CHAPTER IX

SUMMARY, FINDINGS, SUGGESTIONS AND CONCLUSIONS
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9.1 Summary

In order to promote free trade among nations, the Bretton Woods Conference (1944) urged the World Community to establish the International Trade Organization (ITO). But the effort was not successful due to differences among the member countries. As a temporary arrangement in 1948, GATT came into existence in Geneva to pursue the objective of eliminating trade barriers in order to encourage the international trade and thereby to promote the growth and development of all the member countries. The GATT’s first seven rounds of trade negotiations were aimed at stimulating international trade through reduction in tariff barriers among the member countries. As a result, the world trade had undergone a structural change during the four-and-half decades since the establishment of GATT in 1948. At the end of the Uruguay Round (GATT’s eighth round), the World Trade Organization (WTO) was established on the 1st January 1995. With the creation of the WTO, certain critical areas like agriculture, textiles, TRIPs, TRIMs, Sanitary and Phyto-Sanitary (SPS) Measures and Anti-Dumping Measures were brought under the purview of WTO.

India is a founder member of the World Trade Organization (WTO). The WTO was basically established to promote international trade by removal of trade barriers among the member countries. But the majority of the developing country members are under the impression that, it is a rich men’s club and it is a curse to be used to exploit the resources of the developing nations through the Agreement on Agriculture. As a matter of fact, agriculture was not brought under the negotiations of General Agreement on Tariffs and Trade till 1986. For the first time, agriculture was brought under the negotiations of Uruguay Round of trade agreements during 1986 at Punta del Este, Uruguay.
The main contention between the developed and the developing countries at the WTO regarding agriculture is that the developed countries want greater access to markets for their agricultural products in developing countries, whereas the developing countries stress that the poor farmers in the South cannot compete with heavily-subsidized farmers in the Western countries.

However, it is mandatory for India to implement the WTO’s Agreement on Agriculture in the Indian economy. After the implementation of the WTO’s agreements, the impact of the WTO’s policies on Indian agriculture has been mixed. Some sections of the population have benefited from it, while the majority of the population who depend on agriculture as their way of life, have been affected severely in the form of flooding of imported agricultural products at cheaper rates in the Indian market that has led to depreciation in the price of agricultural commodities in the domestic market. Liberalisation, privatization and globalisation have changed the shape and structure of the India’s agriculture. The Indian farmer’s cultivation pattern was forced to change towards an export orientation crops, which in turn created serious food insecurity within the country. Under these circumstances, it is necessary to understand the Agreement on Agriculture (AoA) of the WTO and its impact on the Indian economy so as to formulate suitable policies for the development of agriculture as well as the people depending on agriculture. In view of this, the present study has made an attempt to analyze the impact of the WTO’s policies on Indian agriculture. The study has been carried out with the following specific Objectives

- To trace the emergence of World Trade Organization, its rationale, objectives and policies,
- To analyze the growth and trends in agricultural area and production during the pre- and the post-WTO periods,
* To analyze the extent of diversification in Indian agriculture in the pre- and the post-WTO periods,

To examine the variability and trends in agricultural prices during the pre- and the post-WTO periods;

& To analyze the rate of growth and composition of India’s agricultural exports and imports during the pre- and the post-WTO periods.

© To assess the consequences of the above developments on Indian agriculture; and,

* To offer policy suggestions to improve the terms of trade in favour of India.

The study was based on published secondary data. The time-series data on area and production of different crops were collected for the period 1985-86 to 2004-05 from the Centre for Monitoring Indian Economy, Agricultural Reports, the Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India, New Delhi. The data on farm harvest prices of principal crops were collected from the Directorate of Economics and Statistics, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India, New Delhi. The data on exports and imports of principal agricultural produce were collected from the Directorate General of Commercial Intelligence and Services Annual Reports, Ministry of Commerce and Industry, Government India, New Delhi.

