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Growth in Production and Export of Wheat in the World

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ABSTRACT: Wheat is staple food in most of the countries. During Covid pandemic and Ukraine war, Wheat trade was affected. The research is required to find the Wheat production and Export network in the World. The present paper emphasize on the Wheat trade around the World in past 25 years. The objectives of the research paper is to evaluate changes, growth and competition in production and export of Wheat in major countries of the World. For the purpose, data on Wheat production and export is collected from faostat from the year 1995 to 2020. The CV, Cuddy-Della Index, compound growth rate and correlation coefficients were estimated. The results can be useful for commodity trading agencies, exporters, importer etc.

From the result, it is concluded that the production of the Wheat is increased in World, especially in Ethiopia (531.20 %), Iraq (409.20 %), Uzbekistan (274.83 %) and Russian Federation (247.77 %) except USA, UK and Australia over recent 25 years. Though the China and India are major Wheat producing countries, still the need of growing population in the countries could not increase the export of Wheat. The variation, instability and growth in Wheat production is seen in all countries except USA, UK and Italy. Whereas the variation, instability and growth in Wheat Export is seen in all countries except Belgium, USA and Australia.

Very few countries Ethiopia, Iraq, Brazil and Russian Federation have growth in share of Wheat production in World's Production. These countries focused on research and development in Wheat production. Many countries are lagging to maintain their share in World's Wheat Production. The small countries like Brazil, Latvia, Estonia and Poland have grown their share in World's Wheat Export. Wheat export of Group of Russian Federation is negatively correlated and compete with Wheat export of USA and Canada and European countries. Wheat export of the countries nearly Russian Federation are positively correlated with it's Wheat export. Whereas, USA and European countries are positively correlated with each other for Wheat export.

KEYWORDS : Wheat production, Commodity, trade, export, growth , competition.

I. INTRODUCTION

Wheat is primary and basic food for all the World. It is chief ingredient in daily food plate i.e. bread/rotis of daily requirement. World Wheat production was 233.45 million tonnes in 1960 and it was 774.87 million tonnes 2021. The world population was 30.32 crores in 1960 and now its 783.66 crores(2021). The picture shows that the per capita wheat availability in World reduced to 98.87 kg (2021) from 769.95 kg (1960).

Green revolution in India could make the India self-sufficient in wheat requirement. Indian population was 36.10 crores in 1951. Indian Wheat Production was 6.46 million tonnes and productivity was 663 kg per hectare in 1950-51. It mean the per capita wheat availability was only 17.90 kg per annum. But proud to say that India is now self-sufficient. Now our population is 139.34 crores (2021) and wheat production is 106.84 million tonnes (2021-22 estimates) i.e. per capita availability is 76.67 kg per annum.

As Wheat has been our staple food, it is curious to know the growth in production and export of Wheat in major countries and World as whole. With this intension, present research work is done with following objectives



OBJECTIVES

The objectives of the present work is as follows

- 1) To study the changes in production and export in Wheat in Major countries and World;
- 2) To estimate the Compound Growth Rate in production and export in Wheat in Major countries and World;
- 3) To find the Competing and Supporting Major countries in World for Wheat export;

II. METHODOLOGY

This methodology will throw light on the source of data, period of the data, crop included, methods and tools considered to achieve the objectives.

A) Date source: Data on Production and Export in Wheat is collected from the official website of Food and Agricultural Organisation (FAO).

B) Estimation of Changes in production and export in Wheat in Major countries and World;

The Percentage change over the base year i.e. 1995 is estimated for with interval of 5 years and are compared over the time.

C) Estimation of Compound Growth Rate and Instability

The instability of cropped area is estimated by the Coefficient of Variation and Cuddy Della Index is used.

The formula is as given fallows

Coefficient of Variation(CV) : Standard Deviation / Mean

the following Cuddy Della Index (Ix) is used in comparison with CV to avoid over estimation.

Cuddy Della Index (Ix) is as follows:

$$I_x = CV \sqrt{1 - \bar{R}^2}$$

Where, CV = Coefficient of Variation ($\frac{\sigma}{\bar{X}}$)

\bar{R}^2 = Adjusted coefficient of multiple determination

The Compound Growth Rates in Production and Export of Wheat in Major Countries and World are estimated as per the following formula

The exponential function of the following type was used.

$$Y = ab^t$$

Where

Y = Production and Export of Wheat

t = time period in the years

b = trend value (coefficient)

a = intercept.

Compound Growth Rate = $(\text{Antilog } b - 1) \times 100$.

(Chand and et al. 2012)

The significance of the growth in the Production and Export in Wheat is tested with the help of 't' test. For getting normal base year, the triennial averages are taken as base year.

D) Estimation of Competing Countries for Wheat Export

The correlation coefficients are estimated to find the competing exporting countries. The significant correlation coefficients are taken into consideration to estimate competing countries in Wheat export.



III. RESULTS AND DISCUSSION

This section will focus on the extracts of the data analysis and discussion of the results of the analysis of the Changes in production and export of Wheat in Major countries, variation in production and export , growth in production and export in Wheat over the time, to find competing and supporting countries for Wheat Export. Results are presented and discussed in this section on the line of objectives mentioned. It is expected that the Wheat Export was stable in year 1995, but with the establishment of World Trade Organisation, the export and import become liberalized. Consequently, the trade in Wheat is increased.

2.1 Changes in Production of Wheat in Major Countries in the World

The table 1 show the changes in Production of Wheat in Major Countries in the World over the period the interval of 5 years in 25 years. The major Wheat producing countries are China, India, Russian Federation , United State of America and Canada.

The World’s production of Wheat is increased over the period of 25 years from 5494.7 lakh tones in year 1995 to 7626.53 lakh tones in year 2020(138.85 percent). The higher increase in Wheat production is also seen in Ethiopia (531.20 %), Iraq (409.20 %), Uzbekistan (274.83 %) and Russian Federation (247.77 %) over the period 25 years from year 1995 to 2020. In all countries production of Wheat is increased except United State of America, United Kingdom and Australia.

