

## Impact of Global Economic Crisis on Export Diversification of Agricultural Commodities: The Case of Indian Horticulture Market

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**Abstract:** The present external environment is conducive to export expansion and emerge India as an important exporter for agricultural commodities, but the post crisis slump in the world commodity market and declining commodity prices, forced India to diversify export of its agricultural commodities from traditional to non traditional exports to recover from the slowdown. The economic recession of September 2008 which first emerged as a financial crisis in one country has now spread his hand in almost all corners of the globe but the developing economy like India which is still in slow down stage and not yet in recession, is struggling tough to vanish this. The present paper examines some of the striking trends of India's exports of overall agricultural commodities in general and horticultural commodities in particular during the last decade. The Herfindahl index has been used to analyze the export diversification in agricultural commodities. As densification is one of the effective measures to mitigate the risk during crisis, this study provides practical insights for exporters and policy makers for designing effective framework to promote export during risky period.

**Keywords:** - CAGR, Densification, Export diversification, Gross Domestic Product, Herfindahl Index

### I. Introduction

The global financial crisis of late 2000 has caused the emerging and developing economies to replace advanced economies to lead global economic growth. Advanced economies accounted for only 35% of incremental global nominal GDP and 23% of incremental global GDP (PPP) while emerging and developing economies accounted for 65% of incremental global nominal GDP and 77% of incremental global GDP (PPP) from 2007 - 2011 according to International Monetary Fund (IMF). As per IMF statistics of 2007-2011, India placed 5<sup>th</sup> position for incremental nominal GDP, while for incremental nominal GDP (PPP) its rank was 2<sup>nd</sup>. Before economic recession of 2008, in the year 2007, world trade in fruits was worth USD 60.6 billion, and that of vegetables was worth USD 44.7 billion, growing at a CAGR of 12.36% and 12.68% respectively while India's share in world exports of fruits and vegetables are less than 1.5%, India's exports of fruits and vegetables have grown at a CAGR of 20.61% and 7.21% respectively by value between 2004 and 2007. Export growth in India has been much faster than GDP growth over the past few decades and demand for Indian exports increases when its export prices fall in relation to world prices. Export supply is positively related to the domestic relative price of exports and higher domestic demand reduces export supply. The global economical crisis resulted in the collapse of large financial institution but its impact affects and spread to all the economies, and India too cannot escape from it, which affect its export activities as well and force India to diversify its export activities to lead higher growth to help them to overcome export instability or the negative impact of terms of trade.

Agricultural diversification has no unique meaning but it is a process whereby more and more activities are added either to a single farm enterprise or to a region. Although literature on agricultural export diversification and economic growth has been quite rich in analytical insights, relatively little empirical work of a statistical nature has been undertaken on the subject. Agricultural diversification could be pursued with two broad objectives in mind: First, to expand the production and distribution of agricultural commodities to satisfy a higher proportion of domestic food consumption where agricultural diversification is seen as a means of generating domestic food security, or as an import substitution policy. Secondly, to increase the mix of agricultural commodities targeted for the export market in order to stabilize foreign exchange earnings.

### II. Objectives of the Study

The objective of the present study is: -

- 1) To study the performance of growth and stability of volumes (produced and exported) and value of agricultural commodities.

- 2) To study the percentage distribution for horticultural commodities to that of total export of the agricultural commodities.
- 3) To find out the concentration ratio with the help of Herfindahl Index in order to study competition and market power of agricultural commodities in general and horticulture commodities in particular.

### III. Research Methodology

To determine the above objectives, secondary data has been collected for total agricultural commodities exported from India for the last 10 years (2001-2010) in order to find out the diversification or concentration based on the value of agricultural commodities in general and horticultural commodities in particular.

#### 1. Data Sources

The secondary data has been collected through the following sources: -

- (a) Monthly Statistics of Foreign Trade, Ministry of Commerce
- (b) Agricultural Produce Export Development Authority (APEDA)
- (c) Internet

#### 2. Data Analysis

Export trends in agricultural commodities are examined over the period 2001-2010 in order to find out the diversification / concentration with the help of Herfindahl Index which is an indicator of the amount of competition. The Herfindahl index equals the sum of the squared proportional export to each commodity group within agricultural produce and hence has a maximum of 1 when the country is completely focusing on one commodity group, so lower values of the index indicate more diversification. Increase in the HI generally indicates a decrease in competition and an increase of market power, where as decreases indicates the opposite. One can calculate Herfindahl index as -

$$H = \sum_{i=1}^N s_i^2$$

where  $s_i$  is the market share of commodity  $i$  in the market, and  $N$  is the total number of commodities.

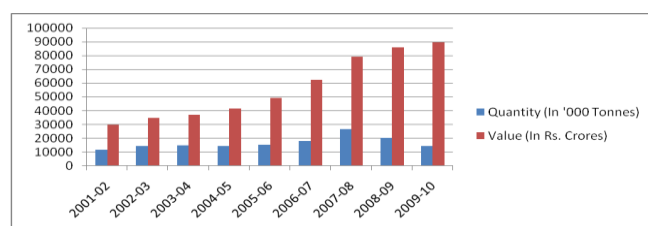
- A HI index below 0.01 indicates a highly competitive index.
- A HI index below 0.15 indicates an un-concentrated index.
- A HI index between 0.15 - 0.25 indicates moderate concentration.
- A HI index above 0.25 indicates high concentration.

