"Performance and Competitiveness of Onion Export from India"

Darekar Ashwini S.[*], **Pokharkar V. G.**[**], **Datarkar Snehal B.**[***] **and S. G. Patil**[****]

ABSTRACT: *The performance and competitiveness of export of onion from India have been analyzed to find i) instability in onion export from India, ii) impact of trade liberalization on export of onion and iii) export performance of onion in India. Data was collected from various published sources. Different techniques used for analysis as Coefficient of variation, growth function, nominal protection coefficient and export performance ratio. Coefficient of variation and annual compound growth rate for two periods, before (1987-1995) and after (1996-2013) the commencement of WTO have been estimate the instability in onion export from India and impact of trade liberalization on export of onion. The export performance ratio (EPR) and nominal protection coefficient (NPC) has been estimated to examine the export competitiveness of India in onion.*

The study has revealed that the existence of high instability in export of onion. The values of CV in export of onion have come down during the post –WTO than Pre-WTO period. However, stability in export from India is more in case of Singapore, Sri Lanka, U.A.E., Saudi Arabia and Mauritius. Also, more instability in export was observed for Bangladesh, Kuwait, Nepal, Qatar, Oman and U.K. The analysis of export trends of onion export from 1987-95 to 1996-2013 has shown that the quantity of onion has grown annually at a compound growth rate of 8.38 per cent, whereas value of onion of onion exported has grown at a much higher rate 15.84 per cent. Onion has shown competitive disadvantage during the pre –WTO period, as values of NPC and EPR are more than one. But, during post – WTO period, the competitiveness has increased as in evident from the NPC and EPR values which turned out to be less than one. The study has suggested to exploit the competitiveness of Maharashtra in onion.

Key words: Export performance, Competitiveness, NPC, EPR, etc…

INTRODUCTION

Onion is an important fresh vegetable consumed all over the world. India ranks first in acreage in the world covering about 480 thousand ha (21 per cent of the World area) and second in production after China, with over 15 million tons. According to NSSO data, onion consumption has increased in both rural and urban areas by at least 100 and 150 gram respectively per month from 2002-03 to 2012-13 [2]. Further, this demand is likely to rise with increase of domestic population, per capita income, increasing taste consciousness and health awareness of the consumer. Also, there is steady rise in export since the period of liberalization. Export competitiveness of onion is also found to be very high.

India is presently exporting onions to mainly Gulf countries, Far East countries, Bangladesh, and Sri Lanka where there is not much scope to increase t he quantity as some countries have also started their own production. The scope, however, exists for diversifying the market to European countries and Japan. These countries do not prefer strong and pungent onions. In these countries, yellow onions having mild pungency, bigger bulb size with thick fleshy layers are preferred. The possibility of growing yellow onions in Maharashtra, Orissa, Madhya Pradesh and other parts was explored by NHRDF by taking trials on farmers' fields where bulbs of Arad (H) could be successfully produced during late-kharif season. The evaluation of various exotic varieties has been done in the past and is being taken up by NHRDF now also where good bulb development with required size and quality could be produced during late-kharif season and thus export from February to May by sending bulbs in electrically-ventilated containers could be explored. For this, however, contract

[*] Ph.D. Scholars, Department of Agricultural Economics, MPKV, Rahuri (MH).
[**] Assistant Professor, Department of Agricultural Economics, MPKV, Rahuri (MH).
[***] Ph.D. Scholars, Department of Agricultural Economics, MPKV, Rahuri (MH).
[****] Assistant Professor, Department of Agricultural Statistics, TNAU.

production is preferred as there may not be much local demand for these onions if not purchased by exporters for export.

The onion production in India largely depends on the acreages under onion and policies of Government with regards to export and import of onion. These two factors affect the onion production and the country like India in some years there was surplus production and during next year the production of onion was deficit than requirement. Thus, the onion production in India is widely fluctuating. India export onion to more than 150 countries around the globe. India has natural comparative advantage in its exports on account of lower import needs of inputs, low level of cost and existence of diverse agro climatic conditions [5]. India had a glorious export tradition, especially in agricultural and allied sectors. The expansion of export sector helped India to integrate into the world economy as a supplier of cheap agricultural commodities and raw materials. India being a net exporter of agricultural commodities, the foreign exchange earnings by way of exports will lead to the import of capital goods which will pave way for the increased investment resulting in technological advances, eventually leading to improved productivity and efficiency. Onion *(Allium cepa L)* is extremely important vegetable crop not only for internal consumption but also as highest foreign exchange earner among the fruits and vegetables. The study which focuses on growth performance, export performance and export variability of onion from India may help in formulating alternative management strategies and policies to boost onion export in India.

