

Recent Changes to Farming Supply Chains

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Abstract

Consumers of domestic and global produce have been greatly impacted by events during the recent years. One of the reasons is the increased pressure placed on food producers during this time frame. Heightened sensitivity to the safety and security of populations all across the world has been the cause of a greater focus on potential areas of security breaches in all parts of life. This article highlights three specific changes that have been imposed on farmers: pricing changes, food handling changes, and supply volume changes.

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I. INTRODUCTION

The agriculture business has been affected dramatically over the past several years. Every aspect of farming supply chains has been impacted. Farmers are having to plan alternatives to provide safe work environments and make sure they can harvest all their products in order to sell. This article highlights the effects of COVID-19 on the U.S. trade, national market, and personal effects on the farmers. First, pricing changes of farm products are discussed. Next, changes in activities on farms are discussed. Afterwards supply changes affecting farms is mentioned. Each of these changes individually have greatly impacted farmers. The aggregate effect of these changes has put significant strain on the farming industry.

II. FARMING PRICING CHANGES

In recent years, farmers globally have been facing very negative impacts on their farms. With global quarantine since the rise of many coronavirus case outbreaks, many farmers have been left with a high inventory of their crops that have not been sold and are left to die. The article, "America's Farmers: Resilient Throughout the COVID Pandemic" [1] speaks about the negative and positive affects the pandemic has had on farmers. It provides descriptive data to readers to grasp the impact it has had on farmers since the pandemic. The authors state the following:

"This year, farmers and consumers have been planning production and managing household budgets at a time when markets — food, commodity, labor, energy — are being jolted by global, national and regional shutdowns, slowdowns, and overall uncertainty. Those shocks to the U.S. and global economies have affected both the supply and demand for food in the U.S. and the rest of the world, leading to short-term, localized shortages in the U.S., particularly in livestock products like meat, while farmers had to deal with, for example, excess milk supplies in other areas."

Since the pandemic farmers have been facing various degrees of decline. This has resulted in farmers having to make executive decisions on how many crops they plan to plant and possibly adjust their price to keep their farms sustainable. The decisions farms have had to make have also had an impact on the consumers as well. With some losing their jobs and having to rely on any assistance from the government, they are now facing limited supply on certain crops and potential price increases on items that were once affordable. Johansson [1] states that:

"The COVID-19 pandemic not only triggered a new type of crisis for the farming sector, it also came at a tough time for U.S. farmers. For the past few years, global commodity production has outpaced demand in most years and prices have been falling. Since the historic 2012 U.S. drought and peak in commodity prices in 2013, global commodity production has generally outpaced demand, fueling continued price declines – in

nominal and real terms. Between 2012-2019, producer prices for corn fell 48% from \$6.89 per bushel to \$3.56, and producer prices for soybeans fell 40% - almost six dollars per bushel. Prices for cattle, hogs, broilers and milk have also been on downward trend over the past 5 years. However, cost of production for these commodities in 2019 was higher or only marginally lower than five years earlier (see Fig 1).”

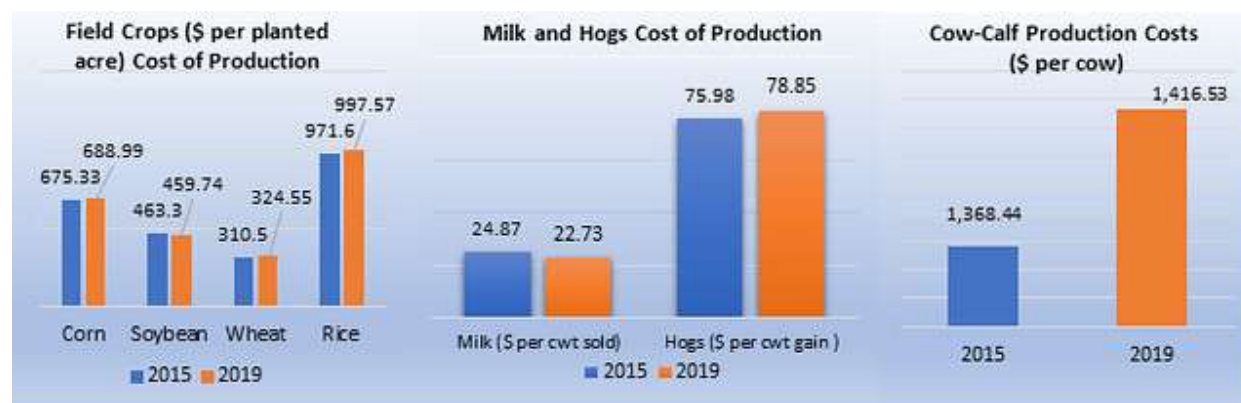


Figure 1: Production Cost Changes To Farm Products (2015 -2019)

