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Trade scenario of basmati paddy in Haryana

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Abstract

The study attempts to analyze the basmati rice export for the period 1998-99 to 2017-18. The quantity of basmati rice exported from India was 597.76 thousand tons during the period 1998-99 and the same has gone up to 4056.77 thousand tons during the period 2017-18. The CAGR for quantity and value realization increased at 12.60 percent and 19.45 percent. Among the eight major basmati rice importing countries from India. Iran emerged as the largest importer of basmati rice from India, the export quantity was 877.42 thousand tons during the year 2017-18, constitute 21.62 percent, followed by Saudi Arabia (19.53%), Iran (10.69%), U.A.E (10.66%), U.K (4.43%), Yemen Republic (4.13%), Kuwait (4.11%), U.S.A (3.13%) and other countries (21.83%), respectively.

Keywords: Trade, export, import, basmati, Haryana

Introduction

Rice (*Oryza sativa*) is the staple food of more than half of the world population. The population of the world at present was 7.53 billion in the year 2017. Rice provides about 20 percent of the global average calorie intake and its cultivation occupies 11 percent of world agricultural land (Food and Agriculture Organization, FAOSTAT 2019). India is the second largest producer of rice (111.01 million tons, 2017-18) and was the largest exporter of rice in year 2015-16 (Commodity Profile, 2015-16). More than 90 percent of the world's rice is grown and consumed in Asia and contributes to 60 percent of the calories consumption by Asians (Raghuram 2008) [5]. It constitutes of 44 percent of the overall food-grains consumption inside the country and it occupy 23 percent of gross cropped area in India (Mishra *et al.*, 2014) [4]. The major rice producing states in Northern India are Punjab, Haryana and Uttar Pradesh. Punjab has the maximum yield of basmati rice *i.e.* 3590 Kg ha⁻¹, whereas Haryana rank second *i.e.* 3372 Kg ha⁻¹. Within the international market rice is trade under two main categories like fragrant and non-fragrant. In case of fragrant/basmati rice. India dominates the Basmati rice trade. Nearly 70 percent of total world basmati production comes from India and the rest is produced by Pakistan, Philippines and China (Sidhu *et al.*, 2014) [6]. Extra-long slight grains that elongate at least twice of their original size with attribute soft and fluffy surface upon cooking, greater aroma and different Flavour make basmati rice as a single along with other aromatic long grain rice varieties. Basmati exports from India peak throughout March-April and also the November-December period. Basmati rice constitutes the foremost share of rice exports from India. India earned Rs. 26870.16 Cr from it during 2017-18. The major export destinations of basmati rice in the world are Saudi Arabia, Iran, United Arab Emirates, Iraq, United Kingdom and United States of America. Keeping in view the importance of basmati rice, the study was undertaken study the trend of export and prices of basmati rice from India.

Methods and Material

Collection of data

The current study was based on secondary data sourced from Agricultural and Processed Food Products Export Development Authority (APEDA), Directorate General of Commercial Intelligence and Statistics (DGCIS) for a period of 20 years (1998-2017).

Estimation of growth rate

$$Y = ab^t \quad (1)$$

Where,

Y = Index number of area, production, productivity as the dependent variable

t = Time variable (year) as independent variable

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a = Intercept
b = Regression coefficient

Equation (1) can be expressed in logarithmic form as follows:
Log y = log a + t log b
Log y = A + Bt

Where
A = log a
B = log b

The compound annual growth rate "r" was computed as:
 $r = (\text{Antilog of } b - 1) \times 100$

Results and Discussion

Export of basmati rice, total rice and total agricultural exports in India

India exported 597.76 thousand tons of basmati rice during 1998-99. From year 2006-07 *i.e.* 1045.71 thousand tons and continuously increasing to 4056.77 thousand tons during the year 2017-18 given in Table 1. The increasing pattern of export quantity of basmati rice may be attributed to the increase in the production of basmati rice. The percentage share of quantity of basmati rice export in the total rice export from India varied from 12.04 percent to 31.93 percent during the study period. The highest share was observed during 2010-11 *i.e.* 95.93 percent. Similarly, the export quantity of basmati rice, during 1998-99 to 2017-18 varied from 9.95 percent during 1998-99, to 18.20 percent during 2017-18. The highest share was observed during 2010-11 *i.e.* 20.49 percent. India exported basmati worth Rs. 1876.90 Cr during the year 1997-98. From year 2006-07 it continuously increased from Rs. 2792.80 Cr to Rs. 29299.95 Cr till 2013-14. The export value of basmati rice was Rs. 26870.16 Cr during the year 2017-18 given in Table 1. The maximum export value of basmati rice from India was observed during the year 2013-14 *i.e.* Rs. 29299.95 Cr. The increase in export value may be attributed to increase in unit price due to higher demand of basmati rice in the world markets. Similarly, the share of export value of basmati rice to total rice export earnings from India varied 29.88 percent, during 1997-98 to 53.92 percent during 2017-18. The highest share was observed during 2010-11 *i.e.* 98.00 percent. Similarly, the percentage share of basmati rice to total agricultural export from India varied 19.51 percent during 1997-98 and 22.44 percent during 2017-18. The highest share was observed in 2009-10 *i.e.* 30.83 percent.