The annual compound growth rates of area and production for different crops were computed by estimating the exponential growth model. The analysis was carried out for the country as a whole. Markov chain analysis was employed to examine the structural change in the cropping pattern for two periods, viz, period I (1985-86 to 1994-95) i.e., pre-WTO period and period II (1995-96 to 2004-05) i.e., post-WTO period.
Components of change in the average area and production and variance of production between two the periods were identified and their percentage contribution was worked out by using Hazel’s decomposition model.

The coefficient of variation as a measure of instability in the farm harvest prices of principal crops was estimated across the country. The annual compound growth rates of area and production for different crops were worked out for two time periods: period I (1985-86 to 1994-95) and period II (1995-96 to 2004-05). This facilitates comparing the growth performance of different crops across the country, so that the government can make pertinent policy decisions on agriculture.

Based on this comprehensive study, following are the main findings.

9.2 Main Findings:

9.2.1 Growth and trends in agricultural area and production during the pre- and the post-WTO periods

It is found that the growth rate of area under food grains cultivation in toto, (Table 5.1) indicated a zero growth during the pre-WTO period (1985-86 to 1994-95). In the case of food grains, such as paddy, maize and wheat the area under cultivation have increased at the rate of 0.01 per cent per annum. Though it was not remunerative but due to survival of not only the farming community but also the society as a whole. In the case of jowar, bajra and ragi, the area under cultivation recorded negative growth rates at the rate of -0.04 per cent, -0.01 per cent and -0.03 per cent respectively, which was mainly due to the non-remunerative to the farming community during the pre-WTO period.

But, in the post-WTO period, the area under maize cultivation has increased at the rate of 0.02 per cent per annum and in the case of jowar,
bajra and ragi, the area under cultivation were recorded negative growth rates at the rate of -0.03 per cent, -0.01 per cent and -0.02 per cent respectively, which was mainly due to the shifting of cropping pattern towards remunerative and export oriented commercial, fruits and vegetable crops. The area under cultivation of paddy and wheat registered zero growth, which again reinforces the shifting of the cropping pattern because of non-remunerative prices to the farming community during the WTO regime.

The growth rates of food grains production (Table 5.2) indicated that during the pre-WTO period (1985-86 to 1994-95) production increased at the rate of 0.03 per cent only, which was due to significant decrease in area under food grains cultivation. Among the food crops, the production of bajra has increased at the rate of 0.06 per cent per annum, followed by maize and wheat whose production increased at the rates of 0.04 per cent per annum each. The growth rate of paddy production increased was 0.03 per cent per annum and the production of ragi registered zero growth, which was due to a drastic decline in the area under ragi cultivation during the pre-WTO period.

However, in the post-WTO period (1995-96 to 2004-2005), the growth rates of total food grains production has increased at the rate of 1.01 per cent per annum, which was due to significant increase in productivity. Among the food crops, the production of maize registered the highest growth rate (1.04 per cent) and jowar recorded the lowest growth rate (0.96 per cent) per annum. The study also found that the production of bajra increased at the rate of 1.03 per cent per annum, followed by wheat production which increased at the rate of 1.01 per cent and the production of paddy increased at the rate of 1.00 per cent per annum, which was mainly due to significant increase in productivity during the post-WTO period. Thus, it can be concluded that during the post-WTO period, the productivity contributed in increasing the production of food grains in India.
The study found that an insignificant growth rate was recorded in the case of area under pulses cultivation. The growth rate of area under arhar cultivation has increased at the rate of 0.01 per cent per annum during the pre-WTO period, whereas zero growth was observed during the post-WTO period. In contrast, the area under gram cultivation registered a negative growth rate. It declined at the rate of -0.01 per cent and -0.02 per cent per annum during the pre-and the post-WTO periods respectively. The growth rates of area under other pulses cultivation have recorded only zero growth for both the pre- and the post-WTO periods, which was mainly due to unfavourable climatic conditions and a fall in prices to prove non-remunerative to the farming community during the post-WTO period.

