A REVIEW OF THE WHEAT EXPORTS OF THE WORLD MARKET: THE INFLUENCE OF RUSSIA AND UKRAINE CONFLICT

Ms. Priya Agarwal, Student
DES'S IMDR Pune
priyakumari.bansal098@gmail.com

Dr. Abhijeet Arvind Shivane, Associate Professor
DES'S IMDR Pune
abhijeet@imdr.edu

ABSTRACT
Recent changes in the Global Geo-political scenario between Russia and Ukraine have impacted the Global dynamics directly or indirectly. This has led to acute food crises. Russia and Ukraine are the largest exporters of wheat to other countries. The conflict between the two countries has shifted the demand and supply paradigm of the wheat exporting countries. Global wheat food security alarmed due to the war between the nations. Developing countries which are dependent on imports had to face a major burn with shortage of supply and price hike. This report is based on examining the exports of the last five years i.e., from 2017-2022 of wheat exporting countries. Due to recent changes in global dynamics, there has been some positive and negative impact on the consequences.
Our aim is to determine the impact and review the phenomena through statistical tools, graphs, to measure the growth and decline of the major and emerging wheat commodity players in the global market. Also, to study and examine the behavior of the countries to combat the supply and how they reframed their policies.
Keywords: Globalization, Supply Chain, Logistics, Conflict, Inflation, Economic Integration

Introduction

War and Conflicts between two countries is not an isolated subject. In the world of economic integration and globalization there is always a chain effect or multiplier effect. Some countries have an upper hand and enjoy the fruitful coming while the others suffer. One such situation in the modern era is the Russia and Ukraine War which escalated on February 24, 2022. Russia is the world's largest wheat exporter and Ukraine is positioned at fifth in the Global Exports. Wheat is one of the major crops that contributes to one's diet. It is one of the most exported crops followed by corn and millets. The situation of war has created a shortage and price inflation in the wheat market. The people suffering from hunger increased by 161 million from 2019 taking up the total between 720 billion and 811 billion. The risk of increase in hunger index is chronic and could add up to 11 to 19 million people. This is the result of the Russia – Ukraine Conflict. (FAO,2022). Global Food Security faced a threat. Ukraine exported 90% of their grains through the sea route. A major gateway of trade happens through the Black Sea, Sea Port which was blocked due to war. The whole supply chain mechanism got disrupted due to blockades, sanctions and destruction of roads, bridges, and railways. Hence, farmers in Ukraine were unable to supply their existing produce, store or transport it due to blockade of Odessa Sea Port. Ukrainian Farmers have produced about seventeen million hectares in 2021 which was reduced by 22 % next year. While sanctions on Russia by the rest of the world have made it difficult for them to export due to rise in price and currency exchange limitation (Araujo,2020). Additionally, it will have a longer impact as both Russia and Ukraine, farmers may lack crucial supplies to plant the next crop. The impact was not pertaining to other countries, but it impacted their own living standards too. Lack of storage and infrastructure, labor shortage can be experienced for upcoming years by the Ukrainian Farmers. There is a dependency of 34% on Russia and Ukraine Wheat exports which caters to about fifty countries. The supplies were jeopardized, with Russia ceasing food and fertilizer shipments and Ukraine's farmers dealing with an attacking troop instead of managing that year's harvest. Russia is hardly the only country restricting its exports.16 nations altogether had prohibited or limited their food trade. This significant drop in supply has contributed to inflation. Taken combined, the consequences for some of the world's most impoverished and most vulnerable individuals might be disastrous. If the conflict continues, several nations already burdened by pandemic debt may be obliged to borrow more subsidized essential goods, causing further misery. Approximately fifteen percent of Russian exports are processed in rubles, 55% in US dollars, and 30% in various other hard currencies. As a result, even if Russia's commercial partners were eager to import, limitations on USD settlement would impair these transactions.

India's role in the wheat trade has grown increasingly vital since the Russia-Ukraine war. Many countries have expressed a desire to import agricultural goods from India. This might be an excellent strategy to improve India's trade balance. However, wheat prices in India were rising even before the Russia-Ukraine crisis, which has caused challenges for India's indigenous wheat customers.

If it so chooses, India may fill the vacuum in worldwide market share for wheat left by the Russia-Ukraine conflict. Indian farmers are obtaining greater prices for their agricultural produce in global markets. However, home consumers across India are struggling to reduce their use of wheat owing to rising prices, resulting in a rise in the proportion of undernourished individuals in the nation. Due to rising wheat costs, the government was forced to reduce the price of wheat subsidized to the poor. India then concluded that serious efforts were required to protect home buyers. As a result, when the crisis erupted in February 2022, India had to plan between protecting its own customers and expanding into international markets.