METHODOLOGY

a. Compound growth rates of area, production and productivity

Compound growth rates of area, production and productivity of onion was estimated by using non-linear equation.

$$Y = ab^t$$

Where, Y = Export or Price of onion,

t = time period,

b = regression coefficient and

a = intercept

$$CGR = (\text{Antilog } b - 1) \times 100$$

b. The Karl Pearsons correlation coefficient

The Karl Pearsons correlation coefficient was computed to estimate the degree of relationship between export and prices.

$$r = \frac{\sum xy - \frac{\sum x \sum y}{n}}{\sqrt{\left(\sum x^2 - \frac{(\sum x)^2}{n}\right)\left(\sum y^2 - \frac{(\sum y)^2}{n}\right)}}$$

Where, r = Correlation coefficient,

x = Prices of onion,

y = Export of onion and

n = Number of observations or time in number of years

c. Nominal Protection Coefficient

The Nominal Protection Coefficient was computed to determine extend of competitive advantage enjoyed by the commodity in the context of free trade. The coefficient shed light on whether a country has comparative advantage in the export of that commodity in the free trade scenario or not. NPC is defined as the ratio of the domestic price to the world reference price of the commodity under consideration. Symbolically,

$$NPC = Pd / Pb$$

Where, Pd = Domestic wholesale price of the commodity and

Pb = Word reference price of the commodity

If NPC > 1, the commodity is protected, compared to the situation that would prevail under free trade and if NPC < 1, the commodity is not protected.

d. Export Performance Ratio

The Export Performance Ratio (EPR) was estimated to examine the comparative advantage of India in Onion export. The EPR of Onion was estimated by equation;

$$EPR = S_{it} / S_{wt}$$

Where; S_{it} = Share of Onion in India's Total Export and

S_{wt} = Share of Onion in World Total Export,

Since EPR is based on observed pattern of trade flows, it is also called Revealed Comparative Advantage (RCA). If EPR/RCA is greater than unity, the country has the comparative advantage in export of concerned commodity and vice versa.

RESULTS AND DISCUSSION

Instability in onion export to indifferent countries from India

India is the major onion exporting country. But the quantity of onion exported during various years and

to the various destinations was not stable. Hence, an attempt has been made to analyze the variability in the export of onion and accordingly the co-efficient of variation in the export of India onion to various countries during pre-WTO, post-WTO and entire period were worked out and presented in Table 1.2. The values of coefficient of variation in export of onion have come down during the post–WTO than Pre-WTO period.

During pre-WTO period, the maximum variability in the export of Indian onion was observed in Kuwait (108.70%), Mauritius (100.30%), Nepal (148.80%), Qatar (127.40%), Oman (138.30 %) and U.K. (122.10%). Among the major onion importing countries from India, the minimum variability in the export of onion from India was noticed in Malaysia, Singapore, Sri Lanka, Bangladesh, U.A.E., Saudi Arabia, Bahrain, Reunion and Maldives with a coefficient of variation of 54.06, 34.66, 35.63, 78.45, 54.82, 52.26, 73.57, 98.25, and 76.78 per cent, respectively. Thus, the major and most promising countries importing the onion regularly from India are Malaysia, Singapore, Sri Lanka, Bangladesh, U.A.E., Saudi Arabia, Bahrain, Reunion and Maldives with the variability in the range of 34 to 98 per cent [1].

The minimum variability was observed in Malaysia, Singapore, Sri Lanka, Bangladesh, U.A.E., Saudi Arabia, Kuwait, Bahrain, Reunion, Maldives and Mauritius during post-WTO period, out of these except Mauritius and Kuwait all are the major Indian onion importing countries. Maximum variability in export of Indian onion during this period was observed in U.K. (129.20%), Oman (116.80%), Nepal (110.51%) and Qatar (109.67%). These countries are minor onion importer from India.

On overall basis highest export of onion was recorded to Malaysia, Singapore, Sri Lanka, Bangladesh, U.A.E., Saudi Arabia, Bahrain, Reunion, Maldives and Mauritius with 72.80, 37.73, 55.04, 75.71, 49.59, 52.57, 87.79, 83.21, 82.96 and 54.17 per cent respectively and the variability of Kuwait, Qatar, Oman and U.K. was found less. The stability in the onion export i.e. regular exporter is a need of the day in this era and for this purpose suitable onion trade policy needs to be devised by the concern [4].