The per unit price of Indian basmati rice during the year 1998-99 was Rs. 3140 q^{-1} . From year 2005-06 it went from Rs. 2609 q^{-1} and continuously increased up to 2008-09 *i.e.* Rs. 6089 q^{-1} . In the year 2017-18 per unit price of basmati rice from India was Rs. 6624 q^{-1} . The maximum per unit price of basmati rice from India was observed during the year 2013-14 *i.e.* Rs. 7798 q^{-1} . (Table 1)

Total rice exported from India was worth Rs. 6280.75 Cr during the year 1998-99. From year 2008-09 onwards it continuously increased from *i.e.* Rs. 11164.40 Cr up to the year 2014-15 *i.e.* Rs. 48026.43 Cr. The export value of total rice was Rs. 49837.98 Cr during the year 2017-18. Similarly, the value of total agricultural exports was Rs. 9617.75 Cr during the year 1998-99. From year 1999-2000 *i.e.* Rs. 7286.91 Cr and continuously increasing up to the year 2008-09 *i.e.* Rs. 35447.14 Cr. The value of total agricultural exports during the year 2017-18 *i.e.* Rs. 119751.00 Cr. The maximum

value of total agricultural exports was observed Rs. 136922.32 Cr during the year 2013-14 (Table 4.11).

The per unit price of total rice from India was Rs. 1265 q^{-1} during the year 1998-99. From year 2002-03 *i.e.* Rs. 1167 q^{-1} and continuously increasing throughout the year 2005-06 *i.e.* Rs. 1522 q^{-1} . In the year 2017-18 per unit price of total rice from India *i.e.* Rs. 3923 q^{-1} . The maximum per unit price of total rice from India was observed during the year 2009-10 *i.e.* Rs. 5219 q^{-1} also given in Table 1. Similarly, the per unit price of total agricultural exports from India during the year 1998-99 *i.e.* Rs. 1600 q^{-1} . From year 2002-03 *i.e.* Rs. 1178 q^{-1} and continuously increasing throughout the year 2006-07 *i.e.* Rs. 2009 q^{-1} . In the year 2017-18 per unit price of total agricultural export from India *i.e.* Rs. 5372 q^{-1} . The maximum per unit price of total agricultural export from India was observed during the year 2017-18 *i.e.* Rs. 5372 q^{-1} .

The details on the CAGR of basmati rice export, total rice export and total agricultural export during 1998-99 to 2017-18 in India given in Table 1. The results indicated that the quantity of total basmati export, total rice export and total agricultural export during the period 1998-99 to 2017-18 increasing with CAGR of positive 12.60 percent, positive 8.91 percent and positive 9.26 percent. Similarly, the value of total basmati export, total rice export and total agricultural export during the period 1998-99 to 2017-18 increased with a CAGR of 19.45 percent, 17.18 percent and 18.50 percent. Similarly, the results indicated that the per unit price of total basmati export, total rice export and total agricultural export during the period 1998-99 to 2017-18 increasing with a CAGR of 6.08 percent, 7.60 percent and 8.46 percent respectively. The percentage share of quantity of basmati rice export from Haryana in the total rice export from India varied 1.00 percent during 2007-08, to 4.90 percent during 2017-18. The highest share was observed during 2010-11 *i.e.* 8.31 percent. Similarly, the basmati exported from Haryana constituted 0.42 percent of total agricultural exports of India during 2007-08 which increased to 2.79 percent during 2017-18. The highest share was observed during 2016-17 share was 2.95 percent. The value of basmati exported from Haryana was Rs. 306.10 Cr during the year 2007-08 which continuously increased to Rs. 4193.25 Cr during the year 2017-18 (Table 2). Similarly, the percentage share of export value of basmati rice from Haryana to total rice export earnings from India varied 2.60 percent, during 2007-08 to 8.41 percent during 2017-18. The highest share was observed during 2016-17, share was 8.92 percent. Similarly, the percentage share of basmati rice from Haryana to total agricultural export from India varied 1.04 percent during 2007-08 and 3.50 percent during 2017-18.

The per unit price of basmati rice from Haryana was Rs. 4716 q^{-1} during the year 2007-08 which continuously increased to Rs. 7627 q^{-1} during 2013-14 and declined later on in 2017-18 to Rs. 6739 q^{-1} . The maximum per unit price of basmati rice from Haryana was observed Rs. 7627 q^{-1} during the year 2013-14 (Table 2).

India exported 6469.28 thousand tons of rice during the year 2007-08 and the exports rose to 12705.26 thousand tons during the year 2017-18 (Table 2). Similarly, the quantity of total agricultural exports was 15422.91 thousand tons during the year 2007-08 which went up to 22293.56 thousand tons in 2017-18. The value of total rice exports has increased from Rs. 11754.37 Cr in 2007-08 to Rs. 49837.98 Cr in 2017-18.

The details on the CAGR of basmati rice export from Haryana, total rice export and total agricultural export

indicated that the export quantity of basmati rice from Haryana, to total rice export and total agricultural export from

India during the period 2007-08 to 2017-18 increasing with CAGR of 23.90 percent, 17.30 percent and 7.23 percent.