In this context, this paper analyzes the decline and growth of wheat exports before and after the war. The implication of Russia-Ukraine conflict on wheat export and change in the supply pattern. It also focuses on the change in countries trade policy in regards with Wheat Commodity. The research speculates about the impact and the response of the world adhering to the demand and supply pattern of wheat. (Bechdol,2022; Benteley, 2022)

Literature Review

Wheat is one the most important commodities in the staple diet of the world. Russia accounts for the largest wheat producer and exporter in the world and Ukraine scores the fifth position. Both countries contribute 30% of the Global Wheat Supply. (Jeswani, H. K., C. Proc Soc. A 476, 20200351)

It is stated that a 1% increase in international trade in wheat could lead to a 1.1% decline in domestic wheat prices, which is larger than some previous studies and has serious implications for food security in countries which are in moderate to extreme food crises zones. (Abay, 2022)

Fifteen percent decline in Russian wheat exports and a 38% decline in Ukraine's wheat exports would drop below the predicted baseline levels. Domestic wheat could fall by 3%. As a result, the price of wheat on the world market will rise by 7% as per Global Food Security index at OECD. (OECD 2022) The production standalone is not just a crucial factor of export. Dependence of Fertilizers on Russia and blockages of Port lead to disruption in supply chain has impacted the export of Russia. Some of this Ukrainian grain has entered the global market because of an UN-brokered trade initiative that has lifted blockades at several Black Sea ports. (Elsevier, 2022). According to data released by Ukraine's Ministry of Agriculture Policy and Food in November 2022, about 5.4 million tons of wheat has been shipped from Ukraine since the war began. (Earth observatory/Nasa)

This situation has a negative implication on global food security and leads to a further increase in the number of undernourished people (FAO report, 2021), leading to global rise in undernourishment growth after the COVID-19 pandemic (FAO report., 2022).

A cap on wheat exports was levied to meet the domestic demand of the country. Sudden rise in global wheat demands due to the Russia-Ukraine war created a concern over the price of the wheat and disturbed domestic supply chains. As per the report, higher remuneration to farmers did not result increase in wheat prices for consumers in the country this was achieved by creating a balance between Farmers and Consumers.(Gomez,2017) The government prioritized the interests of farmers, allowing them to sell their wheat to private traders at increased prices than MSP in a few Mandis in addition to purchasing it at MSP in all the major grain-producing states, including Uttar Pradesh Haryana, Madhya Pradesh, Punjab, and Rajasthan. It did not increase the domestic price due to stability in supply and wheat export regulations. However, the exports were open for the countries which already had government to government contact or were facing food crisis (Mottaleb,2018). The motive of the green revolution was to meet the nation’s consumption of wheat and ensure availability of food and reduce the dependency on the exports. India is the world's second largest producer of wheat but has only played a minor role in the worldwide wheat trade. The administration decided to safeguard food security by limiting wheat exports considering inflationary worries. (Banerjee, N)

The world wheat production will be pointing towards year-on- year decline still coping up to be the second highest on the record i.e., 784 million tons. In North America, U.S. farmers increased winter wheat sowing in 2023 to the highest level since due to higher prices and incentives. In Canada, official forecasts show above-average planted acreage in 2023 as farmers are expected to respond positively to higher grain prices. Due to favorable weather conditions, Canadian production of wheat is expected to reach thirty-five million tons. (Baquedano,2014)

In the Russian Federation, wheat production is expected to fall from record levels in 2022. This is due to the above-average drier climate in the southern regions and a decline in winter crops due to falling domestic prices.

In Ukraine, severe financial constraints, infrastructure damage, and blocked access to fields in parts of the country will result in an estimated 40% year-on-year decrease in winter wheat acreage in 2023, and an estimated 40% reduction in wheat production. (Bechdol 2022)

A major takeaway from the available literature is that wheat production has been hampered in two major contributing countries due to war, but the impact was on the Global wheat market due to their leverage on the market share. However, this also gave rise to other countries contributing more. However, Increase in Global Population & Consumption, Change in Weather, Trade policies remain a threat apart from the conflict. The Growing and Emerging countries such as Egypt, Turkey, Mongolia, Somalia, Benin, Sudan, Tanzania who depend on the import of wheat had to face soaring prices and threatening Global Food Security. (Bentley. Nature Food, 2022)

Research Objectives
The research intends to Study:
1. To analyze the wheat production across the glove
2. To find the impact of war on Agriculture produce
3. To study market reaction
4. To study emergence of new players

Research Methodology
The research is based on secondary literature available at News reports, Government reports.

Factual Analysis to study the pattern of the last 5 years and the impact responsiveness. The data available at various government domains was utilized to analyze and ascertain the impact of war. Statistical Tools &Techniques are used to study the pattern and the response.

Secondary Data Analysis
The data analysis below assists in achieving the objective of research. From the year 2018 to 2022 top wheat producing countries have been analyzed and what were the reasons and impacts that led to positive or negative shifts in the course.

