for poultry industry of Pakistan-2018". A policy paper produced under CAPRIL(Center for Applied Policy Research in Livestock), UVAS Business School, UVAS Lahore.

Bhandara, A. H. "Coronavirus will affect Agriculture Production. Small Farmers need to be protected" 22nd March 2020.

Economic Survey of Pakistan (2019), Finance Division, Economic Advisor Wing, Government of Pakistan.

FAO, "Coronavirus disease (COVID-19) outbreak" accessed from http://www.fao.org/2019-ncov/en/

Geo News, Coronavirus outbreak: Food minister tells masses to refrain from panic buying, Mar 23, 2020.

IFPRI Blog: Issue Post "As COVID-19 spreads, no concern for global food security yet" March 10, 2020, by Rob Vos, Will Martin, and David Laborde.

IFPRI Blog: Issue Post "COVID-19: Trade restrictions are the worst possible response to safeguard food security" March 27, 2020.

IFPRI Blog: Issue Post "How much will global poverty increase because of COVID-19?" March 20, 2020.

Martin, V. "What impact could the coronavirus epidemic have on agriculture and food security" updated on 24th February 2020 on chinadaily.com.cn

National Food Security Policy: Government of Pakistan, Ministry of National Food Security and Research Islamabad.

Pakistan Poultry Association (PPA) reports on national media.

Qasim, M. "Coronavirus illness not linked with chicken consumption" article published in "The News International" on February 14, 2020, accessed on www.thenews.com.pk.

Source: Decode Economic & Financial Consulting (EFC) Analysis at https://dcodeefc.com/.
Source: Household Income and Expenditure Survey 2015-16.

The Telegraph, "If coronavirus disrupts staple crop production the impact on food security could be grave" by Kevin Chen on 6th March 2020.

The Telegraph, "If coronavirus disrupts staple crop production the impact on food security could be grave" by Kevin Chen on 6th March 2020.

UNIVERSITY OF VETERINARY AND
ANIMAL SCIENCES LAHORE