#### 3. Interpretation

From annexure 1, 2 and 3, the researcher comes to a conclusion that the HI for total agricultural exports during 2001-02 to 2009-10 lies between 0.060 and 0.079, which clearly indicates that there was an increase in competition for export of agricultural commodities. Similarly the HI for fruits and vegetables for the same period which lies between 0.018 to 0.042 and 0.110 to 0.417 respectively speaks itself that the country is not focussing on one commodity group and these small index clearly indicates a competitive industry with dominant commodities..

### IV. Changes in Agricultural Exports

By compiling the 10 year data (Annexure 1) as shown in Fig. 1, it is found that the export of overall agricultural commodities, which was 11641.12 MT in the year 2001-02, increase to 15279.20 MT in 2005-06 and slightly decrease to 14623.86 MT in 2009-10. Contrary to this the value of total exported agricultural commodities, which was Rs. 29728.61 Crore in the year 2001-02 rose to Rs. 49217.00 Crore in 2005-06 and further increase to Rs. 89522.59 in 2009-10.



*Source: - Calculation Based on data of Monthly Statistics of Foreign Trade, Ministry of Commerce, GOI*

**Figure 1:** Quantity / Value of Agricultural Commodities exported during 2001-02 to 2009-10

This clearly indicates that despite slump in world market due to recession of 2008, Indian agricultural commodities succeed to achieve a high export growth rate between 2008-09 to 2009-2010. In order to find out the growth rate during the first and last financial year of the previous decade, the researcher calculates the Compound Annual Growth Rate (CAGR) of 11 groups of agricultural commodities as shown in Table 1, which depicts that the growth rate of all the commodities lies between 6% to 19%, excluding sugar whose growth rate was negative. While the CAGR for fruits and vegetables were just 15% - 16%.

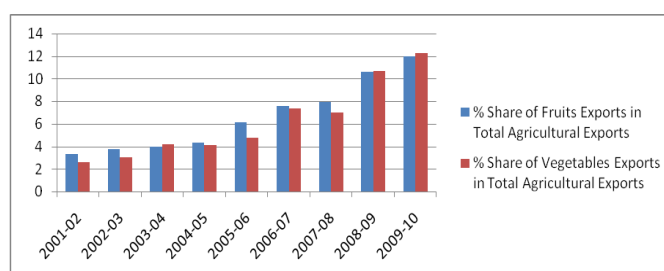
**Table 1:** Trends in Agricultural Exports, 2001-02 to 2009-10 (Value in Rs. Crores)

Commodities	2001-02	2009-10	CAGR (%) 2001-10
Food grains	4989.40	14665.91	12.72
Tea and Coffee	2814.14	4976.27	6.55
Fruits	929.70	3424.90	15.58
Vegetables	1560.36	5938.63	16.02
Animal Products	1549.53	7200.58	18.62
Nuts	2044.87	4254.15	8.48
Sugar	1781.85	130.00	- 25.23
Floriculture	127.43	293.98	9.75
Spices	1496.97	6161.02	17.04
Oilseeds	3902.04	12679.62	13.99
Other Products	8532.32	29797.53	14.90

Source: - Calculation Based on data of Monthly Statistics of Foreign Trade, Ministry of Commerce, GOI

### 1. Structure of Indian Horticultural Export Market

India is a large, low-cost producer of fruit and vegetables, and horticulture is a sector with huge export potential. But, high transportation costs, inadequate storage facilities, a fragmented supply chain, and weak quality standards at home are eroding its competitiveness. Rising incomes and growing consumer interest in a variety of fresh fruits and vegetables year-round is stimulating international trade in horticulture. India being a home of wide variety of fruits and vegetables holds a unique position in production figures among other countries and is one of the world's biggest producers of horticultural products growing nearly 11 percent of all the world's vegetables and 15 percent of all fruit, and its production costs are less than half of those in other parts of the world. Despite these advantages, India's share in the global market is insignificant - it accounts for only 1.7 percent of the global trade in vegetables and 0.5 percent in fruits. India's own share of fruits and vegetables export to that of its total agricultural exports rose from 3.34% (2001-02) to 12.01 (2009-10) and 2.60 (2001-02) to 12.30 (2009-10), but still not enough to cater need of world commodity market despite being the world's biggest producer of horticultural produce (Fig. 2).