Wheat Exports (1000 mt)

Country	**2018**	**2019**	**2020**	**2021**	**2022**
Russia	35863	34485	39100	33000	42000
United States	25503	26373	27048	21782	21092
Ukraine	16019	21016	16851	18844	11000
Australia	9006	9136	23846	27500	25000
Canada	24404	24142	26429	15000	26000
Argentina	12188	12785	11531	16250	12000
India	496	509	2561	8033	6500
Mexico	526	1168	612	924	900

Table No. 1 Wheat Exports (Top Countries)
Source: www.world wheat exports.com, www.indexmundi.com/agriculture

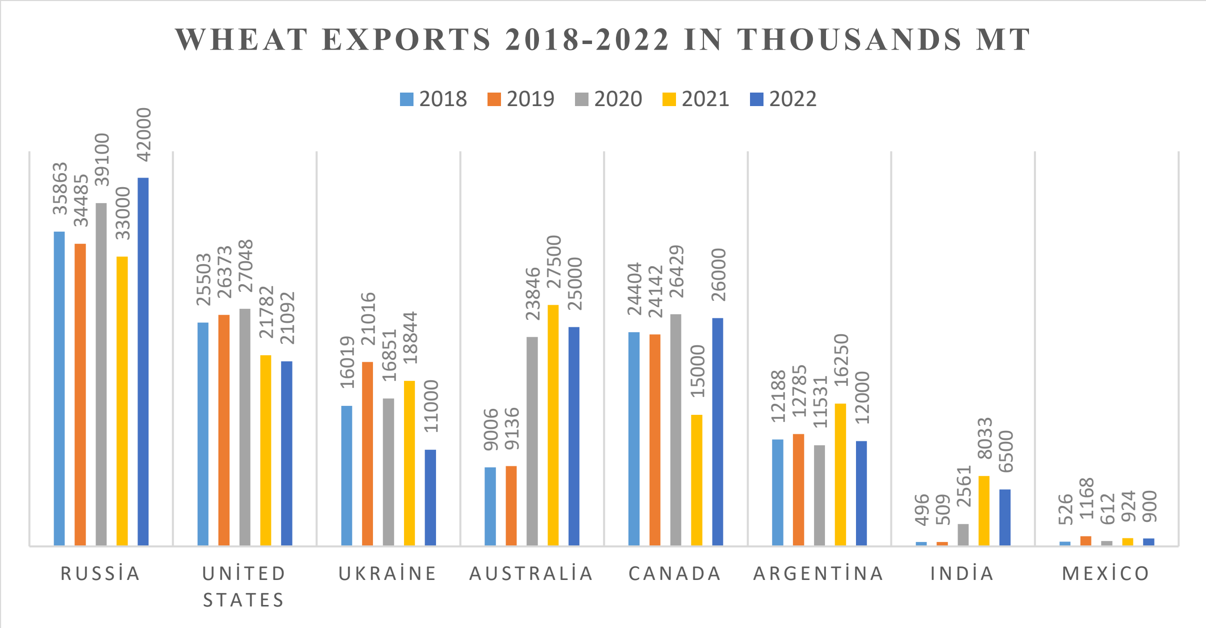

Figure No. 1: Graphical Representation of Year-wise exports of different countries
(Self-generated by the researchers based on Table 1)

Russia as known for its largest wheat export scores the top position and has contributed the major quantum of exports in the year 2022 as compared to the past. Due to restriction and instability in the supply the demand increased, and Russia exported the highest amount of wheat from the year 1987 to 2022. The impact of war on wheat export is majorly seen in Ukraine as compared to Russia. The exports have declined in Ukraine. Canada and Australia acquired the major market share after Russia.

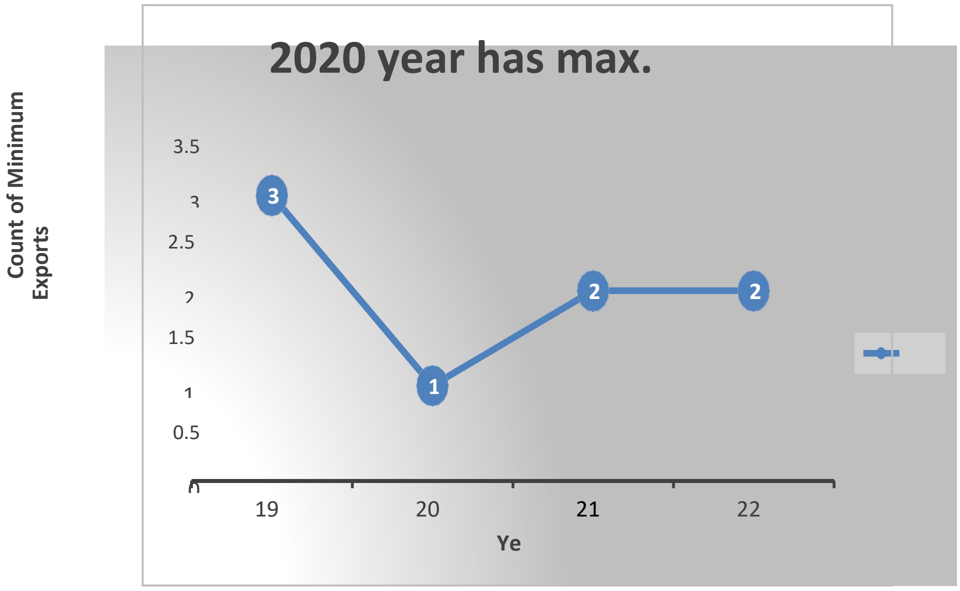

Figure No. 2 Trend line of the total exports of last 5 years
(Self-generated by the researchers based on Table 1)

Year 2020 has a Maximum decline in the Export of Wheat. The reason was the slowdown of the economy and supply chain barrier that occurred due to coronavirus, extreme weather conditions, currency fluctuations. As soon as the market started opening the export trendline raised for the year 2021.