The growth rates of production of pulses were very poor in the pre-WTO period. It increased at the rate of 0.01 per cent per annum each for gram and other pulses, whereas, the production of arhar registered zero growth during the pre-WTO period, while in the post-WTO period, except gram, all the other pulses crops have registered more than 1 per cent growth rate. The arhar production has increased at the rate of 1.00 per cent per annum and the growth rates of production of other pulses have increased at the highest rate of 1.01 per cent per annum, which was mainly due to significant increase in productivity. The production of gram registered the lowest growth rate of 0.99 per cent per annum during the post-WTO period. Thus, it is obvious that the productivity is the sole contributor to increase in production of pulses during the post-WTO period in India.

With regard to the growth rates of area under oil seed crops cultivation in the pre-WTO period, except two crops, all the other crops have registered marginal growth rates only. Among them, sunflower has increased at the rate of 0.12 per cent per annum; rapeseed and mustard increased at the rate of 0.06 per cent per annum. In contrast, linseed and safflower have registered negative growth rates of -0.04 per cent and -0.03
per cent respectively, whereas, sesamum and niger seed registered zero growth only. This is partly due to unfavourable climatic conditions and fall in price of oil seeds.

But in the post-WTO period, except three crops, all the other crops have registered negative growth rates. Among them, in the case of safflower the area under cultivation has declined at the rate of -0.08 per cent per annum in the case of linseed and niger seed have declined at the rate of -0.05 per cent and -0.04 per cent per annum respectively. The area under groundnut, rapeseed and mustard cultivation have declined each at the rate of -0.02 per cent per annum while sesamum, castor seed and sunflower have registered zero growth. This is partly due to unfavourable weather and partly due to bulk import of edible oil from other countries at cheaper rates. As a result, the cultivation of oil seeds becomes non-remunerative to the farming community during the post-WTO period.

In the case of production of oil seeds in the pre-WTO period, except linseed, all the crops have recorded positive growth rates but very little. Sunflower production increased at the rate of 0.19 per cent per annum, castor seed and safflower production increased at the rate of each 0.15 per cent per annum and rapeseed and mustard production increased at the rate of 0.09 per cent per annum. The production of groundnut and niger seed registered the lowest growth rate at the rate of 0.01 per cent per annum each. Thus, it can be said that during the pre-WTO period, the growth rates of area under oil seeds cultivation was very poor. This is partly due to unfavourable weather and partly due to fall in prices proving non-remunerative to the farming community.

But in the post-WTO period, all the oil seeds recorded positive growth rates. Sesamum production increased at the rate of 1.02 per cent, which was the highest growth rate among the oil seeds. Groundnut, rapeseed and mustard production increased at the rate of 1.01 per cent and 1 per cent respectively. The growth rate of sunflower production increased at
the rate of 0.98 per cent per annum, castor seed and safflower production increased each at the rate of 0.97 per cent per annum. The point that needs to be mentioned here is that in the case of all the oil seeds production registered significant growth rates in spite the area under cultivation declining significantly during the post-WTO period. Thus, it is obvious that during the post-WTO period, the increase in productivity of oil seeds was responsible for the increase in production of oil seeds.

It is found that the growth rates of area under commercial crops cultivation in the pre-WTO period, except jute and mesta, all the other crops have registered positive growth rates but very little. Coconut area under cultivation increased at the rate of 0.04 per cent per annum. Sugarcane area under cultivation increased at the rate of 0.03 per cent. Cotton tobacco and cashew nut area under cultivation have increased each at the rate of 0.01 per cent per annum during the pre-WTO period. However, in the post-WTO period, cotton, mesta and tobacco area under cultivation registered negative growth rates i.e. at the rate of -0.01 per cent, -0.03 per cent and -0.03 per cent respectively. Cashew nut and coconuts area under cultivation increased at the rate of 0.02 per cent and 0.01 per cent respectively.