Overall, the production of the Wheat is increased in World, especially in Ethiopia (531.20 %), Iraq (409.20 %), Uzbekistan (274.83 %) and Russian Federation (247.77 %) except USA, UK and Australia over recent 25 years.

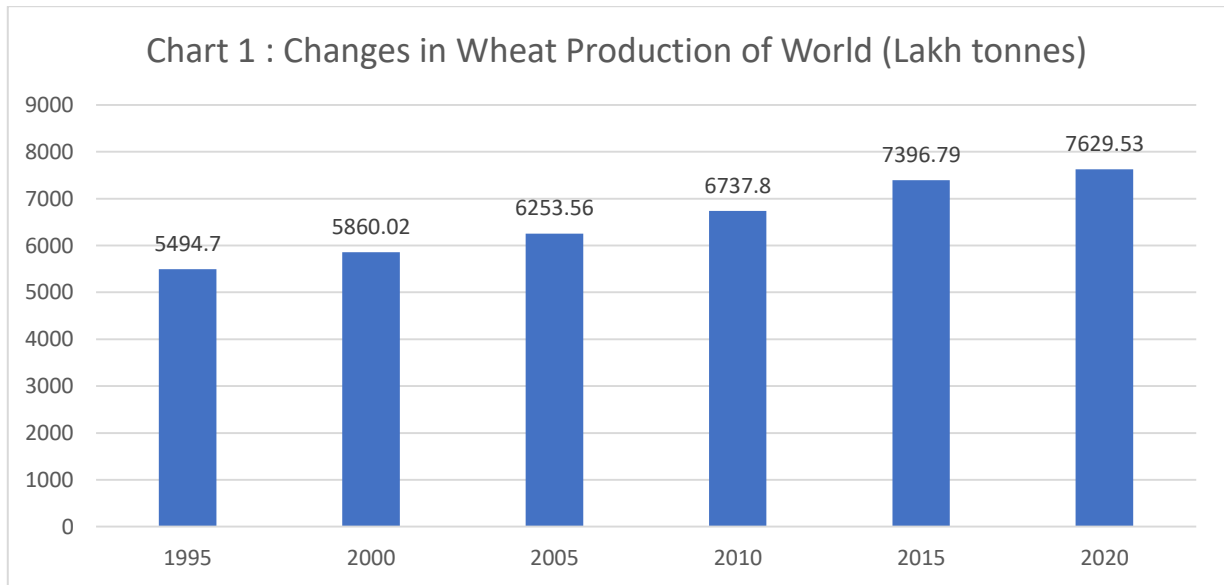
Table 1 : Changes in Production of Wheat in Major Countries

(Lakh tonnes)

Country	1995		2000		2005		2010		2015		2020	
	Prod	% change	Prod	% change	Prod	% change	Prod	% change	Prod	% change	Prod	% change
World	494.7	100.00	5860.02	106.65	6253.56	113.81	6737.8	122.62	7396.79	134.62	7629.53	138.85
China	040.27	100.00	1024.63	98.50	992.88	95.44	1159.05	111.42	1307.12	125.65	1339.28	128.74
China, mainland	040.24	100.00	1024.63	98.50	992.88	95.45	1159.02	111.42	1307.06	125.65	1339.23	128.74
India	25.68	100.00	724.46	115.79	700.49	111.96	827.86	132.31	915.57	146.33	1055.93	168.77
Russian Federation	23.59	100.00	374.84	115.84	459.92	142.13	531.62	164.29	649.48	200.71	801.75	247.77
United States of America	15.18	100.00	587.36	95.48	550.52	89.49	582.82	94.74	579.39	94.18	511.36	83.12
Canada	59.03	100.00	247.09	95.39	252.7	97.56	251.79	97.20	297.43	114.82	339.26	130.97
France	24.33	100.00	352.84	108.79	373.13	115.05	375.12	115.66	370.06	114.10	353.75	109.07
Pakistan	63.74	100.00	193.2	117.99	207.96	127.01	241.86	147.71	255.66	156.14	247.98	151.45
Ukraine	45.59	100.00	150.43	103.32	167.22	114.86	200.2	137.51	255.82	175.71	266.41	182.99
Germany	77.22	100.00	213.58	120.52	238.49	134.57	239.19	134.97	262.66	148.21	226.17	127.62
Turkey	180	100.00	193.33	107.41	208.37	115.76	206.91	114.95	207.33	115.18	197.5	109.72



