



## Indian agricultural trade in WTO regime

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### ABSTRACT

Agriculture sector is the fundamental constituent of the Indian economy and this sector provides employment to more than (50%) population and contributes (17.32%) of gross domestic product. India is a net exporter of agricultural commodities with net exports earnings of US\$ 28.66 billion in the year 2015. Nonetheless, liberalization, globalization, world Trade organization can greatly enhance the role of agriculture as an engine of growth in low-income countries like India by making it possible for the agricultural sector to grow considerably faster than the domestic consumption. It also increases the potential for enhance agricultural export from India to World. The present study was based on secondary data collected from the various published sources, viz. various issues of hand book of RBI, FAO Trade year Book, Statistical Abstract in India, indiastat.com, FAOSTAT etc. This study was carried out during 2018 at department of Agricultural Economics, CCSHAU, Hisar. The data were grouped into two periods (Pre-WTO and Post-WTO) depending upon the formation of world trade organization and its effect on export and import of agricultural sector, Period-I related to agricultural trade before formation of world trade organization and ranged from 1975–1994 and Period-II ranged from 1995–2015 which is the Post-WTO period. The data was analysed by using major analytical techniques like least square technique, tabular analysis, per centage share, growth rates and Coefficient of Variation. In this context, the present study analyses the trends, growth and instability in agricultural trade of India before and after WTO.

**Keywords:** Agricultural trade, Export, Import, Instability, World trade

Agriculture sector is the fundamental constituent of the Indian economy and this sector provides employment to more than (50%) population and contributes (17.32%) of gross domestic product (Central Statistics Office, New Delhi). The average share of agricultural sector in India's GDP has been reported as (19.84%) during the post-WTO epoch (1995-2015), which was (11.43%) lesser than the average share of agricultural sector to GDP during the pre-WTO epoch (1975-1994). India's leading exports consisted of Basmati rice, meat of bovine animals, frozen shrimp and prawns, cotton and refined sugar (www.export.gov, 2018).

Agriculture was included within the multilateral trading system only during the Uruguay Round of trade negotiations at the inception of WTO in 1995 (Beverelli *et al.* 2015). The WTO is one of the most imperative international organisations and the examination; whether the WTO membership enhances international trade. It can be used by governments as an obligation device in comparison with domestic lobbies (Javorcik and Narciso 2016). India became a member of WTO on 1st January 1995 and it

was the first multilateral agreement, meant to curb unfair practices in agricultural trade and set off the process of reforms in the agricultural sector. Performance of agricultural export has always attracted policy makers' attention, as it is an important source of foreign exchange earnings. The coming into force of the World Trade Organisation (WTO) has brought a qualitative change in the deliberations on the topic (Suresh and Mathur 2016). The study of import and export of various agricultural commodities in India is very important aspect to understand the impact of pre- and post-WTO regime on agricultural trade so as to frame better policies in the future. The present study covers the periods before WTO and after WTO i.e., the period from 1975 to 1994 (Pre-WTO period) and the year from 1995 to 2015 (Post-WTO period). In this context, the present study analyses the trends, growth and Coefficient of variation in agricultural export import of India before and after WTO.

### MATERIALS AND METHODS

The present study (2018) was based on secondary data collected from the various published sources, viz. various issues of hand book of RBI, FAO Trade year Book, Statistical Abstract in India, indiastat.com, FAOSTAT etc. The data were grouped into two periods (Pre-WTO and Post-WTO) depending upon the formation of world trade organization and its effect on export and import of agricultural sector,

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Period-I related to agricultural trade before formation of world trade organization and ranged from 1975–1994 and Period-II ranged from 1995–2015 which is the Post-WTO period. Data acquired for analysis included total agricultural trade, total world agricultural trade. The data was analysed by using major analytical techniques like least square technique, tabular analysis, percentage share and growth rates. The compound growth rates (C. G. R.) in export and import of agricultural trade in India were also calculated for the period of 20 and 21 years i.e. 1975–1994 and 1995–2015 (Nimbrayan *et al.* 2019).