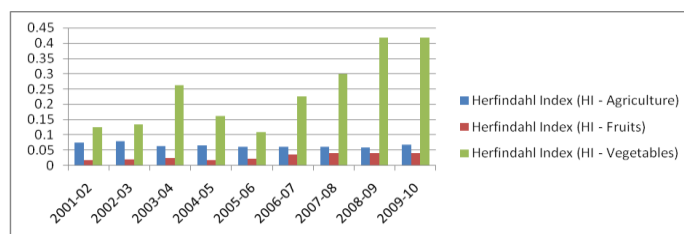


Source: - Calculation Based on data of Monthly Statistics of Foreign Trade, Ministry of Commerce, GOI

**Figure 2:** Percentage Share of Fruits & Vegetables Export to that of Total Agricultural Exports

## 2. Diversification in Agricultural / Horticultural Export

Fig. 3 clearly shows that, for the export of total agricultural products, the value of HI from 2001-02 to 2009-10 lies between  $(0.60 < HI < 0.79)$  and clearly indicates high concentration as the value is above 0.25. Similarly from Annexure 2 and 3, the HI value for selected fruits  $(0.016 < HI < 0.042)$  shows an un-concentrated index from 2001-02 to 2009-10 being value  $HI < 0.15$ , while for selected vegetables  $(0.08 < HI < 0.26)$  shows an un-concentrated index as well as moderate concentration from 2001-02 to 2006-2007, and high concentration between 2007-08 to 2009-10 as the value of HI during these three years was above 0.25.



**Source:** - Calculation Based on data of Monthly Statistics of Foreign Trade, Ministry of Commerce, GOI  
**Figure 3:** Diversification in Agricultural Exports, 2001-02 to 2009-10 (HI)

As per Table 2, the percentage share related to diversification of fruits and vegetables to that of total agricultural exports was a meager figure being just only between 3% to 6% for the period 2001-2010. It shows a growth rate of approx 3% - 4% for fruits while the growth rate for vegetables was between 5% - 7%, to that of total agricultural exports.

**Table 2:** Diversification in Agricultural Exports, 2001-02 to 2009-10 (Share in %)

Commodities	2001-02	2005-06	2009-10
Food grains	16.78	16.95	16.38
Tea and Coffee	9.47	6.74	5.56
Fruits	3.13	3.50	3.83
Vegetables	5.25	5.06	6.63
Animal Products	5.21	7.83	8.04
Nuts	6.88	6.30	4.75
Sugar	5.99	1.21	0.16
Floriculture	0.42	0.60	0.33
Spices	5.04	4.29	6.88
Oilseeds	13.13	15.67	14.16
Other Products	28.70	31.85	33.28
HI (Fruits)	0.019	0.023	0.042
HI (Vegetables)	0.125	0.110	0.417
HI (Agriculture)	0.075	0.062	0.069

**Source:** - Calculation Based on data of Monthly Statistics of Foreign Trade, Ministry of Commerce, GOI

By summing up, the researcher came to the conclusion that the value of HI, which was 0.075 in the year 2001-02 increased to 0.079 in the year 2002-03 but decreased to 0.063 in the year 2003-04 which further increased to 0.066 in the year 2004-05. The data again showing decreasing trend till 2008-09 but increased in the year 2009-10, which clearly indicates that during the period 2001-2010, India's export of agricultural commodities was totally diversified as during these periods the value of HI is less than 1. Similarly, calculated HI for selected 11 fruits and vegetables from year 2001-2010, the researcher get the value of HI  $(0.019 < HI < 0.042)$  for fruits and  $(0.110 < HI < 0.417)$  for vegetables, which also indicates that during these periods there was heavy diversification in the export of horticultural products.

## V. Conclusion and Policy Implications

The novelty of this paper is to use detail information related to export of agricultural commodities in general and horticulture commodities in particular. In addition, using these information's the researcher calculates Herfindahl Index in order to know the export diversification in agricultural commodities. Following the objectives set out at the start of the paper, the main findings of the paper are as follows: -

- Value of agricultural commodities exported during the last three years has been increased from Rs. 79039.72 Crore (2007-08) to Rs. 89522.59 (2009-10) while the volume has been decreased from 26809.80 in '000 MT (2007-08) to 14623.86 in '000 MT (2009-10).

- From 2001-02 to 2009-10, the CAGR for fruits and vegetables are much higher than the CAGR of total agricultural exports during the same period.
- Percentage share of fruits increased more than thrice, while of vegetables increased approx 5 times to that of total agricultural exports for the last decade, and finally
- The HI value for the last decade clearly indicates that there was diversification in the export of agricultural and horticultural commodities, which offers an attractive option and a major source of pushing up growth of agricultural sector. The price competitiveness of India’s horticultural commodities, like that of any other traditional commodities has determined their export performance over time. While technological up-gradation and associated institutional changes are identified as thrust areas for future development of the horticulture sector, exports are considered to be most important for the growth of the sector. India can retain its price competitiveness in horticultural commodities with a depreciating currency in addition to India’s low cost conditions can look forward to emerge as a major producer of horticultural commodities and thus secure reasonable market access for its agro exports, which are largely dependent on the competitive technologies that will help in enhancing export potential. This development will also help in overall growth of the economy through generation of extra foreign exchange, creating employment opportunities and also upliftment of the small and marginal farmers.

The window of international demand for the horticultural products is very small thus a planned core marketing strategies has to be implemented to target the markets which will help in future expansion of the domestic and international markets by overcoming export barriers.