Table 1: Description of basmati, total rice and total agricultural exports from India (1998-2017)

Year	Basmati			Total rice			Total Agri. Exports			Basmati/ Total rice	Basmati/ Total rice	Basmati/ Total Agri. Exports	Basmati/ Total Agri. Exports
	Qty.	Value	Price	Qty.	Value	Price	Qty.	Value	Price	Qty.	Value	Qty.	Value
1998-99	597.76	1876.9	3140	4963.6	6280.75	1265	6010.2	9617.75	1600	12.04	29.88	9.95	19.51
2002-03	710.16	2062.13	2904	5047.22	5888.31	1167	11533.05	13587.92	1178	14.07	35.02	6.16	15.18
2006-07	1045.71	2792.8	2671	4747.9	7035.88	1482	10529.38	21156.22	2009	22.02	39.69	9.93	13.2
2007-08	1183.36	4344.58	3671	6469.28	11754.37	1817	15422.91	29563.99	1917	18.29	36.96	7.67	14.7
2008-09	1556.41	9477.03	6089	2488.29	11164.4	4487	13149.7	35447.14	2696	62.55	84.89	11.84	26.74
2009-10	2016.78	10889.13	5399	2156.32	11254.42	5219	11256.48	35317.39	3138	93.53	96.75	17.92	30.83
2010-11	2370.66	11354.63	4790	2471.35	11585.92	4688	11567.04	42433.96	3669	95.93	98	20.49	26.76
2011-12	3178.17	15449.59	4861	7175.89	24108.72	3360	19810.13	83484.18	4214	44.29	64.08	16.04	18.51
2012-13	3459.9	19409.39	5610	10147.89	33858.29	3336	30172.92	118250.67	3919	34.09	57.33	11.47	16.41
2013-14	3757.27	29299.95	7798	10890.45	47049.91	4320	30001.77	136922.32	4564	34.5	62.27	12.52	21.4
2014-15	3702.26	27597.89	7454	11976.31	48026.43	4010	27134.29	131342.88	4840	30.91	57.46	13.64	21.01
2015-16	4045.82	22718.59	5615	10510.39	38201.98	3635	20469.72	107431.66	5248	38.49	59.47	19.76	21.15
2016-17	3985.2	21512.9	5398	10756	38442.78	3574	21271.43	108426.63	5097	37.05	55.96	18.73	19.84
2017-18	4056.77	26870.16	6624	12705.26	49837.98	3923	22293.56	119751	5372	31.93	53.92	18.2	22.44
CAGR (%)	12.6	19.45	6.08	8.91	17.18	7.6	9.26	18.5	8.46				

Note: Quantity (000' tons), Value (Rs. Cr) and per unit price (Rs./q); Prices are per unit

Source: APEDA, DGCIS Annual Export

Export of basmati rice, total rice and total agricultural exports from Haryana (2007-2017)

The export of basmati rice from Haryana in the year 2007-08 to 2017-18 is presented in Table 3. The compound annual growth rate for quantity of basmati rice exported from India increased at 23.90 percent. While the value realization increased at 26.74 percent, means the value realization growth during the period was more than growth in quantity exported. The growth rate for per unit price increased at 2.29 percent. The percentage share of export quantity of basmati rice in total rice export 94.95 percent in the year 2017-18 Similarly,

the percentage share of export quantity of basmati rice in total agricultural export 49.13 percent in the year 2017-18 These results were in confirmatory with Adhikari *et al.* (2016)^[1].

The export of total rice from Haryana for the period 2007-08 to 2017-18 is presented in Table 3. The compound annual growth rate for quantity of total rice exported from India increased at 22.78 percent. While the value realization increased at 26.53 percent. The growth rate for per unit price increased at 3.05 percent. These results were in confirmatory with Adhikari *et al.* (2016)^[1].

Table 2: Description of basmati, total rice and total agricultural exports from Haryana in relation to India (2007-2017)

Year	Basmati			Total rice			Total Agri. Exports			Basmati/ Total rice	Basmati/ Total rice	Basmati/ Total Agri. Exports	Basmati/ Total Agri. Exports
	Qty.	Value	Price	Qty.	Value	Price	Qty.	Value	Price	Qty.	Value	Qty.	Value
2007-08	64.9	306.1	4716	6469.28	11754.37	1817	15422.91	29563.99	1917	1.00	2.60	0.42	1.04
2008-09	148.13	939.54	6343	2488.29	11164.4	4487	13149.7	35447.14	2696	5.95	8.42	1.13	2.65
2009-10	139.37	790.43	5671	2156.32	11254.42	5219	11256.48	35317.39	3138	6.46	7.02	1.24	2.24
2010-11	205.45	967.77	4710	2471.35	11585.92	4688	11567.04	42433.96	3669	8.31	8.35	1.78	2.28
2011-12	268.16	1295.56	4831	7175.89	24108.72	3360	19810.13	83484.18	4214	3.74	5.37	1.35	1.55
2012-13	349.3	1939.34	5552	10147.89	33858.29	3336	30172.92	118250.7	3919	3.44	5.72	1.16	1.64
2013-14	475.01	3622.96	7627	10890.45	47049.91	4320	30001.77	136922.3	4564	4.36	7.70	1.58	2.65
2014-15	471.94	3476.65	7367	11976.31	48026.43	4010	27134.29	131342.9	4840	3.94	7.24	1.74	2.65
2015-16	577.46	3222.46	5580	10510.39	38201.98	3635	20469.72	107431.7	5248	5.49	8.44	2.82	2.99
2016-17	627.52	3428.94	5464	10756	38442.78	3574	21271.43	108426.6	5097	5.83	8.92	2.95	3.16
2017-18	622.21	4193.25	6739	12705.26	49837.98	3923	22293.56	119751	5372	4.90	8.41	2.79	3.50
CAGR (%)	23.9	26.74	2.29	17.3	19.23	1.64	7.23	17.31	9.39				