## RESULTS AND DISCUSSION

*India's agricultural trade share in world agricultural trade during pre-WTO regime:* The analysis of the data (Table 1) revealed that volume of agricultural export in India as well as world level gradually increased and also showed a positive trend during pre-WTO regime (1975–94). The volume of India's agricultural export was 1.68 US\$ billion in 1975 which increased up to 3.24 US\$ billion in 1994 registering an increase by 1.93 times since 1975 however, maximum export value of 3.36 US\$ billion was attained in 1993. Whereas the volume of agricultural export of world was 123.93 US\$ billion in 1975 which increased up to 388.44 US\$ billion in 1994 registering an increase by 3.13 times since 1975. The volume of India's agricultural import shows up and downs during pre-WTO period as 1.75 US\$ billion in 1975 which increased to 2.20 US\$ billion in 1994 registering an increase by 1.26 times since 1975 however, minimum value of agricultural import in India worth 0.74 US\$ billion was attained in 1991. At world level, the volume of agricultural import was 137.08 US\$ billion in 1975 that increased up to 402.54 US\$ billion in 1994 registering an increment by 2.94 times during the period. It can further be observed from the data (Table 1) that decreasing trend in terms of India's share in world's export during pre-WTO period of 1975–94. India's share in world export was (1.35%) in 1975 which decreased to (0.83%) in 1994 registering a decline by (0.52%) since 1975. The percentage share of export was minimum (0.76%) during 1988 and the average of percentage share of export remained (1.03%) during pre-WTO regime.

Similarly, India's agricultural import share in world's agricultural import has also shown decreasing trend during pre-WTO period and data (Table 1) revealed that India's agricultural import share in world agricultural import was (1.27%) in 1975 which decreased to (0.55%) in 1994 registering a decrease by (0.72%) since 1975. The percentage share of import was minimum i.e. 0.21% during 1991 due to devaluation of exchange rate followed by subsequent depreciation in exchange rate whereas, the average of percentage shares of agricultural import remained (0.61%) during pre-WTO regime.

The further analysis (Table 1) showed that volume of agricultural export has been gradually increasing and also shown a positive trend. The volume of India's agricultural export was 5.49 US\$ billion in 1995 which has increased to

28.66 US\$ billion in 2015 registering an increase by 5.22 times since 1995 attaining maximum export value 42.49 US\$ billion in 2013 and minimum export value 4.64 US\$ billion in 1999 due to lifting of some restrictions on export. Whereas the volume of agricultural export of world was 442.89 US\$ billion in 1995 which has increased to 1260.42 US\$ billion in 2015 registering an increase by 2.84 times since 1995. The volume of agricultural import has also been gradually increasing and also shown a positive trend. The volume of India's agricultural import was 22.23 US\$ billion in 1995 which has increased to 22.19 US\$ billion in 2015 registering an increase by 9.98 times since 1995. The volume of agricultural import of world was 461.02 US\$ billion in 1995 which has increased to 1322.96 US\$ billion in 2015 registering an increase by 2.86 times since 1995 attaining minimum import value 433.16 US\$ billion in 2000 and maximum import value 1455.34 US\$ billion in 2014.

India's agricultural export share in world's agricultural export has shown increasing trend during post-WTO period and data (Table 1) revealed that India's share in world export was (1.24%) in 1995 which has increased to (2.27%) in 2015 registering a growth by (1.03%) since 1995. The percentage share of export was varying from (3.04 to 1.11%) and the average of percentage share of export remained (1.67%) during post-WTO regime. Similarly, India's agricultural import share in world's agricultural import has shown increasing trend during post-WTO period and data showed (Table 1) that India's agricultural import share in world agricultural import was (0.48%) in 1995 which has increased to (1.68%) in 2015 registering an increase by (1.20%) since 1995. The percentage share of import was minimum (0.46%) during 1996 due to liberalization of trade and the average of percentage share of import remained (0.96%) during post-WTO regime.