### References

- [1]. Data on India’s Export of Agricultural Products (2001-02 to 2009-10) , Official website of Ministry of Commerce, Government of India, URL: <http://commerce.nic.in/eidb/default.asp>

### Annexure: 1

#### India’s Export of Agricultural Products

(Quantity: In ‘000 Tonnes, Value: In Rs. Crores)

Commodity	2001- 02			2002-03			2003 – 04		
	Quantit y	Value	HI (Ag)	Quantit y	Value	HI (Ag)	Quantit y	Value	HI (Ag)
Pulses	161.64	369.13	0.000	148.08	345.02	0.00 0	153.88	328.60	0.00 0
Rice Basmati	667.07	1842.77	0.004	708.79	2058.47	0.00 4	771.49	1993.05	0.00 3
Rice(Other than Basmati)	1541.49	1331.37	0.)00 2	4259.08	3772.77	0.01 2	2640.57	2174.94	0.00 3
Wheat	2649.38	1330.21	0.002	3671.25	1759.87	0.00 3	4093.08	2391.15	0.00 4
Other Cereals	144.73	115.92	0.000	106.08	91.06	0.00 0	604.23	397.55	0.00 0
Tea	180.10	1719.22	0.003	182.86	1652.07	0.00 2	177.77	1637.35	0.00 2
Coffee	176.26	1094.92	0.001	184.87	993.98	0.00 1	188.44	1085.92	0.00 1
Tobacco Unmanufactur ed	84.48	582.05	0.000	100.47	733.52	0.00 0	120.64	801.41	0.00 0
Tobacco Manufactured	13.46	225.66	0.000		289.37	0.00 0		295.06	0.00 0
Poultry & Dairy Products		207.96	0.000		176.45	0.00 0		161.56	0.00 0
Floriculture Products		127.43	0.000		180.77	0.00 0		250.47	0.00 0
Spices	239.29	1496.97	0.003	277.02	1655.49	0.00 2	267.47	1544.18	0.00 2
Cashewnut Shell Liquid	1.99	5.25	0.000	6.14	8.56	0.00 0	4.33	5.02	0.00 0

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Cashew	98.20	1788.68	0.004	129.43	2052.94	0.00 4	99.68	1699.82	0.00 2
Sesamum Seed	218.97	562.23	0.000	118.31	372.89	0.00 0	189.11	708.90	0.00 0
Nigerseed	22.22	47.85	0.000	36.13	77.99	0.00 0	17.89	45.41	0.00 0
Groundnut	112.81	250.94	0.000	67.89	178.30	0.00 0	176.93	179.11	0.00 0
Guargum Meal	117.89	403.09	0.000	111.94	486.64	0.00 0	119.33	120.56	0.00 0
Oil Meals	2781.72	2262.93	0.006	1776.13	1487.35	0.00 2	3172.31	3249.89	0.00 8
Castor Oil	213.68	625.94	0.000	177.69	609.81	0.00 0	152.36	656.06	0.00 0
Shellac	5.70	72.99	0.000	5.72	89.85	0.00 0	10.50	179.74	0.00 0
Sugar	1456.45	1728.29	0.003	1662.37	1769.49	0.00 3	1200.60	1216.59	0.00 1
Molasses	221.12	53.56	0.000	207.86	45.05	0.00 0	98.62	19.38	0.00 0
Fruits/Vegetable Seeds	4.93	62.19	0.000	8.92	97.96	0.00 0	5.18	53.61	0.00 0
Fresh Fruits		417.15	0.000		447.32	0.00 0		784.03	0.00 0
Fresh Vegetables		575.20	0.000		642.78	0.00 0		953.93	0.00 1
Processed Vegetables		198.79	0.000		256.73	0.00 0		291.15	0.00 0
Processed Fruit Juices		512.55	0.000		574.13	0.00 0		343.66	0.00 0
Miscellaneous Processed Items		724.18	0.001		910.08	0.00 1		1058.69	0.00 1
Meat & Preparations		1193.28	0.002		1377.19	0.00 2		1714.41	0.00 2
Marine Products	468.03	5898.34	0.039	527.87	6928.05	0.04 0	409.49	6105.63	0.02 7
Cotton Raw including Waste	8.23	42.69	0.000	11.75	50.28	0.00 0	179.61	942.37	0.00 1
Jute Hessian	51.28	186.22	0.000		349.31	0.00 0		410.11	0.00 0
Poultry Products		148.29	0.000		182.07	0.00 0		253.59	0.00 0
Paper/Wood products		1524.37	0.003		1950.33	0.00 3		2362.58	0.00 4
Total Agricultural Exports		29728.61	1.000		34653.94	1.00 0		37266.52	1.00 0
Total National Exports		209017.97			255137.28			293366.75	
% Share of Agricultural Exports in National Exports		14.22			13.58			12.70	
			<b>0.075</b>			<b>0.079</b>			<b>0.063</b>