Note: Quantity (000' tons), Value (Rs. Cr) and per unit price (Rs./q); Prices are per unit

Source: APEDA, DGCIS Annual report

The export of total agricultural from Haryana for the period 2007-08 to 2017-18 is presented in Table 3. The compound annual growth rate for quantity of total agricultural exported from India increased at 21.89 percent. While the value realization increased at 28.54 percent. The growth rate for per unit price increased at 5.45 percent. These results were in confirmatory with Adhikari *et al.* (2016)^[1].

Basmati rice exports from India to the world

Exported value of basmati rice from India to Saudi Arabia was Rs. 1376.88 Cr during 1998-99 and which increasing to Rs. 5343.17 Cr during 2017-18 given in Table 4. The increase in export value may be attributed to increase in unit price due to higher demand of basmati rice in the world markets. The maximum export value was observed Rs.7260.78 Cr in the year 2014-15. Saudi Arabia is the largest basmati rice

importer in the year 1998-99. The percentage share of total basmati rice export value from India to different countries in 1998-99, Saudi Arabia is the largest importer constitute 72.88 percent, followed by United Kingdom (8.95%), Kuwait (4.76%), United Arab Emirates (3.92%) and United States of America (1.07%) respectively (Table 4).

Iran emerged as the largest importer of basmati rice in the year 2012-13 *i.e.* Rs. 6463.49 Cr. Iran as the largest importer of basmati rice in the year 2017-18 *i.e.* Rs. 5829.78 Cr. The maximum export value was observed during the year 2013-14 *i.e.* Rs. 10975.70 Cr. The percentage share of total basmati rice export value from India to different countries in 2017-18, Iran is the largest importer constitute 21.67 percent, followed by Saudi Arabia (19.89%), United Arab Emirates (10.50%), Iran (10.44%), Kuwait (4.27%), Yemen Republic (3.86%), United Kingdom (3.83%), and United States of America (3.57%) given in Table 4.

Export value of basmati rice from India to United Arab Emirates was Rs. 73.55 Cr in the year 1998-99 and it increased to Rs. 2820.53 Cr in the year 2017-18. The

maximum export quantity was observed of Rs. 3432.79 Cr in the year 2011-12 Export value of basmati rice from India to Iraq was Rs. 0.64 Cr in the year 2006-07 and continuously increased to Rs. 1599.71 Cr in the year 2013-14 and during the year 2017-18 was Rs. 2805.82 Cr. Export value of basmati rice from India to United Kingdom was Rs. 167.90 Cr in the year 1998-99 and it increased to Rs. 1028.35 Cr during the year 2017-18 Export value of basmati rice from India to United States of America was Rs. 20.08 Cr in the year 1998-99 and it increased to Rs. 960.13 Cr in the year 2017-18. The maximum export value was observed during the year 2017-18. Export value of basmati rice from India to Kuwait was Rs. 89.34 Cr in the year 1998-99 and it increased to Rs. 1146.27 Cr in the year 2017-18. The maximum export value was observed Rs. 1533.22 Cr in the year 2014-15. Export value of basmati rice from India to Yemen Republic was Rs. 93.21 Cr in the year 2006-07 and continuously increased to Rs. 1201.00 Cr in the year 2014-15. In the year 2017-18 was Rs. 1038.43 Cr. The maximum export value was observed during the year 2014-15.

Table 3: Description of basmati, total rice and total agricultural exports from Haryana (2007-2017)

Year	Basmati			Total rice			Total Agri. Exports			Basmati/ Total rice	Basmati/ Total rice	Basmati/ Total Agri. Exports	Basmati/ Total Agri. Exports
	Qty.	Value	Price	Qty.	Value	Price	Qty.	Value	Price	Qty.	Value	Qty.	Value
2007-08	64.9	306.1	4716	83.48	329.92	3952	112	489.98	4375	77.74	92.78	57.95	62.47
2008-09	148.1	939.54	6343	150.1	941.74	6274	195.8	1384	7068	98.69	99.77	75.65	67.89
2009-10	139.4	790.43	5671	175.6	900.88	5131	290.7	2098.3	7218	79.38	87.74	47.95	37.67
2010-11	205.5	967.77	4710	205.7	969.01	4711	310	2064.3	6660	99.87	99.87	66.28	46.88
2011-12	268.2	1295.6	4831	324.2	1451	4476	494.5	5165.6	10446	82.72	89.29	54.23	25.08
2012-13	349.3	1939.3	5552	430.7	2168.9	5036	629.9	8446.7	13410	81.11	89.42	55.46	22.96
2013-14	475	3623	7627	561.6	3913.4	6968	778.4	8290.7	10651	84.58	92.58	61.03	43.7
2014-15	471.9	3476.7	7367	561.6	3773.6	6719	826.6	8387.8	10148	84.03	92.13	57.1	41.45
2015-16	577.5	3222.5	5580	617.7	3364.6	5447	783.3	6340.4	8094	93.49	95.77	73.72	50.82
2016-17	627.5	3428.9	5464	662.6	3572.8	5392	877.5	7447.2	8487	94.7	95.97	71.52	46.04
2017-18	622.2	4193.3	6739	655.3	4338.6	6621	894.5	8535.5	9542	94.95	96.65	69.56	49.13
CAGR (%)	23.9	26.74	2.29	22.78	26.53	3.05	21.89	28.54	5.45				