In the WTO regime India's share in world agricultural exports has increased but it is less than that of imports. Similar results were found by Ohlan (2006). Close examination of the data (Table 2) highlighted the fact that India's average agricultural export was 2.43 US\$ billion during pre-WTO period while it was 15.33 US\$ billion in post-WTO period. Similar results were found by Anjum and Khan (2017). With respect to the world's export import scenario, it was found that average agricultural export and import during pre-WTO period was 245.72 and 266.12 US\$ billion, respectively while the average export and import during post-WTO period was 795.00 and 825.55 US\$ billion, respectively.

The compound growth rate of agricultural export observed during pre-WTO regime was (2.98%) and during post-WTO regime it was (12.60%) i.e. more than four times higher than the pre-WTO period due to liberalization and globalization of trade. It can further be elucidated that the growth rate in agricultural import which was (-0.87%) in pre-WTO period increased to (13.11%) in post-WTO period showing a huge increase in this sector (Table 2). Similar findings were also observed by Singh (2014). The trade volume of India was increasing after the WTO

Table 1 India's agricultural trade share in world agricultural trade during pre-WTO regime (Trade in US\$ billion)

| Year    | India's agricultural trade share in world agricultural trade during pre-WTO regime |        |        |        |                           |        |
|---------|------------------------------------------------------------------------------------|--------|--------|--------|---------------------------|--------|
|         | India                                                                              |        | World  |        | % Share of India in World |        |
|         | Export                                                                             | Import | Export | Import | Export                    | Import |
| 1975    | 1.68                                                                               | 1.74   | 123.93 | 137.08 | 1.35                      | 1.27   |
| 1976    | 1.72                                                                               | 1.66   | 133.15 | 144.84 | 1.30                      | 1.15   |
| 1977    | 1.93                                                                               | 1.40   | 152.96 | 166.73 | 1.27                      | 0.84   |
| 1978    | 1.76                                                                               | 1.17   | 172.72 | 188.49 | 1.02                      | 0.62   |
| 1979    | 2.18                                                                               | 1.16   | 204.22 | 223.57 | 1.07                      | 0.52   |
| 1980    | 2.47                                                                               | 1.45   | 233.82 | 254.53 | 1.06                      | 0.57   |
| 1981    | 2.69                                                                               | 1.44   | 233.14 | 253.75 | 1.16                      | 0.57   |
| 1982    | 2.30                                                                               | 1.42   | 213.08 | 234.33 | 1.08                      | 0.61   |
| 1983    | 2.32                                                                               | 1.67   | 208.82 | 229.11 | 1.11                      | 0.73   |
| 1984    | 2.25                                                                               | 1.94   | 220.94 | 241.39 | 1.02                      | 0.80   |
| 1985    | 2.26                                                                               | 1.64   | 208.66 | 232.50 | 1.09                      | 0.71   |
| 1986    | 2.37                                                                               | 1.30   | 228.98 | 250.92 | 1.04                      | 0.52   |
| 1987    | 2.33                                                                               | 1.69   | 252.64 | 277.61 | 0.92                      | 0.61   |
| 1988    | 2.17                                                                               | 1.93   | 286.51 | 312.41 | 0.76                      | 0.62   |
| 1989    | 2.65                                                                               | 1.06   | 302.03 | 327.12 | 0.88                      | 0.33   |
| 1990    | 3.07                                                                               | 1.08   | 325.57 | 351.46 | 0.94                      | 0.31   |
| 1991    | 2.79                                                                               | 0.74   | 328.65 | 353.02 | 0.85                      | 0.21   |
| 1992    | 2.94                                                                               | 1.35   | 357.34 | 386.17 | 0.82                      | 0.35   |
| 1993    | 3.35                                                                               | 1.04   | 338.73 | 355.22 | 0.99                      | 0.29   |
| 1994    | 3.23                                                                               | 2.20   | 388.44 | 402.54 | 0.83                      | 0.55   |
| Average | 2.42                                                                               | 1.45   | 245.72 | 266.14 | 1.03                      | 0.61   |
| CGR (%) | 2.98                                                                               | -0.87  | 5.29   | 5.11   | -                         | -      |