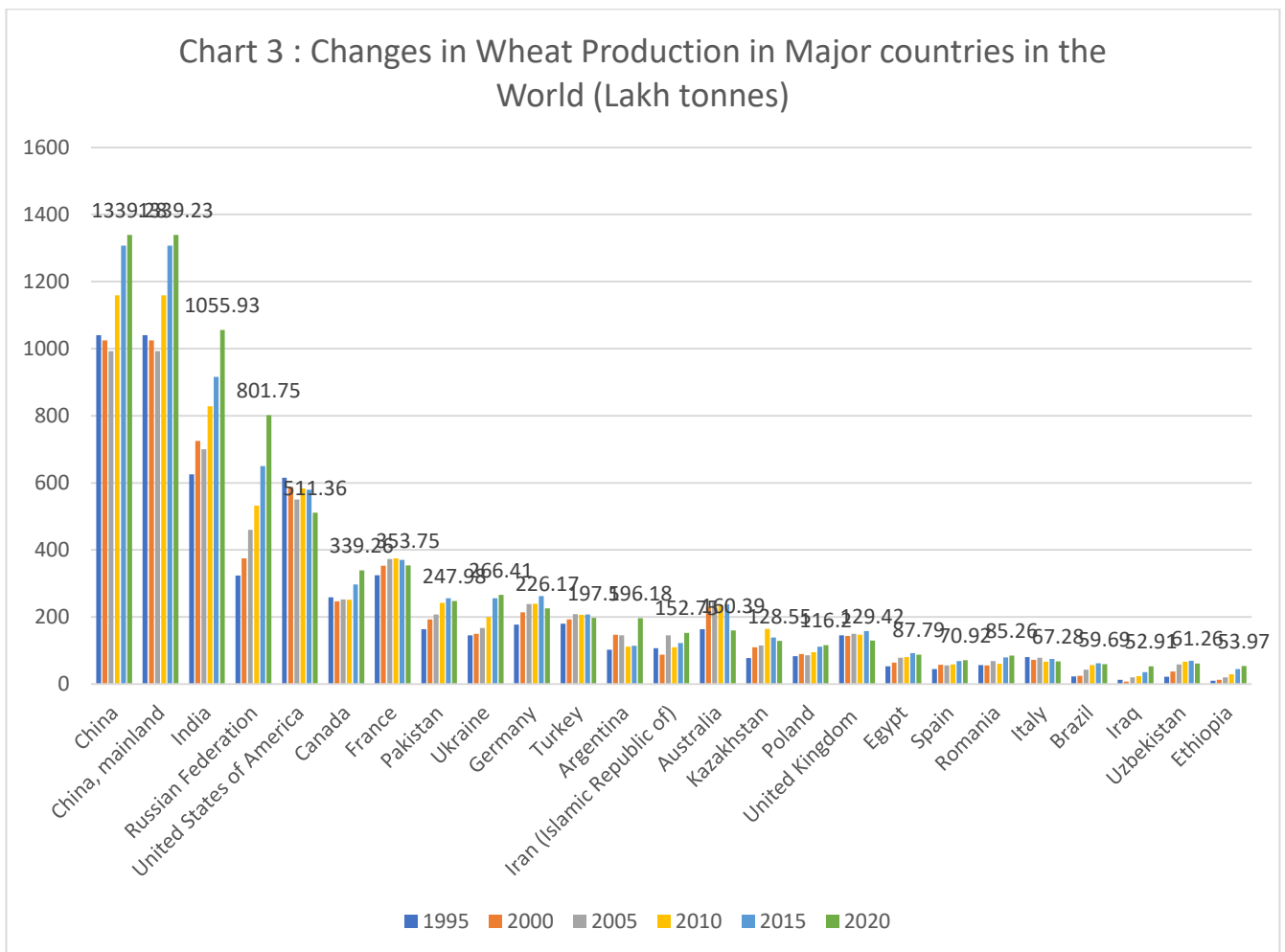
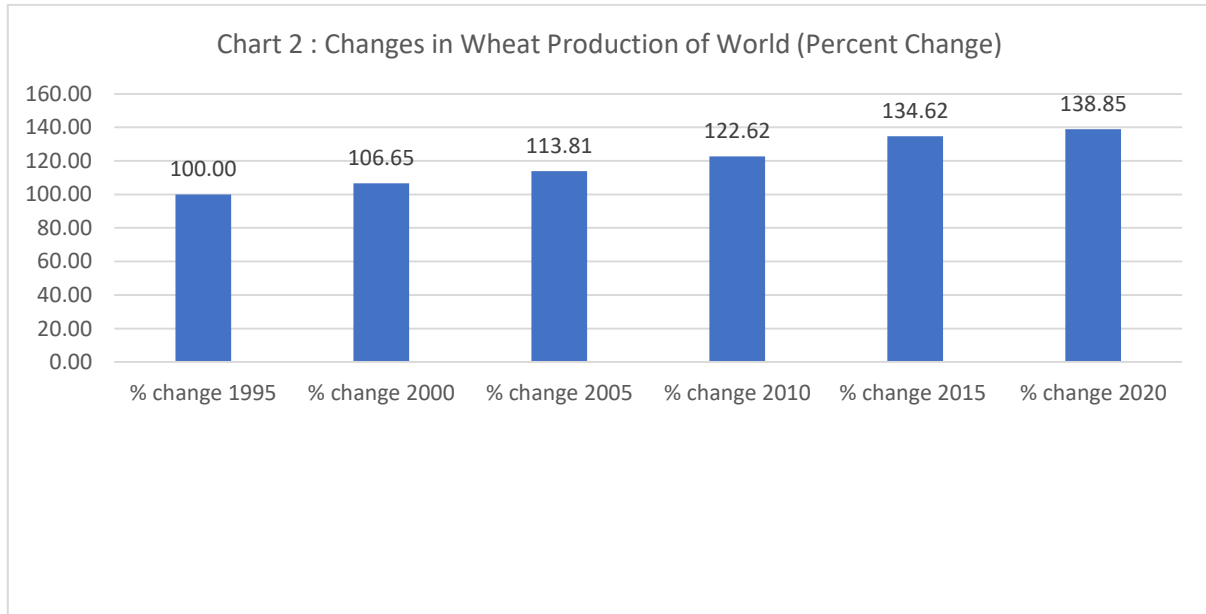
Argentina	02.28	100.00	147.42	144.13	145.24	142.00	111.97	109.47	114.78	112.22	196.18	191.81
Iran (Islamic Republic of)	07.04	100.00	87.4	81.65	145.13	135.58	109.71	102.49	122.31	114.27	152.75	142.70
Australia	63.89	100.00	229.91	140.28	243.96	148.86	235.55	143.72	237.73	145.05	160.39	97.86
Kazakhstan	77.4	100.00	110.07	142.21	115.32	148.99	164.74	212.84	139.1	179.72	128.55	166.09
Poland	83.01	100.00	89.46	107.77	85.75	103.30	95.12	114.59	111.38	134.18	116.2	139.98
United Kingdom	45.65	100.00	143.83	98.75	150.3	103.19	147.37	101.18	158.11	108.55	129.42	88.86
Egypt	52.98	100.00	63.88	120.57	78.64	148.43	80.36	151.68	92.5	174.59	87.79	165.70
Spain	44.94	100.00	57.95	128.95	55.48	123.45	58.74	130.71	69.02	153.58	70.92	157.81
Romania	56.49	100.00	56.1	99.31	68.93	122.02	60.49	107.08	79.93	141.49	85.26	150.93
Italy	80.62	100.00	72.07	89.39	78.46	97.32	66.75	82.80	75.25	93.34	67.28	83.45
Brazil	23.08	100.00	25.18	109.10	43.21	187.22	56.39	244.32	62.02	268.72	59.69	258.62
Iraq	12.93	100.00	6.96	53.83	20.49	158.47	24.19	187.08	35.84	277.18	52.91	409.20
Uzbekistan	22.29	100.00	37.62	168.78	58.88	264.15	66.37	297.76	69.52	311.89	61.26	274.83
Ethiopia	10.16	100.00	13.27	130.61	20.03	197.15	29.49	290.26	44.73	440.26	53.97	531.20