Note: Quantity (000' tons), Value (Rs. Cr) and per unit price (Rs/q); Prices are per unit

Source: APEDA, DGCIS Annual Export

The details on the CAGR export value of basmati rice from India to different countries during 1998-99 to 2017-18 given in Table 4. Iraq, Iran, Yemen Republic, United Arab Emirates, United States of America, Kuwait, Saudi Arabia

and United Kingdom increased at CAGR 112.05 percent, 94.56 percent, 30.54 percent, 27.66 percent, 18.65 percent, 16.56 percent, 11.34 and 10.29 percent respectively.

Table 4: Value of basmati exports from India to the World (1998-2017)

Year/ Country	Saudi Arabia	Iran	UAE	Iraq	UK	USA	Kuwait	Yemen	Others	Total
1998-99	1367.88	-	73.55	-	167.9	20.08	89.34	4.75	153.4	1876.9
	(72.88)	-	(3.92)	-	(8.95)	(1.07)	(4.76)	(0.25)	(8.17)	(100)
2002-03	1052.21	0.11	84.32	1.51	205.15	104.22	172.79	40.52	401.3	2062.13
	(51.03)	(0.01)	(4.09)	(0.07)	(9.95)	(5.05)	(8.38)	(1.96)	(19.46)	(100)
2006-07	1240.95	46.17	305.21	0.64	196.22	114.67	306.87	93.21	488.86	2792.8
	(44.43)	(1.65)	(10.93)	(0.02)	(7.03)	(4.11)	(10.99)	(3.34)	(17.5)	(100)
2007-08	2038.34	20.33	689.83	16.8	291.08	142.1	401.68	137.15	607.27	4344.58
	(46.92)	(0.47)	(15.88)	(0.39)	(6.7)	(3.27)	(9.26)	(3.16)	(13.98)	(100)
2008-09	3102.8	980.76	2786.2	34.47	431.03	272.59	733.93	175.15	960.1	9477.03
	(37.74)	(10.35)	(29.4)	(0.36)	(4.55)	(2.88)	(7.74)	(1.85)	(10.13)	(100)
2009-10	3295.47	2053.08	3094.65	35.9	195.89	153.49	1030.14	295.48	735.03	10889.13
	(30.26)	(18.85)	(28.42)	(0.03)	(1.8)	(1.41)	(9.46)	(2.71)	(6.75)	(100)
2010-11	3132.94	2033.96	2839.75	165.31	351.76	250.32	1091.64	296.78	1192.17	11354.63
	(27.59)	(17.91)	(25.01)	(1.46)	(3.1)	(2.2)	(9.6)	(2.61)	(10.5)	(100)
2011-12	3380.88	2843.21	3432.79	672.86	629.45	503.88	1362.92	402.91	2220.69	15449.59
	(21.88)	(18.4)	(22.22)	(4.36)	(4.07)	(3.26)	(8.82)	(2.61)	(14.37)	(100)
2012-13	3659.08	6463.49	1311.19	1076.67	849.98	561.69	1059.67	878.19	3549.43	19409.39
	(18.85)	(33.3)	(6.76)	(5.55)	(4.38)	(2.9)	(5.46)	(4.52)	(18.29)	(100)
2013-14	6717.06	10975.7	1189.22	1599.71	785.84	870.45	1513.05	1107.79	4541.13	29299.95

	(22.93)	(37.46)	(4.06)	(5.46)	(2.69)	(2.97)	(5.16)	(3.78)	(15.5)	(100)
2014-15	7260.78	6758.97	1929.96	1587.38	899.81	805.4	1533.22	1201	5621.67	27597.89
	(26.31)	(24.49)	(6.99)	(5.75)	(3.26)	(2.92)	(5.56)	(4.35)	(20.37)	(100)
2015-16	5493.85	3723.93	3110.7	2231.15	932.83	861.67	1376.4	731.28	4256.78	22718.59
	(24.18)	(16.39)	(13.69)	(9.82)	(4.11)	(3.79)	(6.06)	(3.22)	(18.74)	(100)
2016-17	4494.53	3778.41	3141.71	2263.96	680.81	752.85	1002.42	692.44	4705.77	21512.9
	(20.89)	(17.56)	(14.6)	(10.52)	(3.16)	(3.5)	(4.66)	(3.22)	(21.87)	(100)
2017-18	5343.17	5829.78	2820.53	2805.82	1028.35	960.13	1146.27	1038.43	5897.68	26870.16
	(19.89)	(21.67)	(10.5)	(10.44)	(3.83)	(3.57)	(4.27)	(3.86)	(21.95)	(100)
CAGR (%)	11.34	94.56	27.66	112.05	10.29	18.65	16.56	30.54	22.42	19.45