GROWTH CALCULATION

Country	2018-19	2019-20	2020-21	2021-22
Russia	-4%	13%	-16%	27%
United States	3%	3%	-19%	-3%
Ukraine	24%	-20%	12%	-42%
Australia	1%	161%	15%	-9%
Canada	-1%	9%	-43%	73%
Argentina	5%	-10%	41%	-26%
India	3%	403%	214%	-19%
Mexico	55%	-48%	51%	-3%

Table No. 2 Year on Year Growth in Wheat Production
(Self-generated by researcher based on Table 1)

Figure No. 3 YoY Growth in Exports of Wheat – Russia
(Self-generated by the researchers based on Table 2)

The pace of Russia's wheat exports picked up dramatically in the second half of 2022, 11% ahead of the same period in 2021, according to Fast markets' export data analysis Agricultural. The slow pace of exports in the first months after Russia's invasion of Ukraine, combined with concerns over international sanctions and reputational risks from importers, has led to the signing of the Grain Corridor Agreement and a record wheat harvest. By volume, Russia was 11% higher than last year when it was finally able to pick up the pace of exports. In addition, Russian wheat remains among the cheapest origins worldwide.

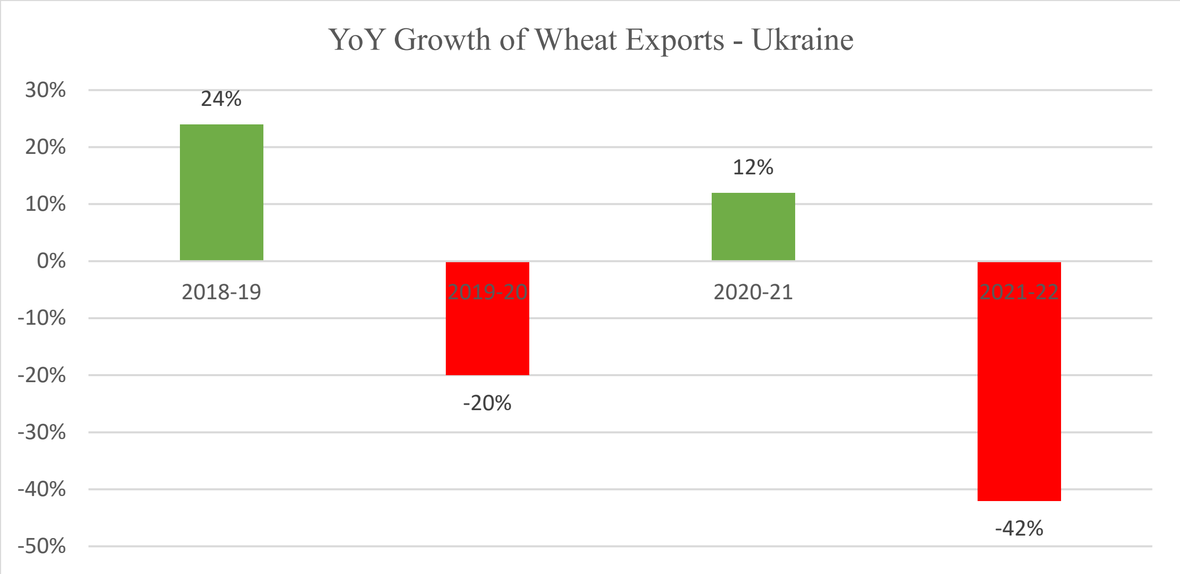

Figure No. 4 YoY Growth in Exports of Wheat – Ukraine
(Self-generated by the researchers based on Table 2)

The blockade triggered by the Russian invasion slowed the exports of Ukraine.3 ports in Ukraine's Black Sea resumed grain shipments in late July under a deal brokered by the United Nations and Turkey. The Black Sea Grains Initiative was extended for another 120 days on November 17th. However, the low yield and bad crop remained a big drawback for the exports.