India's agricultural trade share in world agricultural trade during Post-WTO regime

| Year    | India  |        | World   |         | % Share of India in World |        |
|---------|--------|--------|---------|---------|---------------------------|--------|
|         | Export | Import | Export  | Import  | Export                    | Import |
| 1995    | 5.49   | 2.22   | 442.89  | 461.03  | 1.24                      | 0.48   |
| 1996    | 5.85   | 2.21   | 465.53  | 480.19  | 1.26                      | 0.46   |
| 1997    | 5.66   | 2.58   | 457.52  | 468.45  | 1.24                      | 0.55   |
| 1998    | 5.23   | 3.83   | 437.68  | 457.12  | 1.19                      | 0.84   |
| 1999    | 4.64   | 3.97   | 417.12  | 443.52  | 1.11                      | 0.90   |
| 2000    | 4.95   | 2.88   | 411.03  | 433.16  | 1.20                      | 0.66   |
| 2001    | 5.23   | 3.92   | 414.40  | 441.84  | 1.26                      | 0.89   |
| 2002    | 5.52   | 4.03   | 442.72  | 465.33  | 1.25                      | 0.87   |
| 2003    | 6.50   | 4.91   | 525.35  | 551.74  | 1.24                      | 0.89   |
| 2004    | 7.06   | 5.12   | 607.39  | 638.44  | 1.16                      | 0.80   |
| 2005    | 9.02   | 5.36   | 653.54  | 679.89  | 1.38                      | 0.79   |
| 2006    | 11.26  | 7.07   | 721.47  | 753.97  | 1.56                      | 0.94   |
| 2007    | 16.71  | 8.09   | 873.29  | 913.26  | 1.91                      | 0.89   |
| 2008    | 17.31  | 9.14   | 1067.55 | 1118.57 | 1.62                      | 0.82   |
| 2009    | 15.66  | 12.82  | 950.96  | 988.06  | 1.65                      | 1.30   |
| 2010    | 19.97  | 10.66  | 1084.74 | 1107.37 | 1.84                      | 0.96   |
| 2011    | 30.29  | 17.26  | 1320.24 | 1357.01 | 2.29                      | 1.27   |
| 2012    | 38.17  | 20.18  | 1337.67 | 1369.86 | 2.85                      | 1.47   |
| 2013    | 42.49  | 19.22  | 1396.56 | 1429.35 | 3.04                      | 1.34   |
| 2014    | 36.18  | 21.05  | 1407.02 | 1455.34 | 2.57                      | 1.45   |
| 2015    | 28.66  | 22.19  | 1260.42 | 1322.96 | 2.27                      | 1.68   |
| Average | 15.33  | 8.99   | 795.00  | 825.55  | 1.67                      | 0.96   |
| CGR (%) | 12.60  | 13.11  | 7.55    | 7.48    | -                         | -      |

Source: FAO (www.faostat.fao.org.)