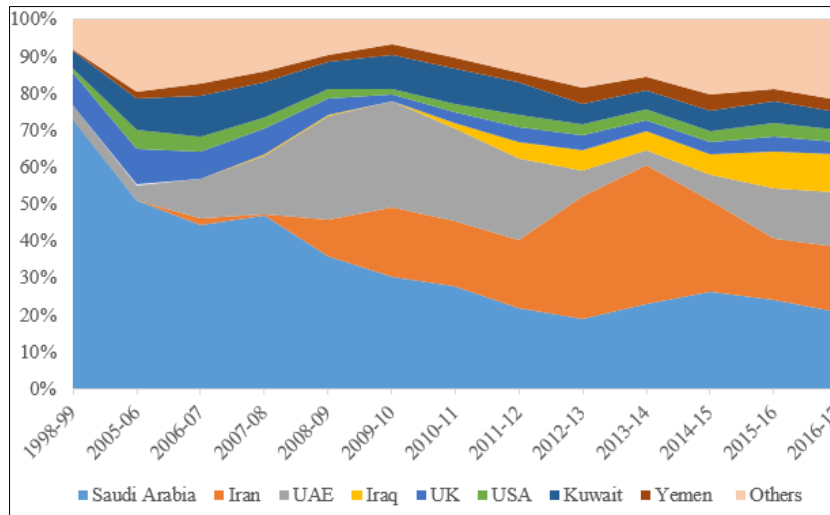


Fig 1: Proportional distribution of quantity of Basmati exports from India to the World (1998-2017)

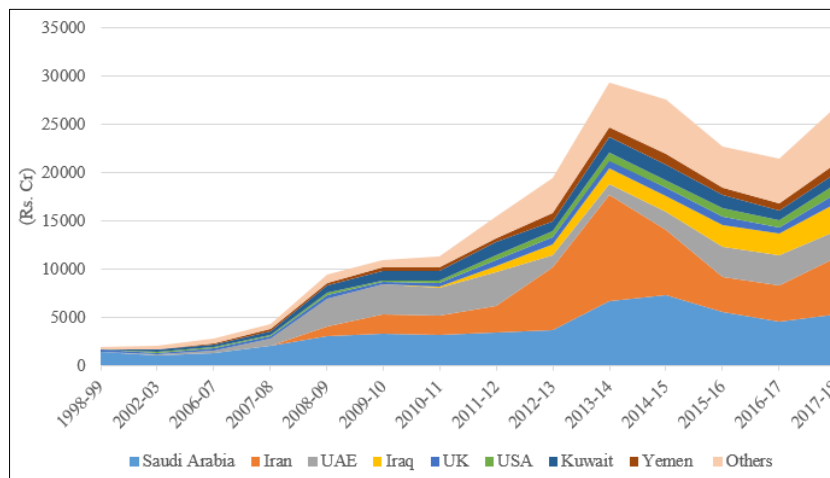


Fig 2: Value of basmati exports from India to the World (1998-2017)

The traditional basmati rice major importing countries from India are Saudi Arabia, Iran, United Arab Emirates, Iraq, United Kingdom, United States of America, Kuwait and Yemen Republic etc. presented in Table 5. Since, basmati rice is an important agricultural commodity of India exported to more than 50 countries in the world. Saudi Arabia is the largest basmati rice importer during the year 1998-99. Saudi Arabia imported 442.99 thousand tons of basmati rice. Exports to Saudi Arabia gradually increased 640.40 thousand tons in 2009-10, and then it increased to 792.48 thousand tons during the year 2017-18. It can be seen that basmati rice exports for the period 1998-99 to 2017-18. The maximum export quantity was observed 966.93 thousand tons during the year 2014-15. The percentage share of total basmati rice export quantity from India to different countries in 1998-99, Saudi Arabia is the largest importer constitute 74.11 percent, followed by United Kingdom (7.66%), Kuwait (5.25%) and

United Arab Emirates (3.34%) respectively (Table 5). Iran emerged as the largest importer of Indian basmati rice during the year 2012-13 *i.e* 1082.22 thousand tons. Iran as the largest importer of basmati rice during the year 2017-18 *i.e*. 877.42 thousand tons. The maximum export quantity was observed 1440.65 thousand tons during the year 2013-14. The percentage share of total basmati rice export quantity from India to different countries in 2017-18, Iran is the largest importer constitute 21.62 percent, followed by Saudi Arabia (19.53%), Iran (10.69%), United Arab Emirates (10.66%), United Kingdom (4.43%), Yemen Republic (4.13%), Kuwait (4.11%) and United States of America (3.13%) given in Table 5. Export quantity of basmati rice from India to United Arab Emirates was 19.98 thousand tons during the year 1998-99 and it increased to 429.33 thousand tons during the year 2017-18. The maximum export quantity was 728.82 thousand tons

during the year 2011-12. Export quantity of basmati rice from India to Iraq was 0.20 thousand tons during the year 2006-07 and continuously increased to 453.74 thousand tons during the year 2016-17 and then decreased to 429.97 thousand tons during the year 2017-18. Export quantity of basmati rice from India to United Kingdom was 45.78 thousand tons during the year 1998-99 and increased to 180.51 thousand tons during the year 2017-18. The maximum export quantity was 192.43 thousand tons during the year 2012-13. Export quantity of basmati rice from India to United States of America was 4.98 thousand tons during the year 1998-99 and increased to 126.79 thousand tons during the year 2017-18. The maximum export quantity was observed during the year 2017-18. Export quantity of basmati rice from India to Kuwait was 31.36 thousand tons during the year 1998-99 and increased to 166.87 thousand tons during the year 2017-18. The maximum

export quantity was 199.87 thousand tons during the year 2011-12. Export quantity of basmati rice from India to Yemen Republic was 31.47 thousand tons during the year 2008-09 and continuously increased to 172.35 thousand tons during the year 2012-13. In the year 2017-18 quantity was 167.69 thousand tons. The maximum export quantity was 174.37 thousand tons during the year 2014-15.