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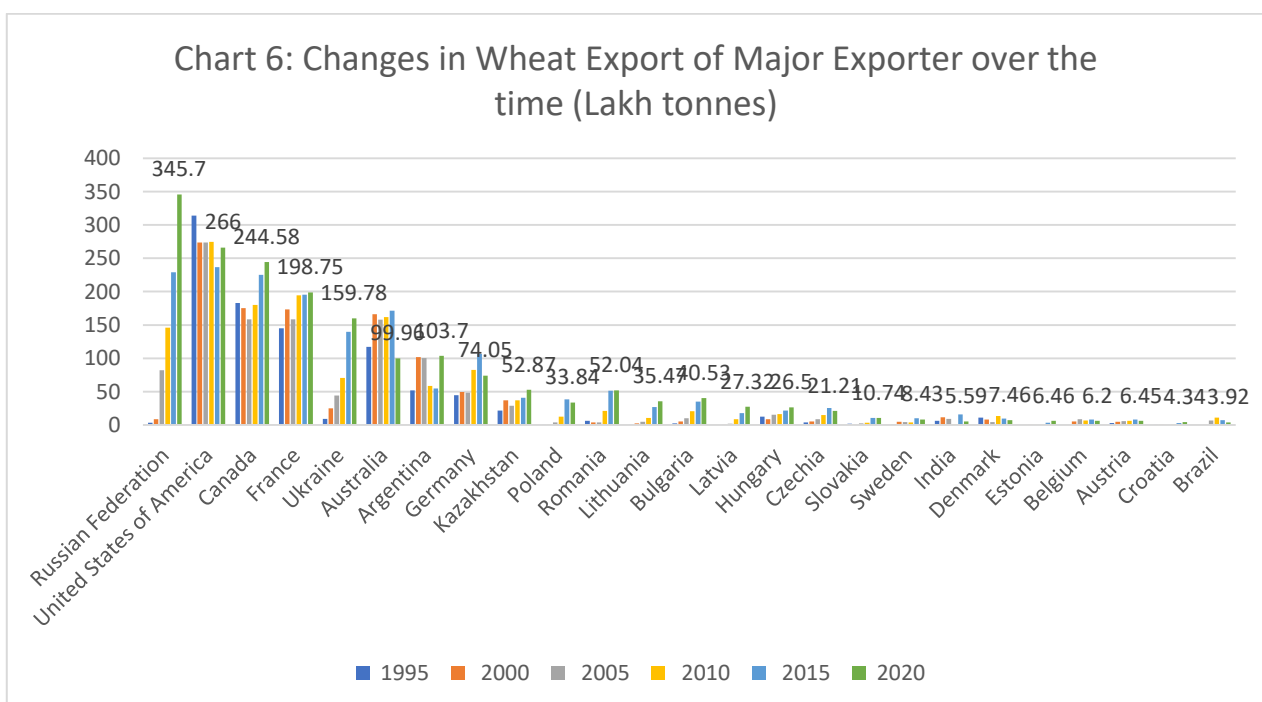
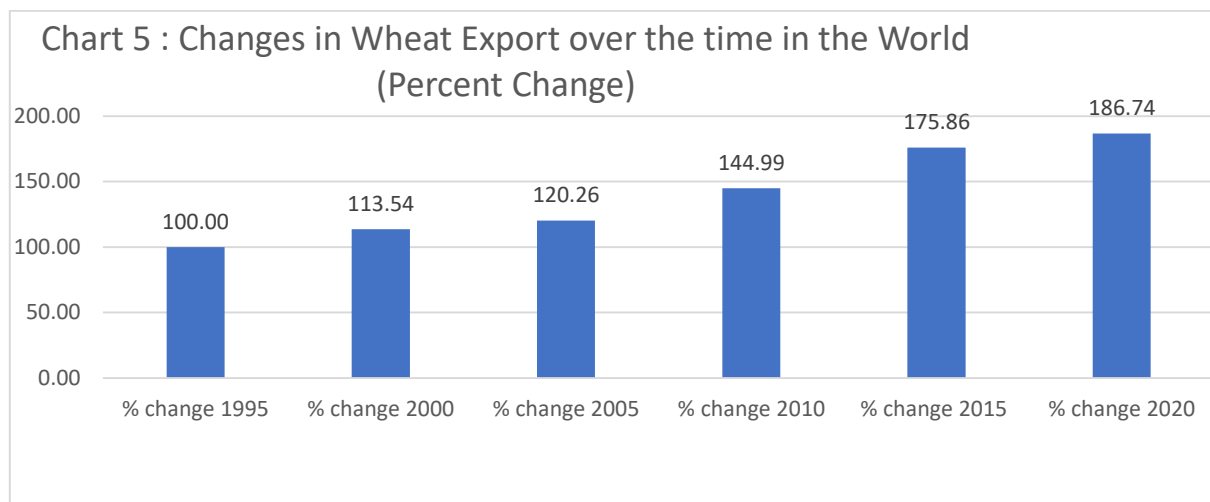
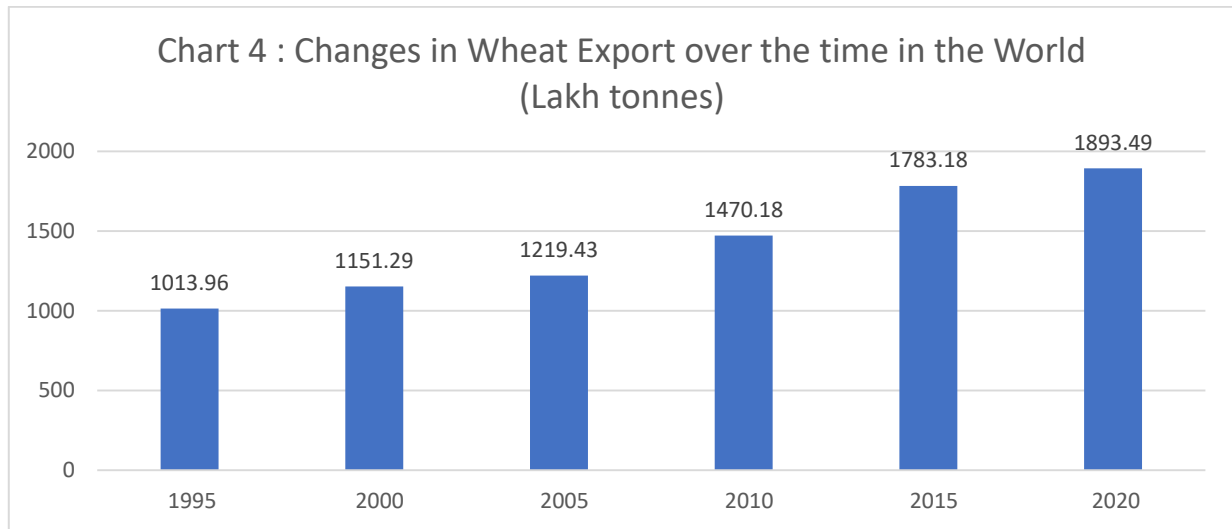