The general population in large part have not been aware that many farms have been experiencing a decline in their prices due to natural disaster years before the pandemic. Farmers have been trying to make an even playing field for themselves to make profit and also for their consumers but have not been able to catch a break with external circumstances that continue to hurt their business. The chart above (Fig 1) displays the cost of some crops from 2015 to 2019. Fig 1 illustrates that through these four years, the price of crops continued to decline for farmers. However, the cost of the planted crop is slightly higher. Farmers have been taking quite a loss for some time and since the pandemic this has only continued to go down. As Johansson states [1],

“We know that U.S. agriculture is highly competitive in global markets, and the trade outlook is looking more favorable with expected global economic recovery in 2021. Overall, agricultural exports during the COVID-19 period appear to have been holding up relatively well compared to overall U.S. exports. In the first seven months of 2020, U.S. ag exports were down 3.5 percent from last year compared to a decrease of 18 percent for non-ag exports. Just recently we have seen a major uptick in Chinese purchases. For instance, while U.S. soybean exports had started off slow this year, since July, China has purchased 14 MMTs. Over the past few months, China has also signaled the intent to purchase corn at amounts exceeding its 7.2 MMT quota if they all finalized. Purchases are up across the board, with total accumulated sales for wheat, sorghum, cotton, pork and beef exceeding the pace of 2017 levels year-to-date.”

It is assumed that there may be an improvement in the farming business. More purchases made from countries outside of the U.S., this could possibly spark more business for big and small farms. If big farms are receiving orders from other countries for crops this could gradually pick up the sales for crops which will give big farms more business and help them focus on keeping their international orders fulfilled and may give the opportunity for the smaller farms to fulfill orders locally.

III. SAFER FOOD HANDLING IN FARM OPERATIONS

During this global pandemic, it is important that all essential workers do their part by trying to keep a clean and safe work environment. With so many coronavirus cases within the last year and the number of cases still increasing we all have to be mindful of our cleanliness and do the proper research about steps to decrease our chances of catching the coronavirus and spreading it. The Center for Disease Control and Prevention has posted an article [2] giving tips to farmers on how to keep a clean and safe environment for their farms.

The CDC states: “There is no evidence that livestock, crops, or products that may be handled by workers involved in production agriculture are sources of COVID-19 infection. However, close contact with coworkers may contribute to spreading the virus among workers.” Just how it is possible for us to incur the coronavirus, animals can contract COVID as well. It is important that you are aware of your own health and safety just much as the animals that are being produced and sold. If the environment animals live in are not monitored and being handled just the same as one would handle their own environment at this time, it is very much possible for them to catch COVID and continue to spread the disease to others.

In [2] the CDC highly recommends that all farmers come with a control plan if they have not already. “A control plan should reflect the specific region, work site space, job tasks, and other features of each farm, ranch, orchard, or other agricultural operations and locations. Those involved in the work can best set priorities and assess how realistic these recommendations are for specific situations at their facilities.” A control plan would be very helpful in the workplace because it will promote implementing daily routines to be followed consistently and uniformly. Daily procedure usage can also be helpful for new employees and visitors to more easily align with farm policies.

“Since we don’t know for sure which animals can be infected with the virus that causes COVID-19, sick workers should stay away from animals, including livestock and pets, during their illness. Sick workers should be provided with informational resources to access medical attention should they need it.” [2] Potential risk as such is why it's important to come up with a control plan for yourself and your employees/volunteers to make sure everyone is following the daily routine to keep themselves and their crops safe. It could be very essential for the farmers to come up with a control plan pertaining to both proactive and reactive measures. For example, someone in the environment has contracted the coronavirus, it might be beneficial to have a procedure in place for assessing any crops and environments that the person was in and find ways to make sure further contamination occurs.