The details on the CAGR, export quantity of basmati rice from India to different countries during 1998-99 to 2017-18 also given in Table 4.14. Iraq, Iran, United Arab Emirates, Yemen Republic, United States of America, Kuwait, United Kingdom and Saudi Arabia increased at CAGR 105.00 percent, 80.33 percent, 21.66 percent, 21.61 percent, 12.91 percent, 8.49 percent, 5.75 percent and 4.50 percent respectively.

Table 5: Quantum of basmati exports from India to the World (1998-2017)

Year/ Country	Saudi Arabia	Iran	UAE	Iraq	UK	USA	Kuwait	Yemen	Others	Total
1998-99	442.99 (74.11)	-	19.98 (3.34)	-	45.78 (7.66)	4.98 (0.83)	31.36 (5.25)	2.14 (0.35)	50.53 (8.45)	597.76 (100)
2002-03	366.81 (51.65)	0.04 (0.01)	27.44 (3.86)	0.29 (0.04)	72.54 (10.21)	30.72 (4.33)	63.12 (8.89)	17.91 (2.52)	131.29 (18.49)	710.16 (100)
2006-07	499.58 (47.77)	15.11 (1.45)	104.99 (10.04)	0.20 (0.02)	71.41 (6.83)	34.50 (3.3)	109.07 (10.43)	40.69 (3.89)	170.15 (16.27)	1045.71 (100)
2007-08	543.53 (45.93)	4.43 (0.37)	193.10 (16.32)	5.19 (0.44)	71.38 (6.03)	35.74 (3.02)	113.07 (9.56)	49.96 (4.22)	166.97 (14.11)	1183.36 (100)
2008-09	524.40 (33.69)	170.95 (10.98)	456.14 (29.31)	6.07 (0.39)	62.56 (4.02)	39.66 (2.55)	111.55 (7.17)	31.47 (2.02)	153.64 (9.87)	1556.41 (100)
2009-10	640.40 (31.75)	364.60 (18.08)	616.12 (30.55)	6.96 (0.35)	36.97 (1.83)	25.99 (1.29)	139.47 (6.92)	61.81 (3.06)	124.44 (6.17)	2016.78 (100)
2010-11	622.71 (26.27)	450.66 (19.01)	634.77 (26.78)	36.91 (1.56)	77.38 (3.26)	47.49 (2)	197.59 (8.33)	70.04 (2.95)	233.12 (9.83)	2370.66 (100)
2011-12	721.25 (22.69)	614.99 (19.35)	728.82 (22.93)	151.96 (4.78)	141.67 (4.46)	91.82 (2.89)	199.87 (6.29)	92.11 (2.9)	435.69 (13.71)	3178.17 (100)
2012-13	681.24 (19.69)	1082.22 (31.28)	234.68 (6.78)	204.26 (5.9)	192.43 (5.56)	91.55 (2.65)	163.32 (4.72)	172.35 (4.98)	637.86 (18.44)	3459.90 (100)
2013-14	826.29 (21.99)	1440.65 (38.34)	149.04 (3.97)	219.63 (5.85)	118.89 (3.16)	103.38 (2.75)	175.44 (4.67)	146.84 (3.91)	577.10 (15.36)	3757.27 (100)
2014-15	966.93 (26.12)	935.57 (25.27)	278.60 (7.53)	235.45 (6.36)	136.35 (3.68)	89.22 (2.41)	166.47 (4.5)	174.37 (4.71)	719.31 (19.43)	3702.26 (100)
2015-16	948.85 (23.45)	695.31 (17.19)	612.15 (15.13)	419.28 (10.36)	187.70 (4.64)	120.69 (2.98)	180.73 (4.47)	142.16 (3.51)	738.95 (18.26)	4045.82 (100)
2016-17	809.34 (20.31)	716.58 (17.98)	614.65 (15.42)	453.74 (11.39)	150.54 (3.78)	108.99 (2.73)	162.67 (4.08)	130.65 (3.28)	838.02 (21.03)	3985.20 (100)
2017-18	792.48 (19.53)	877.42 (21.62)	429.33 (10.66)	429.97 (10.69)	180.51 (4.43)	126.79 (3.13)	166.87 (4.11)	167.69 (4.13)	885.71 (21.83)	4056.77 (100)
CAGR (%)	4.50	80.33	21.66	105.00	5.75	12.91	8.49	21.61	15.51	12.60