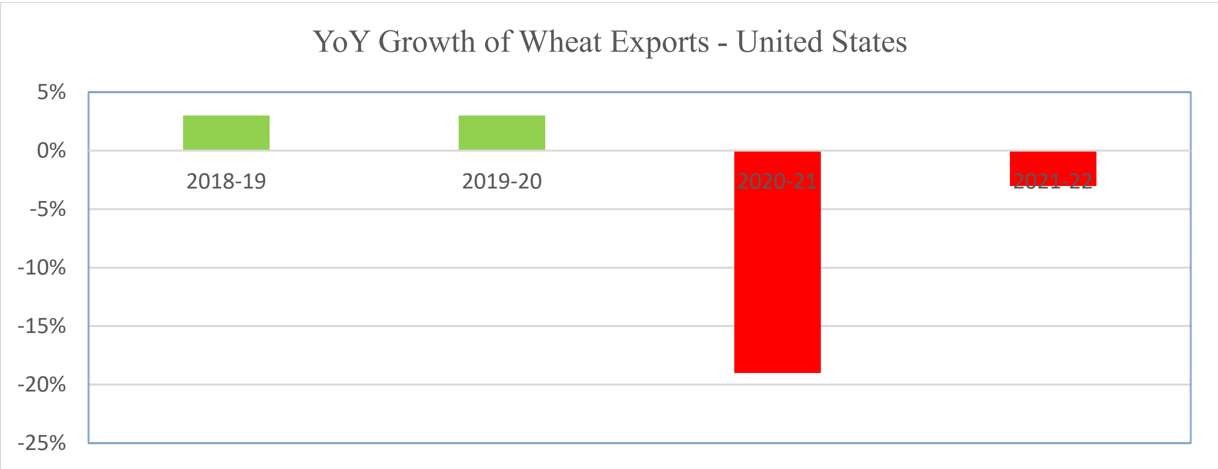

Figure No. 5 YoY Growth in Exports of Wheat – United States
(Self-generated by the researchers based on Table 2)

U.S sag 40 year low. The gap decreased at a higher rate but still faced a deficit in wheat exports. The reason is short supplies and cheaper overseas competition. Late fall through winter is also the slowest period for shipments.

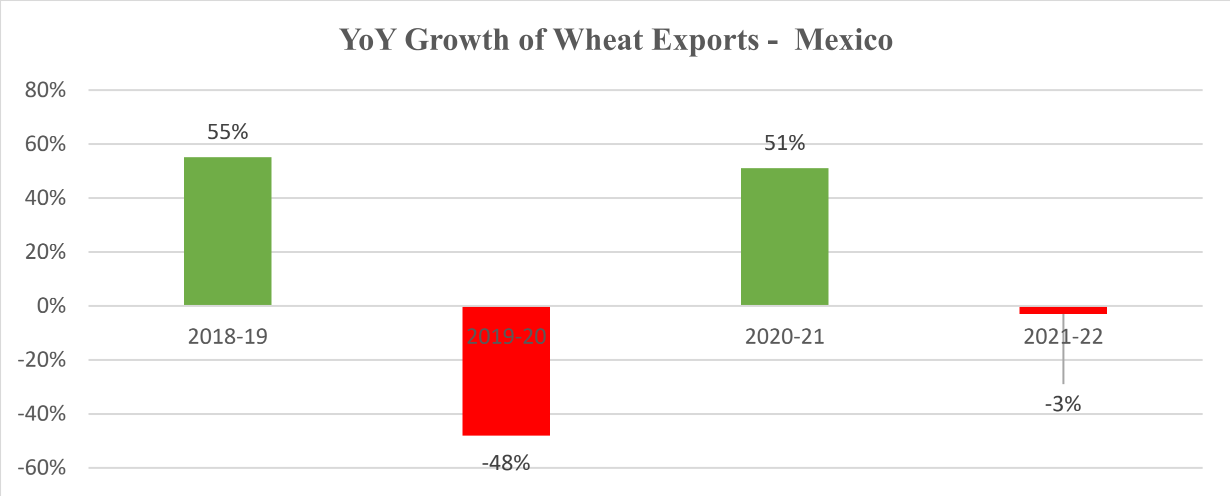

Figure No.6 YoY Growth in Exports of Wheat – Mexico
(Self-generated by the researchers based on Table 2)

The Mexican export of wheat was down in the year 2021-2022 by 3% as compared to 2020- 2021.
The decrease is observed due to a shift in supply pattern. The trade policies and food security strategy for their own consumption is one of the reasons why trade declined.