2.2 Changes in Wheat Export in Major Countries in the World

The Changes in Export Quantity of Wheat in Major Countries are presented in table 2. Major exporters of Wheat in the World are Russian Federation, United State of America, Canada and France.

The export of the Wheat in the World is increased from 1013.96 lakh tonnes in year 1995 to 1893.49 lakh tonnes in year 2020 i.e. 186.74 percent over base year (1995). The increase in Export of Wheat is seen in Brazil (19600 %) and is followed by Estonia (12920 %), Lithuania (12231 %) and Russian Federation (10319 %) over the period of 25 years. While the decrease in export of Wheat is seen in Denmark (66.79 %) and is followed by Australia (85.40 %) and India (89.87 %) in recent 25 years. Though the China and India are major Wheat producing countries, still the need of growing population in the countries, which could not increase the export of Wheat.

(Lakh tonnes)												
Country	1995		2000		2005		2010		2015		2020	
	Expt	% change	Expt	% change	Expt	% change	Expt	% change	Expt	% change 2015	Expt	% change
World	1013.96	100.00	1151.29	113.54	1219.43	120.26	1470.18	144.99	1783.18	175.86	1893.49	186.74
Russian Federation	3.35	100.00	9.02	269.25	82.32	2457.31	146.18	4363.58	229	6835.82	345.70	10319.40
United States of America	313.8	100.00	273.53	87.17	273.79	87.25	274.54	87.49	236.52	75.37	266.00	84.77
Canada	182.86	100.00	175.3	95.87	158.47	86.66	180.03	98.45	225.01	123.05	244.58	133.75
France	145.03	100.00	173.24	119.45	158.32	109.16	194.33	133.99	195.19	134.59	198.75	137.04
Ukraine	9.49	100.00	25.26	266.17	44.12	464.91	70.94	747.52	139.72	1472.29	159.78	1683.67
Australia	117.05	100.00	166.02	141.84	157.8	134.81	161.8	138.23	171.61	146.61	99.96	85.40
Argentina	52.06	100.00	102.02	195.97	100.35	192.76	58.56	112.49	54.77	105.21	103.7	199.19
Germany	44.69	100.00	49.82	111.48	48.87	109.35	82.57	184.76	106.48	238.26	74.05	165.70
Kazakhstan	22.01	100.00	37.05	168.33	28.94	131.49	37.29	169.42	40.97	186.14	52.87	240.21
Poland	0.32	100.00	1.32	412.50	4.28	1337.50	12.61	3940.63	38.52	12037.50	33.84	10575.00
Romania	6.38	100.00	4.26	66.77	3.96	62.07	21.3	333.86	51.72	810.66	52.04	815.67
Lithuania	0.29	100.00	2.56	882.76	5.09	1755.17	10.69	3686.21	27.2	9379.31	35.47	12231.03
Bulgaria	2.8	100.00	5.46	195.00	10.29	367.50	20.67	738.21	34.99	1249.64	40.53	1447.50
Latvia	0	100.00	0.36	100.00	2.18	605.56	8.67	2408.33	18.13	5036.11	27.32	7588.89
Hungary	12.74	100.00	8.99	70.57	15.64	122.76	16.73	131.32	21.87	171.66	26.5	208.01
Czechia	3.98	100.00	5.29	132.91	8.72	219.10	14.96	375.88	25.52	641.21	21.21	532.91
Slovakia	2.2	100.00	0.46	20.91	2.46	111.82	3.33	151.36	10.71	486.82	10.74	488.18
Sweden	1.65	100.00	4.97	301.21	4.48	271.52	4.2	254.55	10.13	613.94	8.43	510.91
India	6.22	100.00	11.54	185.53	9.34	150.16	1.67	26.85	15.84	254.66	5.59	89.87
Denmark	11.17	100.00	8.53	76.37	4.65	41.63	13.4	119.96	9.84	88.09	7.46	66.79
Estonia	0	100.00	0.05	100.00	0.22	440.00	0.95	1900.00	3.59	7180.00	6.46	12920.00
Belgium	0	100.00	5.32	100.00	8.6	161.65	6.88	129.32	8.15	153.20	6.2	116.54
Austria	3.29	100.00	4.93	149.85	5.97	181.46	6.25	189.97	8.16	248.02	6.45	196.05
Croatia	0.87	100.00	1.01	116.09	0.72	82.76	1.45	166.67	3.22	370.11	4.34	498.85
Brazil	0	100.00	0.02	100.00	6.75	33750.00	11.27	56350.00	7.26	36300.00	3.92	19600.00



2.3 Growth in Production of Wheat in Major Countries of the World

The result of the Compound Growth rate with Variation and Instability are presented in table 3. The variation of the Wheat production in the World is 10.91 percent from mean and instability is 3.91 percent over the period of 25 years i.e. from year 1995 to year 2020. The compound growth rate of the Wheat Production in the World was 1.33 percent for same period.