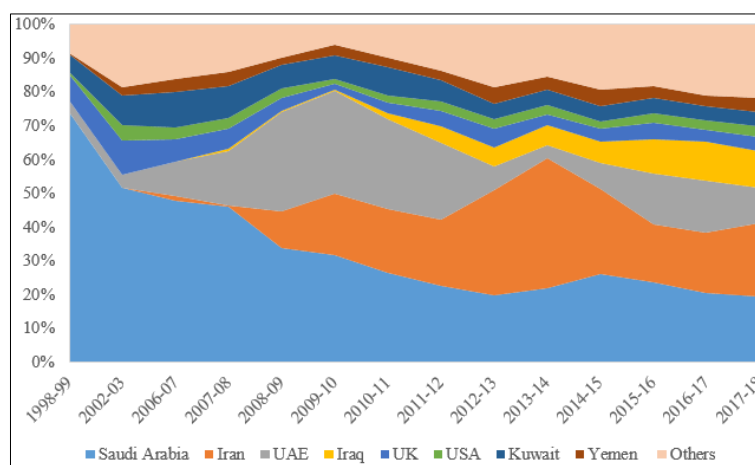


Fig 3: Proportional distribution of quantity of Basmati exports from India to the World (1998-2017)

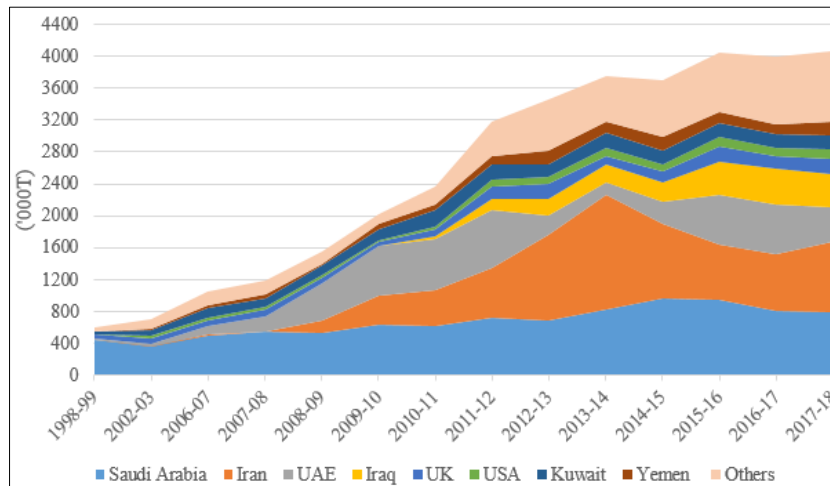


Fig 4: Quantum of basmati exports from India to the World (1998-2017)

Growth in export of basmati rice from India

The details on the CAGR, export quantity of basmati rice from India to different countries in the year 1998-99 to 2017-18 given in Fig 5. Iraq, Iran, United Arab Emirates, Yemen Republic, United States of America, Kuwait, Saudi Arabia and United Kingdom increased at CAGR 105.00 percent, 80.33 percent, 27.66 percent, 21.66 percent, 21.61 percent, 12.91 percent, 8.49 percent, 5.75 percent and 4.50 percent respectively.

The details on the CAGR export value of basmati rice from India to different countries during 1998-99 to 2017-18 given in Fig 5. Iraq, Iran, Yemen Republic, United Arab Emirates, United States of America, Kuwait, Saudi Arabia and United Kingdom increased at CAGR 112.05 percent, 94.56 percent, 30.54 percent, 22.42 percent, 19.45 percent, 18.65 percent, 16.56 percent, 11.34 and 10.29 percent respectively.

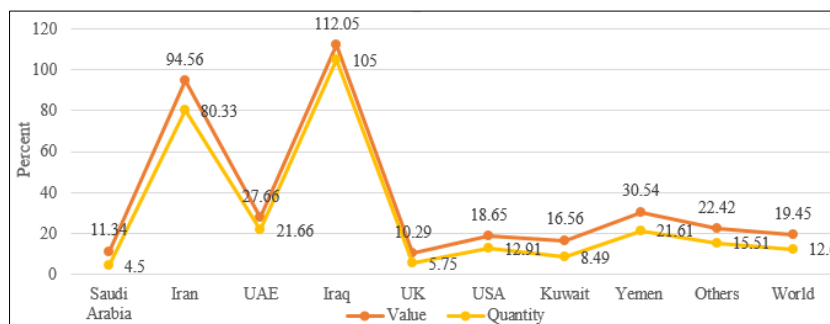


Fig 5: CAGR of Basmati exports from India to the World (1998-2017)

Conclusion

The quantity of basmati rice exported from India went up from 597.76 thousand tons in 1998-99. To 4056.77 thousand tons during 2017-18 (CAGR 12.60%). Similarly, the value of basmati rice exported rose from Rs. 1876.90 Crores in 1998-99 to Rs. 26870.16 Crores during the year 2017-18 (CAGR 19.45%). The growth in export value realization for the period 1998-99 to 2017-18 was more than the growth in quantity exports. Similarly, the quantity of basmati rice exported from Haryana increasing at CAGR 23.90 percent and the value of basmati rice exported from increased at a CAGR 26.74 percent. Moreover, the growth in export value realization for the period 2007-08 to 2017-18 was more than the growth in quantity exports. Iran was seen as the largest importer of basmati rice during the year 2017-18 *i.e.* quantity in 877.42 thousand tons and value in Rs. 5829.78 Crores. The growth of export quantity of basmati rice from India to different countries during the study period was highest in Iraq (105.00%), Iran (80.33%), United Arab Emirates (21.66%), Yemen Republic (21.61%) and United States of America. Whereas the growth in value terms was highest in Iraq (112.05%), Iran (94.56%), Yemen Republic (30.54%) and United Arab Emirates (27.66%), respectively.

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