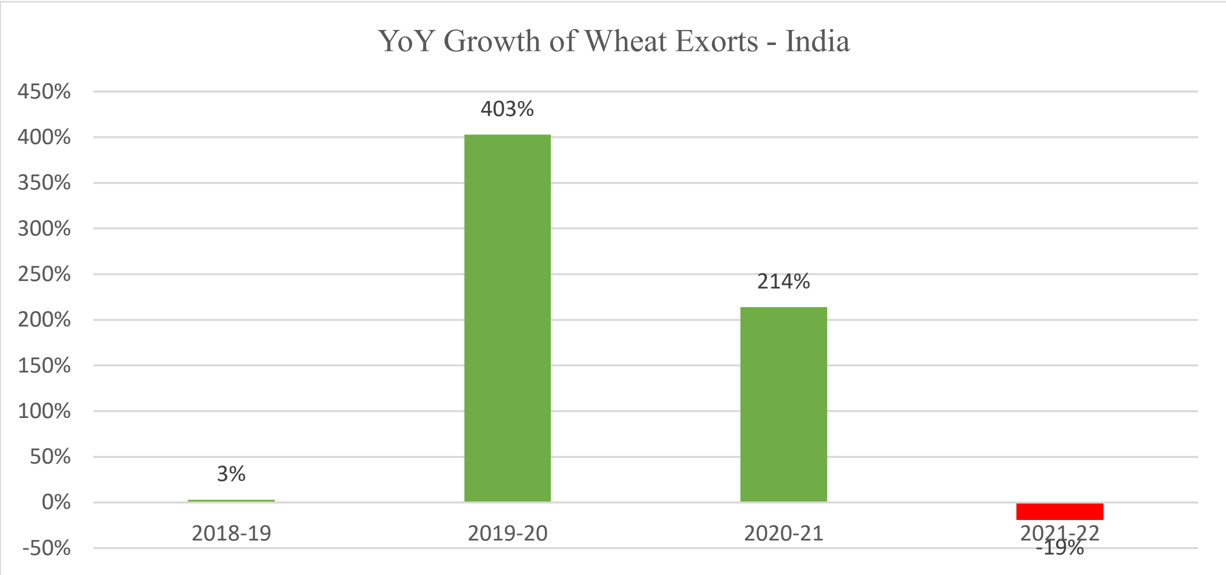

Figure No. 7 YoY Growth in Exports of Wheat – India
(Self-generated by the researchers based on Table 2)

Despite Covid19 and War the demand for Indian Wheat was rising at more than 100% rate which raised a concern for domestic customers and price inflation. Due to which the government-imposed wheat restriction policy to maintain stability and supply in the local market. However, a major part of Indian Wheat is exported on Humanitarian basis by the Government which remained unaffected.

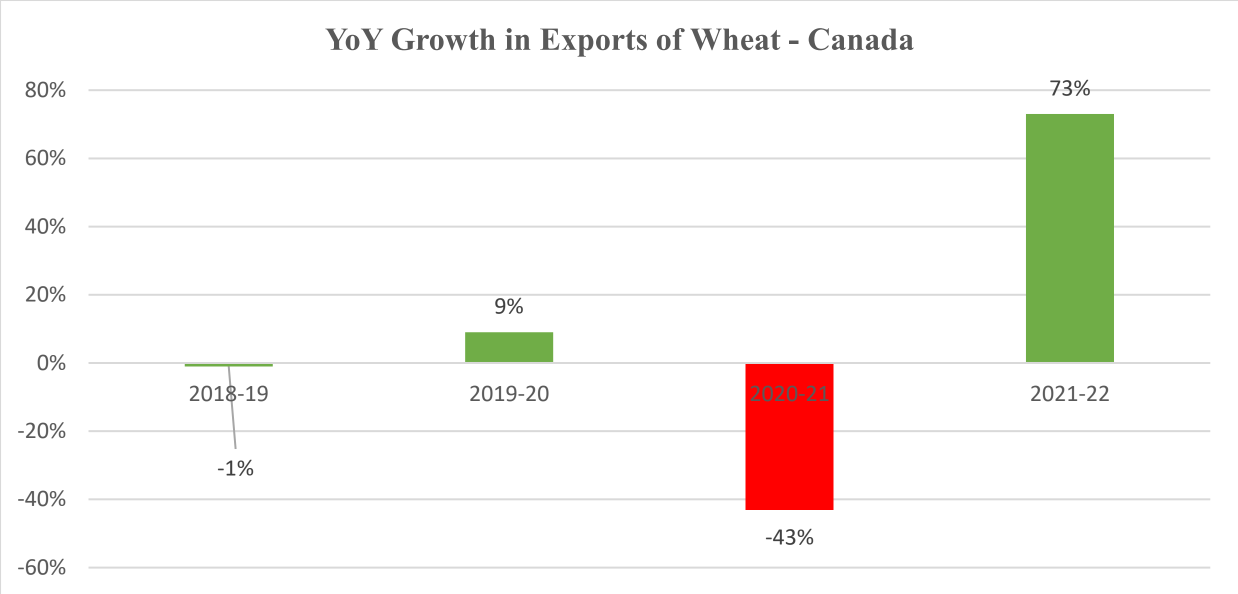

Figure No.8 –Growth in Exports of Wheat - Canada
(Self-generated by the researchers based on Table 2)

In 2021-2022 the Canada exports have significantly raised in wheat by 73 % from previous year due to increase in the production and the favorable moisture provided by the soil quality.
Canada has taken advantage of the market and has gained a significant market share in the wheat trade.