As for the production of commercial crops, during the pre-WTO period, except mesta, all the other crops have registered positive but small growth rates. Coconuts production increased at the rate of 0.08 per cent, which was the highest growth rate among the commercial crops. The cotton production has increased at the rate of 0.06 per cent, cashew nuts production increased at the rate 0.05 per cent, sugarcane and tobacco production increased at the rate of 0.04 per cent per annum. In contrast, jute production registered zero growth.

But, in the post-WTO period, all the commercial crops have registered positive growth rates. Cashew nut production increased at the rate of 1.03 per cent per annum, which was the highest growth rate among the commercial crops. Jute production increased at the rate of 1.02 per cent
and cotton production increased at the rate of 1 per cent per annum. In the case of another three crops, production registered almost 1 per cent growth rate, that is, coconuts production increased at the rate of 0.99 per cent, mesta and sugarcane production increased each at the rate of 0.98 per cent per annum. The point that needs to be highlighted here is that all the commercial crops production increased significantly in spite of the area under cultivation declining considerably, which was mainly due to significant increase in productivity during the post-WTO period.

The growth rates of area under plantation crops cultivation in the pre-WTO period, except cardamom, all the other crops have registered positive growth rates but very limited. The area under pepper cultivation increased at the rate of 0.05 per cent per annum, the natural rubber area increased at the rate of 0.04 per cent and the area under coffee cultivation increased at the rate of 0.02 per cent per annum. The area under tea cultivation registered the lowest growth rate i.e. at the rate of 0.01 per cent. Thus, it is obvious that during the pre-WTO period, the growth rates of plantation crops were positive but very poor.

However, in the post-WTO period, the area under tea and cardamom cultivation registered zero growth. This is partly due to fall in prices in the international market of Indian tea and cardamom. The area under pepper cultivation increased at the rate of 0.03 per cent and the area under coffee and natural rubber cultivation increased each at the rate of 0.01 per cent per annum.

The growth rates of production of plantation crops in the pre-WTO period, recorded positive growth rates, but the rate of growth was very minimum. The production of natural rubber has increased at the rate of 0.10 per cent per annum, cardamom production has increased at the rate of 0.09 per cent and the pepper production has increased at the rate 0.06 per cent per annum. The production of tea registered the lowest growth rate i.e. at the rate of 0.02 per cent per annum.
On the contrary, in the post-WTO period, the growth rates of all the plantation crops production growth rates were positive and significant this was mainly due to significant increase in productivity. Among them, cardamom production increased at the rate of 1.05 per cent per annum, natural rubber production increased at the rate of 1.04 per cent per annum. The production of tea registered the lowest growth rate in the post-WTO period also, i.e., at the rate of 1.01 per cent per annum. Thus, it can be concluded that during the post-WTO period, the increase in productivity was the sole component for increasing the production of plantation crops.

The growth rates of area under vegetable crops cultivation were very low for both the pre- and the post-WTO periods. In the pre-WTO period, the growth rates of vegetable crops, onions and garlic area under cultivation increased at the rate of 0.04 per cent per annum. Turmeric and potatoes area under cultivation increased each at the rate of 0.03 per cent per annum. The area under chillies cultivation registered the lowest growth rate i.e. at the rate of 0.01 per cent per annum.

However, in the post-WTO period, the growth rate of chillies registered a negative growth rate i.e. at the rate of -0.02 per cent per annum. Onions area under cultivation increased at the rate of 0.04 per cent per annum and ginger registered 0.03 per cent growth rate in the post-WTO period. In contrast, garlic recorded zero growth during the post-WTO period. This is partly due to unfavourable weather and partly due to fall in prices in the domestic market.