Commodity	2004 - 2005			2005 - 2006			2006 - 2007		
	Quantity	Value	HI (Ag)	Quantity	Value	HI (Ag)	Quantity	Value	HI (Ag)
Pulses	271.18	602.57	0.000	447.44	1115.21	0.001	250.7	773.34	0.000
Rice Basmati	1163	2823.9	0.005	1166.57	3043.1	0.004	1045.73	2792.81	0.002
Rice(Other than Basmati)	3615.1	3945.02	0.009	2921.6	3178.17	0.004	3702.22	4243.10	0.005
Wheat	2009.35	1459.82	0.001	746.18	557.53	0.000	46.64	35.35	0.000
Other Cereals	1178.03	793.82	0.000	567.22	453.82	0.000	730.38	599.25	0.000
Tea	183.4	1840.3	0.002	162.86	1730.73	0.001	185.63	1969.51	0.001
Coffee	167.55	1069.08	0.001	177.68	1588.69	0.001	213.65	1969.00	0.001
Tobacco Unmanufactured	135.74	940.07	0.001	142.7	1021.32	0.000	158.25	1251.28	0.000
Tobacco Manufactured		314.54	0.000		309.34	0.000		433.89	0.000
Poultry & Dairy Products		458.79	0.000		794.61	0.000		497.09	0.000
Floriculture Products		222.92	0.000		301.45	0.000		652.70	0.000
Spices	364.53	1883.18	0.002	400.24	2115.98	0.002	482.8	3157.90	0.003
Cashewnut Shell Liquid	5.33	11.94	0.000	5.94	8.67	0.000	8.09	15.34	0.000
Cashew	118.11	2477.18	0.004	125.1	2584.7	0.003	122.78	2291.18	0.001
Sesamum Seed	168.28	708.95	0.000	199.81	746.6	0.000	233.34	939.58	0.000
Nigerseed	26.14	64.74	0.000	28.42	60.25	0.000	30.02	66.87	0.000
Groundnut	177.15	547.02	0.000	190.06	513.69	0.000	251.43	798.46	0.000
Guargum Meal	131.31	689.48	0.000	186.73	1094.23	0.000	189.33	1125.79	0.000
Oil Meals	3603.38	3177.6	0.006	5976	4875.01	0.010	6437.43	5504.32	0.008
Castor Oil	271.69	1077.98	0.001	254.72	939.74	0.000	294.87	1090.11	0.000
Shellac	8.54	164.87	0.000	9.3	159.98	0.000	7.51	147.20	0.000
Sugar	108.69	149.53	0.000	321.2	569.1	0.000	1643.4	3127.47	0.003
Molasses	8.16	5.52	0.000	72.94	28.81	0.000	326.87	133.37	0.000
Fruits/Vegetable Seeds	6.74	66.04	0.000	7.52	92.96	0.000	8.1	121.59	0.000
Fresh Fruits		862.26	0.000		1120.69	0.001		1413.98	0.001
Fresh Vegetables		862.99	0.000		919.81	0.000		1546.53	0.001
Processed Vegetables		362.46	0.000		494.48	0.000		650.23	0.000
Processed Fruit Juices		369.16	0.000		599.91	0.000		711.40	0.000
Miscellaneous Processed Items		908.03	0.000		989.53	0.000		1125.05	0.000
Meat & Preparations		1905.27	0.002		2750.17	0.003		3314.03	0.003
Marine Products	483.52	6469.22	0.024	554.2	7035.91	0.020	611.55	8001.04	0.016
Cotton Raw including Waste	86.64	422.58	0.000	614.8	2904.35	0.003	1162.22	6107.81	0.010
Jute Hessian		427.2	0.000		490.9	0.000		375.81	0.000
Poultry Products		281.96	0.000		313.37	0.000		313.82	0.000
Paper/Wood products		3236.66	0.006		3759.15	0.006		4915.22	0.006
Total Agricultural Exports		41602.65	1.000		49216.96	1.000		62411.42	1.000
Total National Exports		375339.53			456417.86			571779.28	
% Share of Agricultural Exports in National Exports		11.08			10.78			10.92	
			<b>0.066</b>			<b>0.062</b>			<b>0.062</b>