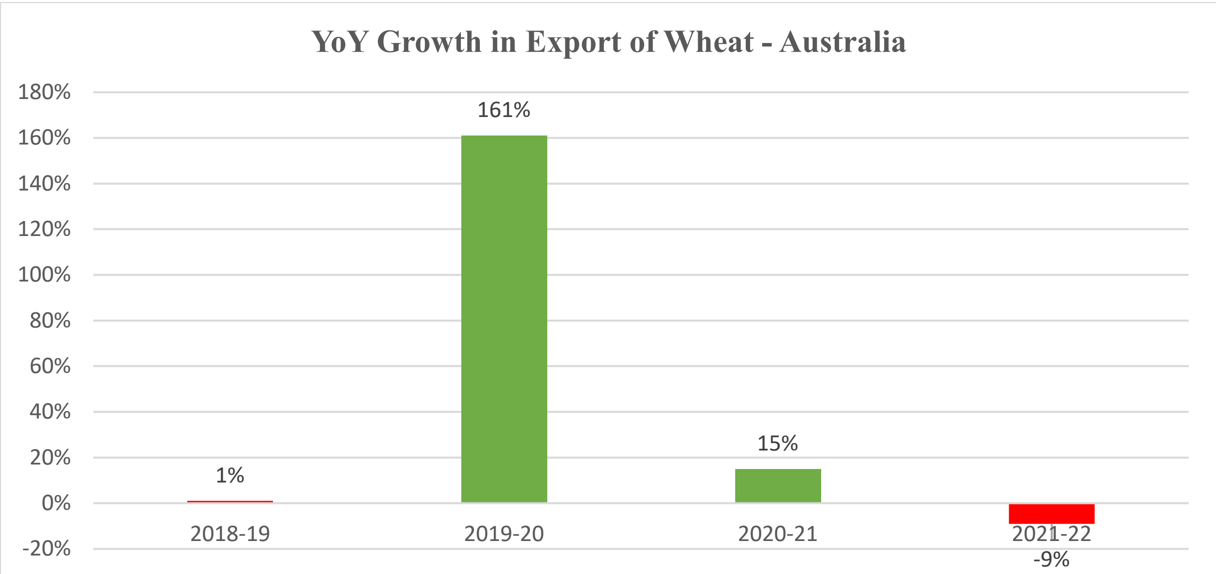

Figure No. 9 YoY Growth in Export of Wheat – Australia
(Self-generated by the researchers based on Table 2)

Due to its closeness to countries like Malaysia, Japan, South Korea, China, Taiwan, Vietnam, and Thailand which are key wheat-consuming areas and the fact that its freight costs are lower than those of its main rivals, Australia exports to these regions**.**

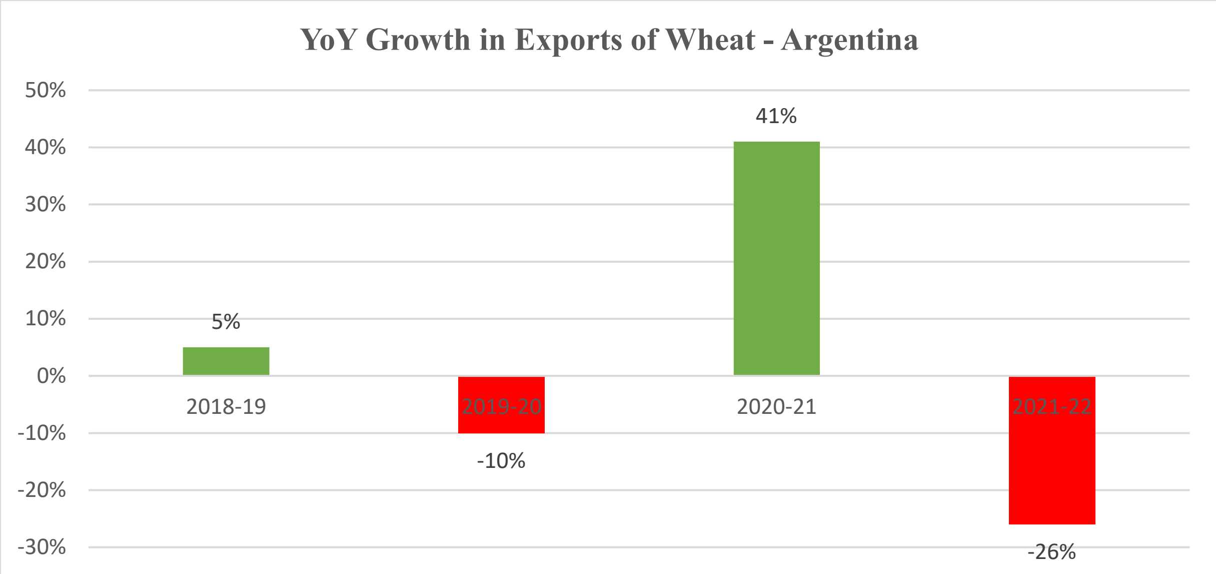

Figure No. 10YoY Growth in Exports of Wheat – Argentina
(Self-generated by the researchers based on Table 2)

Due to the impact of prolonging drought weather conditions the production of wheat observed declination of 26%. Hence, the supply was impacted. Otherwise, Argentina could have taken up the two positions above in the wheat trade.