Growth in Export of onion in different countries

India is leading onion exporting country and ranked first in onion export in 2012-13. India is exporting onion to the more than 100 countries. Table 1.2 depicts the annual compound growth rates in quantity and value of exported onion from India. The performance of Indian onion export during overall period with respect of growth in quantity exhibited as positive growth rate of 8.38 per cent per annum which was statistically significant. While the export price recorded annual growth rate at 15.84 per cent per annum. During pre-WTO period, the annual growth rate of exported quantity and value of onion were 6.46 and 5.69 per cent, respectively. In post-WTO period, the growth rate of exported quantity was positive and significant i.e. 10.61 per cent. The growth rate was 8.49 per cent per annum value of onion export. During post-WTO period, the quantity exported and value of exported onion increased with high rate than that of in pre-WTO period [6].

Trade competitiveness of onion under exportable hypothesis

The calculations of NPC and EPR have shown that onion had a competitive disadvantage in pre-WTO period because the values of NPC and EPR have been found more than one. More than unity value of NPC and EPR in pre-WTO period revealed that the domestic price of onion was more than the import price, which signified that the onion received protection from the country. During post-WTO period, the competitiveness of onion improved significantly as supported by estimates of NPC and EPR, which turn out to be less than one [3].

CONCLUSIONS

The study has revealed that the existence of high instability in export of onion. The values of CV in export of onion have come down during the post-WTO than Pre-WTO period. However, stability in export from India is more in case of Singapore, Sri Lanka, U.A.E., Saudi Arabia and Mauritius. Also, more instability in export was observed for Bangladesh, Kuwait, Nepal, Qatar, Oman and U.K. The analysis of export trends of onion export from 1987-95 to 1996-2013 has shown that the quantity of onion has grown annually at a compound growth rate of 8.38 per cent, whereas value of onion of onion exported has grown at a much higher rate 15.84 per cent. Onion has shown competitive disadvantage during the pre–WTO period, as values of NPC and EPR are more than one. But, during post–WTO period, the competitiveness has increased as in evident from the NPC and EPR values which turned out to be less than one. The study has suggested to exploit the competitiveness of Maharashtra in onion.

Table 1.1
Coefficient of Variation in export of onion indifferent countries

Sr. No.	Country	Particulars	1987-1995 (Pre –WTO)	1996-2013 (Post – WTO)	1987-2013 OVERALL
1	Malaysia	Qt (MT)	54.06	47.64	72.08
		Value (Rs. Lacs)	77.77	58.43	104.7
2	Singapore	Qt (MT)	34.66	30.37	37.73
		Value (Rs. Lacs)	49.96	40.96	48.42
3	Sri Lanka	Qt (MT)	35.63	34.77	55.04
		Value (Rs. Lacs)	62.8	44.46	86.39
4	Bangladesh	Qt (MT)	78.45	72.83	75.71
		Value (Rs. Lacs)	102.6	81.27	133.2
5	U.AE.	Qt (MT)	54.82	48.04	49.59
		Value (Rs. Lacs)	71.31	66.07	84.82
6	Saudi Arabia	Qt (MT)	52.26	51.56	52.17
		Value (Rs. Lacs)	78.64	68.80	76.53
7	Kuwait	Qt (MT)	108.7	90.78	114.4
		Value (Rs. Lacs)	129.4	56.57	156.7
8	Bahrain	Qt (MT)	73.57	69.02	87.79
		Value (Rs. Lacs)	80.42	59.85	106.9
9	Reunion	Qt (MT)	98.25	84.35	83.21
		Value (Rs. Lacs)	103.1	86.49	100.1
10	Maldives	Qt (MT)	76.78	64.96	82.96
		Value (Rs. Lacs)	103.21	50.68	124.2
11	Mauritius	Qt (MT)	100.30	85.27	54.17
		Value (Rs. Lacs)	118.9	62.49	92.11
12	Nepal	Qt (MT)	148.8	110.51	118.4
		Value (Rs. Lacs)	196.8	102.1	137.0
13	Qatar	Qt (MT)	127.4	109.67	156.1
		Value (Rs. Lacs)	140.7	117.0	173.8
14	Oman	Qt (MT)	138.3	116.8	174.6
		Value (Rs. Lacs)	146.9	126.4	146.5
15	U.K.	Qt (MT)	122.1	109.2	130.4
		Value (Rs. Lacs)	123.4	122.8	127.3