The study also found that the growth rates of production of vegetable crops have registered very little growth during the pre-WTO period. Turmeric and garlic production have increased each at the rate of 0.07 per cent per annum. The productions of potatoes, onions and ginger have increased each at the rate of 0.05 per cent per annum. The production of chillies registered the lowest growth rate i.e. at the rate of 0.01 per cent per annum.
But in the post-WTO period, the growth rates of vegetable crops production were positive and significant. Onions production increased at the highest growth rate of 1.06 per cent per annum; ginger production increased at the rate of 1.04 per cent per annum. The production of chillies and garlic registered the lowest growth rates i.e., at the rate of 1 per cent each. The point that needs to be mentioned here is that the production of all the vegetables registered significant growth in spite of the area under vegetables cultivation has not increased remarkably during the post-WTO period.

9.2.2 WTO and crop diversification

The total area under food grains cultivation has declined moderately from 63.75 per cent in 1994-95 to 60.29 per cent in 2004-05. It declined by 1606 thousand hectares from 123306 thousand hectares in 1994-95 to 121700 thousand hectares in 2004-05. This decline was mainly caused by the decline in the area under paddy, bajra and ragi cultivation.

It is also observed that among food grains, a major change was the decrease in the area under paddy, jowar, bajra and ragi and increase in area under maize and wheat. The total area under pulses cultivation increased from 11.84 per cent in 1994-95 to 14.63 per cent in 2004-05, denoting a 23.56 per cent increase. Among pulses, other pulses made rapid strides as the area increased 51.89 per cent.

A major set back occurred in the case of total area under oilseeds which decreased during 2004-05 as compared to 1994-95. The total area under oilseeds decreased from 11.29 per cent in 1994-95 to 9.43 per cent in 2004-05, denoting a decrease of 16.47 per cent.

The study also observed that among the oilseeds crops, the area under safflower recorded very high decrease, which was 53.54 per cent, groundnut decreased by 20.68 per cent and niger seed lost its area by 27.39 per cent.
The study also observed that the total area under commercial crops gained importance and increased sizably. It increased from 14784 thousand hectares in 1994-95 to 16108 thousand hectares in 2004-05, which marks an increase of 8.96 per cent.

The study also observed that among the commercial crops, the area under cashew nut increased by 35.18 per cent, coconuts area increased by 15.47 per cent and the area under sugarcane increased by 6.78 per cent during the study period.

A favourable shift in area under plantation crops cultivation was observed during 2004-05 as compared to 1994-95. The total area under plantation crops slightly increased to 1676 thousand hectares in 2004-05 from 1500 thousand hectares in 1994-95, which marks an increase of 11.73 per cent.

The study also observed that among plantation crops, the area under coffee increased by 24.00 per cent and pepper area increased by 23.96 per cent during the study period.

A major favourable change was occurred regarding the area under vegetables during 2004-05 as compared to 1994-95. The share of area under vegetables to total cropped area increased from 2.33 per cent in 1994-95 to 3.92 per cent in 2004-05, implying 68.24 per cent increase. The study also observed that among vegetables, the area under cabbage increased by 1047.95 per cent, onions area increased by 53.21 per cent and the area under potato has increased by 33.55 per cent respectively.

A major favourable change also occurred in the case of the area under horticultural crops during 2004-05 as compared to the 1994-95. The total cropped area under horticultural crops increased from 4594 thousand hectares in 1994-95 to 5904 thousand hectares in 2004-05, implying a 28.52
per cent increase. The share of area under horticultural crops to total cropped area increased from 2.38 per cent in 1994-95 to 2.92 per cent 2004-05, marking an increase of 22.69 per cent.

The study also observed that, among horticultural crops, the area under grapes increased by 67.39 per cent and the area mango has increased by 30.33 per cent.

9.2.3 Variability and trends in agricultural prices of principal crops.

The farm harvest price of paddy increased at a faster rate during the pre-WTO period, that is, 2 fold, indicating an increase of 114.44 per cent during the pre-WTO period, as compared to 41.32 per cent during the post-WTO period. The point that needs to be highlighted is that the price of paddy did not increase significantly during the post-WTO period when compared with the pre-WTO period. At the same time, the price of all the inputs went up several times. As a result, the paddy cultivating farmers were not able to get remunerative prices for their produce and thereby lost their income through wide price fluctuations. This is mainly because of the WTO’s polices on the Indian agriculture during the WTO regime.