The major growth rate was seen in Ethiopia (7.629 %), Iraq (6.538 %), Brazil (4.070 %) and Russian Federation (3.617 %). The growth of China was 1.2232 % and India was 2.057 % over the period of 25 years. The production was declined in USA, UK and Italy.

Overall, the variation, instability and growth in Wheat production is seen in all countries except USA, UK and Italy.

Table 3 : Compound Growth Rate in Production of Wheat in Major Countries

Area	Variation (CV)	Instability (Cuddy-Della index)	Compound Growth Rate
World	10.91	3.915	1.333
China	12.953	8.878	1.232
China, mainland	12.951	8.878	1.231
India	16.84	5.93	2.057
Russian Federation	32.182	17.099	3.617
United States of America	11.209	9.95	-0.662
Canada	17.589	14.094	1.361
France	9.629	9.552	0.137
Pakistan	14.869	5.282	1.889
Ukraine	27.349	17.739	2.810
Germany	11.49	9.257	0.923
Turkey	7.207	6.62	0.376
Argentina	24.438	23.56	0.684
Iran (Islamic Republic of)	21.715	20.408	0.959
Australia	24.4	24.256	0.306
Kazakhstan	29.078	24.016	2.487
Poland	13.411	9.583	1.187
United Kingdom of Great Britain and Northern Ireland	11.71	11.35	-0.441
Egypt	16.592	7.186	2.059
Spain	19.317	16.983	1.191
Romania	32.735	25.383	2.824
Italy	9.307	8.906	-0.339
Brazil	34.948	23.091	4.070
Iraq	57.359	36.003	6.538
Uzbekistan	26.346	15.232	3.411
Ethiopia	53.527	11.864	7.629



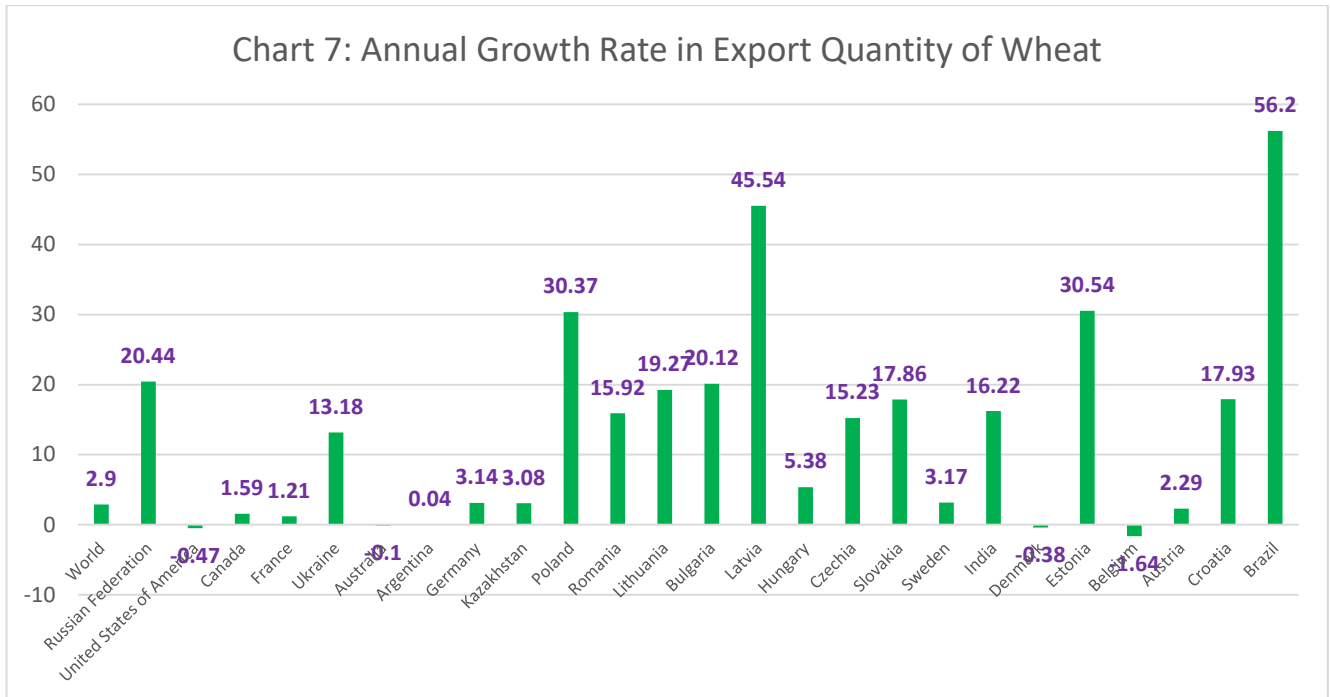
2.4 Growth in Export of Wheat in Major Countries of the World

The table no. 4 shows the Variation, Instability and Compound Growth rate of the Wheat in the World. The variation in the export of the Wheat in the World was 22.92 percent from the average of the export, while the instability was 6.21 percent per annum over the period 25 years. The compound growth rate of Wheat Export was 2.90 percent per annum for the same period.

The major growth in Exporting countries was seen in Brazil(56.20 %), Latvia (45.54 %) , Estonia (30.54 %), Poland (30.37 %) and Russian Federation (20.44 %). While the export of the Wheat by Belgium, USA and Australia was declined in the period of 25 years.

Overall, the variation, instability and growth in Wheat Export is seen in all countries except Belgium, USA and Australia.

Table 4 : Compound Growth Rate in Export Quantity of Wheat in Main Countries			
Area	Variation (CV)	Instability (Cuddy-Della index)	Compound Growth Rate
World	22.92	6.21	2.90
Russian Federation	88.23	32.79	20.44
United States of America	12.61	12.13	-0.47
Canada	19.01	14.32	1.59
France	13.71	10.21	1.21
Ukraine	81.84	42.29	13.18
Australia	26.74	26.74	-0.10
Argentina	37.75	37.54	0.04
Germany	34.88	25.55	3.14
Kazakhstan	35.26	28.52	3.08
Poland	113.47	65.56	30.37
Romania	99.72	52.62	15.92
Lithuania	95.76	40.25	19.27
Bulgaria	80.72	32.25	20.12
Latvia	108.01	43.55	45.54
Hungary	43.11	26.76	5.38
Czechia	72.46	33.04	15.23
Slovakia	105.25	57.3	17.86
Sweden	48.69	43.07	3.17
India	139.38	139.24	16.22
Denmark	35.38	35.25	-0.38
Estonia	130.97	70.47	30.54
Belgium	23.91	19.37	-1.64
Austria	23.75	17.89	2.29
Croatia	81.43	57.51	17.93
Brazil	122.48	107.42	56.20



2.4 Growth in Country-wise share in the World’s Wheat Production

The table 5 indicates the growth in the share of each country in the World’ Wheat Production. The countries are measured in the one scale to compare the production share in World.