Table 2 India and World agricultural trade during pre and post-WTO period

| Particular                                                                         | India   |          | World   |          |
|------------------------------------------------------------------------------------|---------|----------|---------|----------|
|                                                                                    | Pre-WTO | Post-WTO | Pre-WTO | Post-WTO |
| Average export (US\$ billion)                                                      | 2.43    | 15.33    | 245.72  | 795.00   |
| Average import (US\$ billion)                                                      | 1.46    | 8.99     | 266.14  | 825.55   |
| Export, CGR (%)                                                                    | 2.98    | 12.60    | 5.29    | 7.55     |
| Import, CGR (%)                                                                    | -0.87   | 13.11    | 5.11    | 7.48     |
| Export share in world (%)                                                          | 1.03    | 1.67     | -       | -        |
| Import share in world (%)                                                          | 0.61    | 0.96     | -       | -        |
| <i>Instability in agricultural trade during pre and post-WTO regime (Per cent)</i> |         |          |         |          |
| Variables                                                                          | Export  |          | Import  |          |
|                                                                                    | Pre-WTO | Post-WTO | Pre-WTO | Post-WTO |
| Agricultural trade (World)                                                         | 30.65   | 47.72    | 29.30   | 47.03    |
| Agricultural trade (India)                                                         | 19.86   | 81.60    | 24.67   | 76.98    |
| Merchandise trade (India)                                                          | 51.87   | 77.22    | 40.67   | 82.91    |

implementation, though not at so good rate as compared to world trade. Similar findings were also reported by Dubba (2016), Kour and Bhau (2013) in case of value and growth of agricultural export.

In depth analysis of the data indicated that compound growth rate in Indian agricultural export was more than the import during pre-WTO period, however, reverse trend was observed during post-WTO period (growth rate of agricultural import was (0.51%) higher than the Indian agricultural export) as during this period falling of international prices import into country became more attractive and were facilitated due to liberalization of imports followed due to WTO commitments. The compound growth rate of world's agricultural export and import was (5.29%) and (5.11%) in pre-WTO era. In post-WTO era, the compound growth rate of world's export and import was (7.55%) and (7.48%), respectively. It is a clear pointer to the fact that world's agricultural export as well import compound growth rate was slightly more than (5.0%) and almost equal during the post-WTO period.

The percentage share of agricultural export of India in world rose from (1.03%) in pre-WTO period to (1.67%) during Post-WTO period, however, with respect to the share of Indian agricultural import in world, it was indicated that it increased from (0.61%) in pre-WTO period to (0.96%) in post-WTO period reason behind this was liberalization, globalization, privatization and the world trade organization. These conclusions are in agreement with the observations of Anjum and Khan (2017) who reported that India's average share in world agricultural exports was very low i.e. (0.85%) in pre-WTO period and increased to (1.49%)

in post WTO period which implies that WTO has improved India's position in world agricultural exports.

Values (Table 2) further revealed that agricultural trade and merchandise trade was stable during pre-WTO period as compared to post-WTO period. Agricultural export from India was fairly stable in pre-WTO period (CV was 19.86%) than post-WTO period (CV was 81.60%). Likewise, agricultural import was also stable in pre-WTO period than post-WTO with coefficient of Variation (24.67%) and (76.98%) during pre and post-WTO era, respectively. Similarly, India's merchandise trade showed low instability during pre-WTO period (CV was 51.87% for export and 40.67% for import) in comparison to post-WTO period (CV was 77.22% for export and 82.91% for import). Like India, World's agricultural export also showed less variability during pre-WTO era with coefficient of variation (30.65%) and (29.30%) for export and import respectively than post-WTO where coefficient of variation was (47.72%) and (47.03%) for export and import, respectively. However, as per finding reported by Sheshugiri (2011), C.V. for the periods i.e. 1976-85, 1986-94 and 1995-2004 worked out were 15.52, 14.86 and 12.79%, respectively.

The trend analysis of agricultural trade of India indicated that trend in agricultural trade shows that post WTO trade regime did not help much in export growth but it resulted in sharp rise in import. There was a significant increase in percentage share of India's agricultural export as well as import during post-WTO period and decrease in this percentage share during pre-WTO period. The compound growth rate in Indian agricultural export was more than import during pre-WTO, however, reverse trend was observed during post-WTO. World agricultural export was less stable in comparison to import during pre-WTO regime while during post-WTO. India's agricultural export was more stable in comparison to import during pre-WTO regime whereas reverse trend was observed during post-WTO. Post WTO trade regime did not help much in export growth but it resulted in sharp rise in agricultural import.

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