Geometric Mean

Country	Geometric Mean
Russia	36748.81732
United States	24233.73173
Ukraine	16371.00662
Australia	16826.55677
Canada	22734.00337
Argentina	12850.11316
India	2021.529262
Mexico	792.5358162

Table no 3: Geometric mean of Export of Wheat by various countries
(Self-generated by the researchers based on Table 1)

Fluctuations in the sample do not affect the geometric mean. Hence, average value is calculated based on Geometric Mean to study the average performance between 2018 to 2022. According to which the rank is as follow:

1) Russia
2) United States
3) Canada
4) Australia
5) Ukraine

Findings

Due to the War, the impact on the supply and demand of wheat had a major impact on Ukraine. While Russia experienced a temporary slow-down. India observes the maximum increase in terms of export demand. However, due to India's own domestic consumption the trade was restricted. This cap is removed in 2023 but due to the increase in population of India the demand for wheat will grow substantially and would not be able to contribute much to exports.

The shortage of wheat created a perspective and influenced demand and price. The fear of war created panic among the countries, and it has worked as a benefit to Russia. Not just Russia, Australia and Canada also played a significant role in wheat exports over the period whereas the Mexican wheat export market rose at a marginal rate.

Canada emerged as one of the major Global Wheat Exporters.

Argentina will compete with Australia and Ukraine.

Diversity in the global food supply chain is the need of the hour. Single regions and countries dominating can be harmful in the case of any crises. While the developed countries coped with the wheat market fluctuation, the developing countries which heavily rely on imports of wheat had to suffer (Egypt, Turkey, Mongolia, Somalia, Benin, Sudan, Tanzania). Global Food Security faced a threat.

Wheat is the major staple diet of many countries and competitive price makes it easily accessible to countries like Africa. Egypt imports the maximum of wheat and is listed as the largest importer in the world. It imports 67% from Russia and 20% from Ukraine. Due to war the price of wheat inflated due to fear of shortage and less supply which hit the country’s middle class and poor people.

Overall, there was an increase in the price of imports of wheat as two major wheat supplying countries had armed conflict. Shortage was created due to disruption of ports and supply chain and the less production. However, the degree of impact on Russia was less as compared to Ukraine. Russia has come back and responded with positive trade growth in wheat exports (they have exported more than previous years) while Ukraine exports are still lying low.

Conclusion

The ports have been opened by the U.S intervention. However, Russia still has an upper hand over it. The supply of fertilizers and other farming essential products are supplied by Russia to Ukraine. Hence, the growth of production depends on Russia. There is a need for diversification in the supply of wheat markets and to consider the impact on countries vulnerable due to such conflicts. India on a humanitarian ground has exported wheat and is the largest country to export wheat on humanitarian ground. However, this cannot be the ultimate solution. The emerging countries can be negatively impacted through this and could lead to decline in their GDP and Index of Hunger and the outcomes related to it.

However, certain restrictions are uplifting as dated March 4,2023. This is a positive influence on the export mechanism of wheat and hence the global supply will revive and there is a gleam of hope of improvement.

References

Araujo A. (2020) “Yield variability and harvest failures in Russia, Ukraine and Kazakhstan and their possible impact on food security in the Middle East and North Africa”, Journal of Agricultural Economics, ISSN 0021-857X, 71 (2), 2020, p. 493-516

Abay (2022), The Russia-Ukraine Crisis Poses a Serious Food Security Threat for Egypt, IFPRI Blog: Issue Post https://www.ifpri.org/blog/russia-ukraine-crisis-poses-serious-food-security-threat-egypt

Baquedano F. (2014), “Market integration and price transmission in consumer markets of developing countries”, Food Pol., 44 (2014), pp. 103-114, 10.1016/j.foodpol.2013.11.001

Banerjee, N. “Who Benefits from Soaring Wheat Prices in India?” *News Click,* May 24, 2022

https://www.newsclick.in/Who-Benefits-From-Soaring-Wheat-Prices-India.

Bechdol B. (2022) “Agriculture and Food Security: Casualties of the War in Ukraine” Center for strategic and international studies, Analysis, March 23.

Bentley A. (2022) “Near- to long-term measures to stabilize global wheat supplies and food security”, Nature Food, 3 (7) (2022), pp. 483-486, 10.1038/s43016-022-00559-y

FAS report (2021), “Wheat production -global” Federation of American Scientists, https://www.fas.usda.gov/data

FAS report (2022), “Wheat production -global” Federation of American Scientists, https://www.fas.usda.gov/data

FAO Report (2022) “Agriculture survey and Census report The Food and Agriculture Organization, https://www.fao.org/publications

Gomez F. (2017) “The Eurasian Wheat Belt and Food Security”, Springer International Publishing, pp. 247-257, 10.1007/978-3-319-33239-0-15

Mottaleb K, (2018) Threat of wheat blast to South Asia’s food security: An ex-ante analysis. Plops ONE 13(5): e0197555. https://doi.org/10.1371/journal.pone.0197555

OECD (2022) ‘Impacts & Policies of Russia Ukraine Conflict on Agricultural Market’

Science, Issue 23, https://www.oecd.org/ukraine-hub/policy-responses/the-impacts-and-policy-implications-of-russia-s-aggression-against-ukraine-on-agricultural-markets-0030a4cd/