Variation, Instability and Growth in the Share of the Wheat Production in World was high in Ethiopia (6.214 %) , is followed by Iraq (5.137 %), Brazil (2.702 %) and Russian Federation (2.254 %) with higher variation. It showed the government efforts and varietal research is major agenda in these countries. But the decline in share of World’s Wheat production are seen in USA, France, China, UK, Italy, Australia and may others. In such countries, the focus can be given on research and development for Wheat Production.

Overall, it is found that the very few countries Ethiopia, Iraq, Brazil and Russian Federation have growth in share of Wheat production in World’s Production. These countries focused on research and development in Wheat production. Many countries are lagging to maintain their share in Worlds’ Wheat Production.



Table 5 : Growth in Country-wise share in the World’s Wheat Production

Country	Variation (CV)	Instability (Cuddy-Della index)	Compound Growth Rate
China	7.495	7.429	-0.100
India	7.865	5.627	0.715
Russian Federation	22.78	15.133	2.254
United States of America	17.949	9.895	-1.968
Canada	13.284	13.283	0.028
France	12.037	8.395	-1.180
Pakistan	7.918	6.848	0.550
Ukraine	19.389	16.249	1.458
Germany	8.924	8.447	-0.405
Turkey	9.805	6.725	-0.944
Argentina	23.015	22.67	-0.640
Iran (Islamic Republic of)	22.505	22.326	-0.369
Australia	24.205	23.122	-1.013
Kazakhstan	25.984	25.021	1.140
Poland	8.001	7.927	-0.144
United Kingdom of Great Britain and Northern Ireland	16.305	10.151	-1.751
Egypt	9.585	8.056	0.717
Spain	17.783	17.757	-0.139
Romania	26.458	24.389	1.472
Italy	15.226	8.457	-1.650
Brazil	31.1	26.091	2.702
Iraq	49.654	35.212	5.137
Uzbekistan	22.278	18.365	2.051
Ethiopia	44.115	8.832	6.214
other	5.89	5.826	-0.108

2.5 Growth in Country-wise share in the World’s Wheat Export

The table 6 reveals the how the Wheat exporting countries competing each other for wheat export and this is seen from the growth in their share in World’s Wheat Export.

The growth in the share of the country in Wheat Export is increased in Brazil 51.80 % , it is followed by Latvia (41.43 %), Estonia (26.86 %) and Poland (26.70 %) . These countries are making strong effort to increase their Wheat export to the World. While the some countries’ share in global export is declined over the period i.e. Belgium, USA, Denmark and Australia.

Overall, the small countries like Brazil, Latvia, Estonia and Poland have strongly grown their share in World’s Wheat Export.

Table 6 : Growth in Country-wise share in the World's Wheat Export			
Country	CV	Cuddy-Della index	CGR
Russian Federation	73.379	27.264	17.04
United States of America	28.008	13.779	-3.28
Canada	16.98	13.27	-1.28
France	16.153	10.597	-1.65
Ukraine	66.995	41.015	9.99
Australia	31.01	22.968	-2.92
Argentina	39.919	35.774	-2.79
Germany	22.127	21.906	0.24
Kazakhstan	31.702	31.699	0.17
Poland	100.648	58.624	26.70
Romania	85.816	50.158	12.65
Lithuania	80.456	31.328	15.90
Bulgaria	66.488	30.17	16.73
Latvia	97.288	36.511	41.43
Hungary	32.271	29.754	2.41
Czechia	59.446	34.494	11.98
Slovakia	89.655	51.087	14.54
Sweden	43.609	43.609	0.26
India	134.576	134.141	12.94
Denmark	41.379	33.334	-3.19
Estonia	120.563	61.849	26.86
Belgium	41.294	21.429	-4.41
Austria	21.051	20.52	-0.60
Croatia	75.773	65.036	14.60
Brazil	123.733	112.833	51.80
other	30.267	24.834	-2.80