Commodity	2007 - 2008			2008 - 2009			2009 - 2010		
	Quantity	Value	HI (Ag)	Quantity	Value	HI (Ag)	Quantity	Value	HI (Ag)
Pulses	164.20	526.41	0.000	136.27	540.22	0.000	100.00	407.36	0.000
Rice Basmati	1183.36	4344.58	0.003	1556.41	9477.03	0.012	2015.91	10838.86	0.015
Rice(Other than Basmati)	5286.08	7410.03	0.009	931.89	1687.37	0.000	139.37	414.76	0.000
Wheat	0.24	0.24	0.000	1.12	1.46	0.000	0.00	0.00	0.000
Other Cereals	3228.05	3002.33	0.001	3999.65	3920.58	0.002	2904.49	3004.93	0.001
Tea	197.39	2034.17	0.001	207.46	2688.87	0.001	208.55	2943.27	0.001
Coffee	178.30	1872.27	0.001	174.08	2255.76	0.001	177.23	2033.00	0.001
Tobacco Unmanufactured	173.34	1432.80	0.000	208.31	2766.27	0.001	230.88	3621.24	0.002
Tobacco Manufactured		499.09	0.000		294.78	0.000		724.17	0.000
Poultry & Dairy Products		960.24	0.000		1130.08	0.000		549.29	0.000
Floriculture Products		340.30	0.000		368.81	0.000		293.98	0.000
Spices	614.86	4314.86	0.003	673.87	6338.42	0.005	680.60	6161.02	0.005
Cashewnut Shell Liquid	14.78	25.17	0.000	10.82	29.69	0.000	11.23	27.62	0.000
Cashew	111.26	2209.60	0.001	126.15	2900.97	0.001	122.17	2801.98	0.001
Sesamum Seed	317.01	1642.29	0.000	196.98	1494.26	0.000	215.98	1495.38	0.000
Nigerseed	21.68	90.23	0.000	13.72	64.23	0.000	6.00	24.23	0.000
Groundnut	269.59	1054.08	0.000	297.89	1239.01	0.000	339.98	1424.55	0.000
Guargum Meal	211.17	1125.75	0.000	258.57	1338.99	0.000	216.20	1132.87	0.000
Oil Meals	6908.50	8140.55	0.011	6742.94	10269.24	0.014	4688.85	7849.57	0.008
Castor Oil	282.18	1275.72	0.000	357.26	2128.72	0.001	397.70	2177.57	0.001
Shellac	8.01	123.99	0.000	6.03	103.89	0.000	4.18	71.27	0.000
Sugar	4684.55	5412.16	0.005	3332.08	4448.74	0.003	44.05	110.23	0.000
Molasses	897.52	250.62	0.000	172.20	82.70	0.000	31.10	19.77	0.000
Fruits/Vegetable Seeds	10.08	141.96	0.000	8.54	119.99	0.000	8.89	145.25	0.000
Fresh Fruits		1446.59	0.000		1945.24	0.001		2268.95	0.001
Fresh Vegetables		1477.89	0.000		2454.15	0.001		2904.35	0.001
Processed Vegetables		602.18	0.000		711.22	0.000		752.18	0.000
Processed Fruit Juices		773.40	0.000		1099.15	0.000		1155.95	0.000
Miscellaneous Processed Items		1362.39	0.000		2077.44	0.001		2136.85	0.001
Meat & Preparations		3749.47	0.002		5371.42	0.004		6285.44	0.005
Marine Products	490.06	6926.67	0.008	464.90	7066.37	0.007	720.23	9891.10	0.012
Cotton Raw including Waste	1557.59	8865.39	0.013	457.56	2865.85	0.001	1360.27	9542.59	0.011
Jute Hessian		464.44	0.000		415.59	0.000		308.26	0.000
Poultry Products		429.53	0.000		413.53	0.000		365.85	0.000
Paper/Wood products		4712.33	0.004		5441.63	0.004		5638.90	0.004
Total Agricultural Exports		79039.72	1.000		85951.67	1.000		89522.59	1.000
Total National Exports		655863.52			840755.06			845125.21	
% Share of Agricultural Exports in National Exports		12.05			10.22			10.59	
			0.062			0.060			0.069



**Annexure: 2**  
**India's Export of selected Horticultural products (Fruits)**  
(Value: In Rs. Crores)

Commodity	2001-2002	HI (Ag)	2002-2003	HI (Ag)
BANANAS	1,583.94	4.06167E-05	1,272.37	1.99515E-05
PINEAPPLES	159.97	4.1429E-07	142.23	2.49305E-07
ORANGES	3,187.54	0.00016449	2,846.72	9.98708E-05
GUAVAS	172.3	4.80616E-07	207.44	5.30315E-07
LICHI	35.99	2.09697E-08	100.22	1.23782E-07
MANGO	33,252.73	0.017901202	39,104.00	0.018844789
APPLE	1,339.53	2.90491E-05	1,572.72	3.04826E-05
GRAPES	6,048.81	0.000592335	11,029.58	0.001499225
POMEGRANATES	1,041.85	1.75727E-05	1,434.57	2.53625E-05
PAPAYAS	286.89	1.33247E-06	475.92	2.79137E-06
WATER MELONS	248.40	9.9892E-07	276.00	9.38787E-07
<b>TOTAL (EDIBLE FRUITS AND NUTS - ALL FORMS)</b>	<b>248,534.23</b>	1	<b>284,856.11</b>	1
<b>INDIA'S TOTAL EXPORTS</b>	<b>20,901,797.34</b>		<b>25,513,727.66</b>	
		<b>0.018748512</b>		<b>0.020524316</b>

Commodity	2003-2004	HI (Ag)	2004-2005	HI (Ag)
BANANAS	1,171.82	2.11724E-05	1,342.76	1.55603E-05
PINEAPPLES	201.71	6.27341E-07	245.15	5.18662E-07
ORANGES	5,227.59	0.000421358	3,300.66	9.40205E-05
GUAVAS	568.01	4.97463E-06	692.62	4.1401E-06
LICHI	133.98	2.76776E-07	70.9	4.33824E-08
MANGO	39,102.00	0.023574727	43,971.04	0.01668608
APPLE	1,320.08	2.68689E-05	2,644.49	6.03538E-05
GRAPES	10,603.66	0.001733646	12,883.64	0.001432511
POMEGRANATES	2,109.00	6.85807E-05	2,988.71	7.70883E-05
PAPAYAS	460.56	3.27055E-06	531.2	2.43521E-06
WATER MELONS	223.66	7.71304E-07	386.52	1.28933E-06
<b>TOTAL (EDIBLE FRUITS AND NUTS - ALL FORMS)</b>	<b>254,668.74</b>	1	<b>340,400.02</b>	1
<b>INDIA'S TOTAL EXPORTS</b>	<b>29,336,674.75</b>		<b>37,533,952.62</b>	
		<b>0.025856273</b>		<b>0.018374041</b>