IV. ADJUSTING TO MARKET CHANGES

In addition to changes in food handling within farmer supply chains, farming operations have also noticed changes in supply. Changes in supply are represented by the ability to have the same level of output in relation to previous years. Various causes may affect the change in supply including wars, droughts, pestilences, or new legislative policies. Livestock, Dairy, and Poultry Outlook June 2023 for the United States Department of Agriculture [3] projects a decrease in red meat and poultry in the upcoming year. The article [3] states,

“Per capita red meat and poultry disappearance—often used as a proxy for consumption—is forecast to fall 1 percent in 2024. This is mainly the result of an 8-percent decline in per capita disappearance of beef. The main component of disappearance is domestic production, though net trade and stocks are also factors in disappearance. Beef production is forecast to decrease more than 8 percent as U.S. cattle supplies tighten.” Fig 2 illustrates the per capita forecasted disappearance of red meat and poultry for 2023 and 2024.

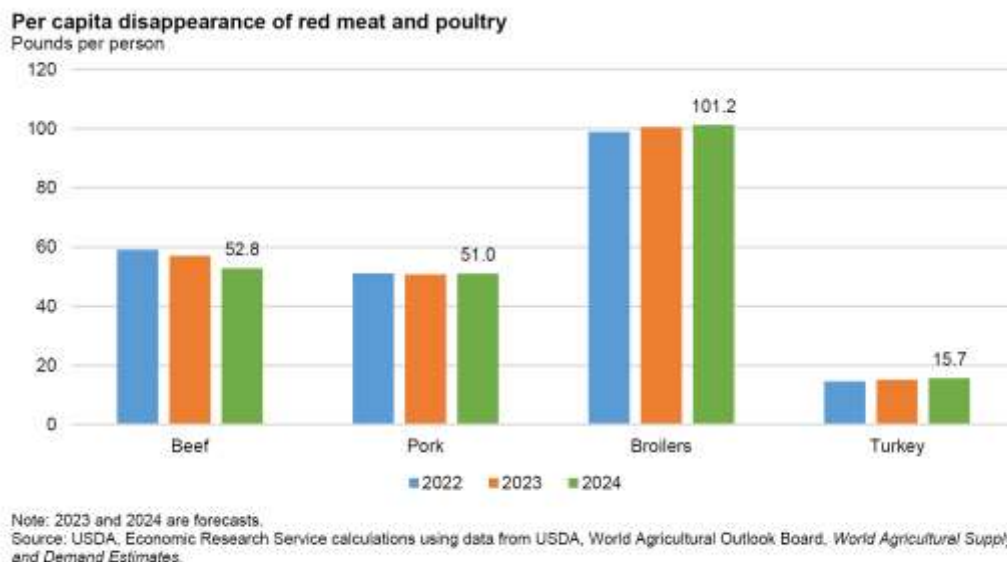


Figure 2: USDA Forecasted Beef, Pork, Broilers, and Turkey Production [3]

As can be seen in Fig 2, other meat products are projected to see changes also. The article [3] highlights this stating:

“A very slight decrease in pork production, combined with higher expected exports, results in a very small decrease in forecast per capita disappearance. Broiler and turkey production are forecast to increase by 2 and 5 percent, respectively. Per capita disappearance of both broilers and turkey is forecast to increase in 2024, though not enough to offset the decrease of beef and pork disappearance.”

These forecasted changes are a direct result of the conditions of the past several years. Changes in these items are representative of many farm items.

V. CONCLUSION

The persistent reality of circumstances that compromise the food supplies of societies and nations is an unfortunate and frequently occurring condition. While this article focuses specifically on the farming industry, parallel realities are also present in other industries such as technology, pharmaceutical, agriculture, etc.. The commonality of these industries is that each are dependent on effective supply chains and the safety and affordability of items moved through those supply chains. Consequently, the subsequent corollary of potentially critically damaging economic effects to businesses necessitates the need for better proactive and reactive approaches for preventing and reducing the effects of external or internal causes for disruption to the suppliers, producers and consumers. This is especially essential for farmers and the communities they serve.

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