Chart 8 : Annual Growth Rate in Country-wise share of Wheat Export

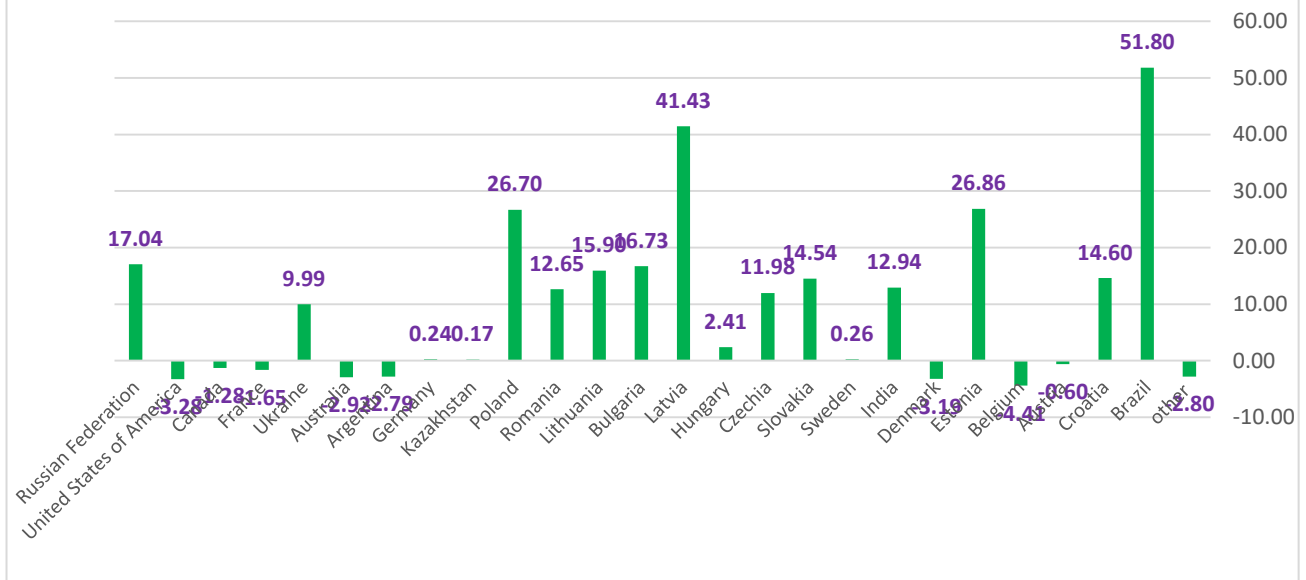


Table 7 : Competing Countries for Wheat Export in the World

Country 1	Country 2	Correlation Coefficient
Russian Federation	United States of America	-0.82
	Canada	-0.62
	France	-0.79
	Australia	-0.77
	Belgium	-0.79
United States of America	Ukraine	-0.86
	Poland	-0.83
	Romania	-0.73
	Lithuania	-0.83
	Bulgaria	-0.83
	Latvia	-0.85
	Czechia	-0.77
	Slovakia	-0.79
	Estonia	-0.76
Canada	Russian Federation	-0.62
	Brazil	-0.43
France	Russian Federation	-0.79
	Ukraine	-0.78
	Poland	-0.64
	Romania	-0.65
	Lithuania	-0.72
	Bulgaria	-0.68
	Latvia	-0.74
	Slovakia	-0.7
Estonia	-0.7	
Ukraine	Belgium	-0.7
	others	-0.64



Australia	Lithuania	-0.62
	Russian Federation	-0.77
	Latvia	-0.64
Argentina	Romania	-0.61
Poland	Belgium	-0.65
	others	-0.52
Romania	others	-0.66
Lithuania	Belgium	-0.76
	others	-0.64
Bulgaria	Belgium	-0.76
	others	-0.6
Latvia	Belgium	-0.73
	others	-0.64
Czechia	Belgium	-0.63
Slovakia	others	-0.64
Estonia	Belgium	-0.65
	others	-0.72

Table 8 : Supporting Countries for Wheat Export in the World

Country 1	Country 2	Correlation Coefficient
Russian Federation	Ukraine	0.80
	Poland	0.73
	Romania	0.72
	Lithuania	0.81
	Bulgaria	0.79
	Latvia	0.84
	Czechia	0.73
	Slovakia	0.77
	Estonia	0.75
United States of America	France	0.73
	Belgium	0.80
Canada	Belgium	0.75
France	Belgium	0.66
	other	0.64
Ukraine	Poland	0.81
	Romania	0.75
	Lithuania	0.81
	Bulgaria	0.82
	Latvia	0.83
	Czechia	0.69
	Slovakia	0.81
	Estonia	0.75
Poland	Romania	0.76
	Lithuania	0.90
	Bulgaria	0.73
	Latvia	0.86
	Czechia	0.83
	Slovakia	0.90
	Estonia	0.83
Romania	Lithuania	0.84
	Bulgaria	0.88
	Latvia	0.84
	Czechia	0.68



	Slovakia	0.83
	Estonia	0.78
<i>Lithuania</i>	Bulgaria	0.85
	Latvia	0.97
	Czechia	0.81
	Slovakia	0.86
	Estonia	0.94
	<i>Bulgaria</i>	Latvia
Czechia		0.72
Slovakia		0.81
Estonia		0.79
<i>Latvia</i>	Czechia	0.80
	Slovakia	0.86
	Estonia	0.95
<i>Czechia</i>	Slovakia	0.82
	Estonia	0.70
<i>Slovakia</i>	Estonia	0.83

2.5 Competing and Supporting Countries for Wheat Export in the World

The Competing Countries in Wheat Export are presented in the table 7. Export of the Wheat from Russian Federation compete and negatively correlated with the wheat export of USA, Canada, France, Australia, Belgium. The Wheat export of USA compete with most of the Ukraine, Poland Romania, Lithuania, Bulgaria, Latvia countries. Canada's Wheat export compete with Wheat export of Russian Federation and Brazil significantly.

The table 8 represents Supporting Countries for Wheat Export in the World. Wheat export from Russian Federation are positively correlated with the Wheat export of Ukraine, Poland Romania, Lithuania, Bulgaria, Latvia countries are supportive to each other. Wheat export of USA support France's Wheat export. Canadas' Wheat export supports Belgium.

Overall, it is seen that Wheat export of the countries nearly Russian Federation are positively correlated with it's Wheat export. Whereas, USA and European countries are positively correlated with each other for Wheat export. Wheat export of Group of Russian Federation is negatively correlated with Wheat export of USA and Canada and European countries.

IV. CONCLUSION

From the result, it is concluded that the production of the Wheat is increased in World, especially in Ethiopia (531.20 %), Iraq (409.20 %), Uzbekistan (274.83 %) and Russian Federation (247.77 %) except USA, UK and Australia over recent 25 years. Though the China and India are major Wheat producing countries, still the need of growing population in the countries could not increase the export of Wheat.

The variation, instability and growth in Wheat production is seen in all countries except USA, UK and Italy. Whereas the variation, instability and growth in Wheat Export is seen in all countries except Belgium, USA and Australia.

Very few countries Ethiopia, Iraq, Brazil and Russian Federation have growth in share of Wheat production in World's Production. These countries focused on research and development in Wheat production. Many countries are lagging to maintain their share in Worlds' Wheat Production. The small countries like Brazil, Latvia, Estonia and Poland have grown their share in World's Wheat Export.

Wheat export of Group of Russian Federation is negatively correlated and compete with Wheat export of USA and Canada and European countries. Wheat export of the countries nearly Russian Federation are positively correlated with it's Wheat export. Whereas, USA and European countries are positively correlated with each other for Wheat export.



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