Commodity	2005-2006	HI (Ag)	2006-2007	HI (Ag)
BANANAS	2,336.19	3.8535E-05	1,606.78	1.62809E-05
PINEAPPLES	515.49	1.8762E-06	360.96	8.21643E-07
ORANGES	3,487.25	8.5862E-05	2,913.86	5.3543E-05
GUAVAS	982.98	6.8222E-06	772.53	3.76353E-06
LICHI	93.64	6.191E-08	155.94	1.53349E-07
MANGO	51,437.55	0.01868082	67,936.33	0.029105117
APPLE	3,892.80	0.00010699	3,151.43	6.26297E-05
GRAPES	21,607.20	0.00329634	30,527.48	0.005876884
POMEGRANATES	5,670.16	0.000227	11,461.62	0.000828433
PAPAYAS	665.13	3.1236E-06	1,160.11	8.48718E-06
WATER MELONS	507.17	1.8161E-06	750.52	3.55214E-06
<b>TOTAL (EDIBLE FRUITS AND NUTS - ALL FORMS)</b>	<b>376,341.66</b>	1	<b>398,214.81</b>	1
<b>INDIA'S TOTAL EXPORTS</b>	<b>45,641,786.15</b>		<b>57,177,928.52</b>	
		<b>0.02244925</b>		<b>0.03595966</b>

Commodity	2007-2008	HI (Ag)	2008-2009	HI (Ag)
BANANAS	2,607.95	4.86368E-05	5,545.76	0.000125283
PINEAPPLES	339.76	8.25488E-07	367.81	5.51084E-07
ORANGES	2,726.83	5.31719E-05	2,320.34	2.19318E-05
GUAVAS	417.19	1.24461E-06	304.42	3.775E-07
LICHI	88.91	5.65285E-08	155.94	9.90571E-08
MANGO	65,914.45	0.031069031	93,097.96	0.035306179
APPLE	3,335.20	7.95445E-05	5,232.39	0.000111525
GRAPES	31,706.78	0.007189037	37,465.10	0.005717737
POMEGRANATES	11,942.84	0.001019957	11,461.62	0.000535134
PAPAYAS	1,123.18	9.02122E-06	1,809.58	1.33391E-05
WATER MELONS	579.69	2.40302E-06	1,048.79	4.48072E-06
<b>TOTAL (EDIBLE FRUITS AND NUTS - ALL FORMS)</b>	<b>373,952.79</b>	1	<b>495,467.08</b>	1
<b>INDIA'S TOTAL EXPORTS</b>	<b>65,586,352.18</b>		<b>84,075,505.87</b>	
		<b>0.03947293</b>		<b>0.04183664</b>

Commodity	2009-2010	HI (Ag)
BANANAS	13,014.65	0.000628132
PINEAPPLES	402.7	6.0138E-07
ORANGES	2,539.26	2.39111E-05
GUAVAS	113.39	4.76799E-08
LICHI	88.91	2.93148E-08
MANGO	95,582.44	0.033879884
APPLE	3,210.34	3.82197E-05
GRAPES	43,832.07	0.00712475
POMEGRANATES	11,942.84	0.000528933
PAPAYAS	1,748.75	1.13407E-05
WATER MELONS	1,665.64	1.02884E-05
<b>TOTAL (EDIBLE FRUITS AND NUTS - ALL FORMS)</b>	<b>519,286.65</b>	1
<b>INDIA'S TOTAL EXPORTS</b>	<b>84,553,364.38</b>	
		<b>0.0422461</b>

**Annexure: 3**  
**India's Export of selected Horticultural products (Vegetables)**  
(Value: In Rs. Crores)

Commodity	2001-2002	HI (Ag)	2002-2003	HI (Ag)
POTATOES	744.47	4.37818E-05	1747.97	0.00020279
TOMATOES	136.47	1.47121E-06	1,185.05	9.3209E-05
ONIONS	39003.41	0.12017228	44,471.83	0.13126731
GARLIC	177.8	2.49725E-06	698.67	3.2399E-05
CARROTS & TURNIPS	2.24	3.96365E-10	3.73	9.2343E-10
PEAS	307.28	7.45878E-06	1311.59	0.00011418
MUSHROOM	7836.56	0.00485121	6687.59	0.00296842
GREEN CHILLY	285.95	6.45921E-06	284.47	5.3711E-06
SPINACH	0.52	2.13602E-11	0.27	4.8385E-12
PUMPKINS	0.92	6.68613E-11	6.46	2.7698E-09
CHICKPEAS	254.06	5.09884E-06	402.34	1.0744E-05
<b>TOTAL EDIBLE VEGETABLES, ROOTS AND TUBERS (ALL FORMS)</b>	<b>112,512.41</b>	1	<b>122,745.82</b>	1
<b>INDIA'S TOTAL EXPORTS</b>	<b>20,901,797.34</b>		<b>25,513,727.66</b>	
		<b>0.125090258</b>		<b>0.1346944</b>