Table 1.2
Growth in Export of onion in different countries

Sr. No.	Country	Particulars	1987-1995 (Pre –WTO)	1996-2013 (Post – WTO)	1987-2013 OVERALL
1	Malaysia	Qt (MT)	13.41***	11.1***	10.00***
		Value (Rs. Lacs)	25.29***	16.1***	16.41***
2	Singapore	Qt (MT)	6.22***	0.11***	2.45***
		Value (Rs. Lacs)	17.43***	2.37***	2.04***
3	Sri Lanka	Qt (MT)	9.16***	6.87***	8.10***
		Value (Rs. Lacs)	21.72***	12.51***	13.15***
4	Bangladesh	Qt (MT)	5.14**	19.47***	24.66***
		Value (Rs. Lacs)	9.79***	26.63***	20.79***
5	U.AE.	Qt (MT)	28.5***	6.73***	5.46***
		Value (Rs. Lacs)	40.64***	12.23***	12.46***
6	Saudi Arabia	Qt (MT)	27.47***	6.41***	1.20***
		Value (Rs. Lacs)	46.26***	11.6***	8.63***
7	Kuwait	Qt (MT)	17.26***	19.03***	8.43***
		Value (Rs. Lacs)	4.9**	24.69***	15.47***
8	Bahrain	Qt (MT)	18.96***	15.97***	10.18***
		Value (Rs. Lacs)	33.12***	20.56***	17.25***
9	Reunion	Qt (MT)	23.96***	16.01***	20.85***
		Value (Rs. Lacs)	9.26**	16.54***	23.86***
10	Maldives	10	12.33***	17.76***	7.79***
		Value (Rs. Lacs)	24.22***	26.51***	14.35***
11	Mauritius	Qt (MT)	13.39**	3.86***	10.91***
		Value (Rs. Lacs)	92.8***	11.94***	20.74***
12	Nepal	Qt (MT)	3.82**	37.91***	25.65***
		Value (Rs. Lacs)	5.6**	73.95***	34.48***
13	Qatar	Qt (MT)	26.15***	33.06***	23.21***
		Value (Rs. Lacs)	33.59***	39.27***	24.14***
14	Oman	Qt (MT)	38.05***	52.49***	23.39***
		Value (Rs. Lacs)	16.86***	7.22***	39.08***
15	U.K.	Qt (MT)	15.14***	7.09***	33.9***
		Value (Rs. Lacs)	6.59***	3.71***	30.23***
	Total Export	Qt (MT)	6.46***	10.61***	8.38***
		Value (Rs. Lacs)	5.69***	8.49***	15.84***

Table 1.3
Trade competitiveness of onion under exportable hypothesis

Sr. No.	Year	EPR	NPC
1	1987-88	1.70	1.42
2	1988-89	1.80	1.29
3	1989-90	1.92	1.75
4	1990-91	1.68	1.29
5	1991-92	1.53	1.79
6	1992-93	1.66	1.13
7	1993-94	1.58	0.81
8	1994-95	1.76	1.04
9	1995-96	1.47	0.99
10	1996-97	0.87	1.50
11	1997-98	0.54	1.09
12	1998-99	1.02	1.40
13	1999-2000	0.81	0.82
14	2000-01	0.74	0.98
15	2001-02	0.45	0.74
16	2002-03	0.34	0.77
17	2003-04	0.62	0.78
18	2004-05	0.84	1.03
19	2005-06	0.78	1.01
20	2006-07	0.46	0.41
21	2007-08	1.06	0.75
22	2008-09	0.37	0.62
23	2009-10	0.32	1.13
24	2010-11	0.63	0.95
25	2011-12	0.55	0.86
26	2012-13	0.54	1.06
27	2013-14	1.77	1.41

REFERENCE

Aher R. S., (2008), Growth and Export competitiveness of Indian onion, Unpublished M.Sc. (Agril.) Thesis submitted to MKV, Parbhani.

FAO, (2013), Food and Agriculture Organization (*FAOSTAT@faostat.org*)

Gulati A., (2002), Indian agriculture in a globalizing world, *American Journal of Agricultural Economics*, **84**(3): 754-761.

Kulkarni B. S., Patil S. M. and Ramchandra V. A., (2012), Growth trends in area, production and export of onion from India –An economic analysis, *Internat. J. Com. & Bus. Manage*, **5**(2): 159-163.

Ravi P. C. and D. M. Govinda Reddy, (1998), Export competitiveness of selected agricultural commodities: Evidences from Karnataka, *The Bihar Journal of Agricultural Marketing*, **5**(1): 17-23.

Shende N. V. and B. D. Bhole, (1999), Export potential for India's food grains, *Economic Affairs*, **44**(1): 59-64.