Commodity	2003-2004	HI (Ag)	2004-2005	HI (Ag)
POTATOES	3172.73	0.00044147	3392.14	0.000386884
TOMATOES	685.42	2.0604E-05	589.38	1.16795E-05
ONIONS	77009.46	0.26009225	69099.84	0.16054164
GARLIC	1422.65	8.8764E-05	438.19	6.45593E-06
CARROTS & TURNIPS	13.18	7.6185E-09	11.24	4.24782E-09
PEAS	1423.92	8.8922E-05	1695.05	9.66048E-05
MUSHROOM	4734.26	0.00098298	3443.87	0.000398774
GREEN CHILLY	898.99	3.5445E-05	909.21	2.77947E-05
SPINACH	3.64	5.8109E-10	28.16	2.66624E-08
PUMPKINS	0.0008	2.8069E-17	318.24	3.4052E-06
CHICKPEAS	539.88	1.2783E-05	4,127.76	0.000572878
<b>TOTAL EDIBLE VEGETABLES, ROOTS AND TUBERS (ALL FORMS)</b>	<b>151,001.19</b>	1	<b>172,457.94</b>	1
<b>INDIA'S TOTAL EXPORTS</b>	<b>29,336,674.75</b>		<b>37,533,952.62</b>	
		<b>0.2617632</b>		<b>0.162046148</b>

Commodity	2005-2006	HI (Ag)	2006-2007	HI (Ag)
POTATOES	4683.85	0.00034707	6696.56	0.00056343
TOMATOES	1,086.07	1.8661E-05	3,410.20	0.00014611
ONIONS	81383.67	0.1047831	132065.86	0.21913663
GARLIC	3875.61	0.00023763	1996.35	5.0073E-05
CARROTS & TURNIPS	19.03	5.7292E-09	19.32	4.6897E-09
PEAS	1975.31	6.1729E-05	917.15	1.0569E-05
MUSHROOM	7042.9	0.00078473	3967.45	0.00019777
GREEN CHILLY	1,482.59	3.4774E-05	2,216.38	6.1719E-05
SPINACH	81.81	1.0588E-07	40.83	2.0946E-08
PUMPKINS	662.25	6.9384E-06	635.94	5.0812E-06
CHICKPEAS	15,069.64	0.00359271	21,730.51	0.00593299
<b>TOTAL EDIBLE VEGETABLES, ROOTS AND TUBERS (ALL FORMS)</b>	<b>251,415.27</b>	1	<b>282,119.48</b>	1
<b>INDIA'S TOTAL EXPORTS</b>	<b>45,641,786.15</b>		<b>57,177,928.52</b>	
		<b>0.1098675</b>		<b>0.2261044</b>

Commodity	2007-2008	HI (Ag)	2008-2009	HI (Ag)
POTATOES	4867.16	0.000372332	13810.41	0.000417559
TOMATOES	15,290.78	0.003674838	12,766.20	0.000661495
ONIONS	126618.91	0.251985826	197,069.35	0.406102089
GARLIC	170.64	4.57658E-07	242.18	0.00012617
CARROTS & TURNIPS	38.23	2.29714E-08	67.65	2.90433E-08
PEAS	929.51	1.35796E-05	2052.81	1.22644E-05
MUSHROOM	3084.13	0.000149501	1681.56	3.03669E-05
GREEN CHILLY	4,372.16	0.000300449	4,832.06	0.000245303
SPINACH	66.63	6.9778E-08	89.09	1.97128E-08
PUMPKINS	2,099.36	6.92712E-05	365.69	1.57841E-06
CHICKPEAS	51,896.93	0.042331368	50,276.19	0.009491178
<b>TOTAL EDIBLE VEGETABLES, ROOTS AND TUBERS (ALL FORMS)</b>	<b>252,238.00</b>	1	<b>356,241.20</b>	1
<b>INDIA'S TOTAL EXPORTS</b>	<b>65,586,352.18</b>		<b>84,075,505.87</b>	
		<b>0.2985254</b>		<b>0.41708805</b>

Commodity	2009-2010	HI (Ag)
POTATOES	8202.67	0.00041756
TOMATOES	10,324.28	0.00066149
ONIONS	255808.03	0.40610209
GARLIC	4508.95	0.00012617
CARROTS & TURNIPS	68.41	2.9043E-08
PEAS	1405.79	1.2264E-05
MUSHROOM	2212.06	3.0367E-05
GREEN CHILLY	6,287.07	0.0002453
SPINACH	56.36	1.9713E-08
PUMPKINS	504.32	1.5784E-06
CHICKPEAS	39,107.19	0.00949118
<b>TOTAL EDIBLE VEGETABLES, ROOTS AND TUBERS (ALL FORMS)</b>	<b>401,417.74</b>	1
<b>INDIA'S TOTAL EXPORTS</b>	<b>84,553,364.38</b>	
		<b>0.4170881</b>