A major decline was observed in the case of the price of jowar, whose growth fell to 11.84 per cent during the post-WTO period from 146.36 per cent in the pre-WTO period. Ultimately, the poor farmers’ income declined drastically, which is mainly due to the impact of the WTO’s polices on Indian agriculture in general and the price of jowar in particular during the post-WTO period.

As for the price of bajra, it increased at a faster growth that is 2.14 fold, marking an increase of 114.36 per cent during the pre-WTO period, as compared to the post-WTO period when it increased only 24.63 per cent, which indicates a negative impact was realized on the price of bajra and this is mainly because of the impact of the WTO’s trade policies on Indian agriculture.
The price of maize experienced a rapid increase in the pre-WTO period, as compared to the post-WTO period. It increased by 2.19 fold, denoting an increase of 119.74 per cent during the pre-WTO period. But in the post-WTO period, it increased only 32.64 per cent. It needs to be mentioned here that the price of all the inputs, i.e. seeds, fertilizers, implements and operational expenses increased significantly during the same period. As a result, the poor farmers were not able to get remunerative prices for their agricultural produce and this was also one of the reasons for their suicide deaths throughout India during the WTO regime.

A major setback was experienced in the case of the price of ragi during the post-WTO period as compared to the pre-WTO period. The growth of farm harvest price of ragi declined to 10.98 per cent during the post-WTO period from 119.80 per cent in the pre-WTO period. The growth rate also declined from 0.10 per cent to 0.02 per cent per annum, which shows that a negative impact was realized strongly on the price of ragi during the WTO regime.

The price of wheat experienced a rapid decline in the post-WTO period, as compared to the pre-WTO period. It declined to 1.5 fold, indicating an increase of 49.93 per cent from 2.15 fold, denoting an increase of 115.52 per cent during the pre-WTO period. This is mainly due to surplus of production, which leads to increased supply and thereby lesser price in the domestic market on the one hand and the free flow of imported wheat from other countries in accordance with the quantitative restrictions of the WTO on the other hand. As a result, the price of wheat did not increase significantly and thereby the poor wheat cultivating farmers were lost their income through wide price fluctuations during the post-WTO period.
The price of barely increased at a slow rate in the post-WTO period as compared to the pre-WTO period. It increased 2.3 fold, marking an increase of 128.02 per cent during the pre-WTO period. However, in the post-WTO period, it increased only 47.58 per cent. The compound growth rate of barely was also comparatively lower i.e., 0.03 per cent only, which indicates that a negative impact was realized on the price of barely during the WTO regime.

A major decrease was experienced in case of the price of gram during the post-WTO period as compared to the pre-WTO period. The price of gram declined to 54.92 per cent in the post-WTO period from 147.04 per cent during the pre-WTO period. The point that needs to be mentioned here is that the price of gram has not increased sufficiently to cover the cost of production of gram in the post-WTO period. As a result, the area under gram cultivation has become negative, that is -0.02 per cent and thereby the poor dry crop (gram) cultivating farmers were not able to get remunerative prices for their produce. This is mainly due to the influence of the WTO’s policies on Indian agriculture in general and the price of gram in particular during the post-WTO period.

A major set back occurred in the case of the price of arhar during the post-WTO period as compared to the pre-WTO period. The growth of arhar price declined to 16.31 per cent during the post-WTO period from 239.61 per cent in the pre-WTO period. This indicates that a strong negative impact was realized on the price of arhar. As a result, the growth of area under arhar cultivation was zero, and though the production increased to the minimum extent, that was, mainly due to the increase in productivity and thereby the income distribution to the farmers low through wider price fluctuation. It also impeded the economic growth of the country by forcing it to import huge quantities of pulses from other countries and thereby losing her valuable foreign exchange earnings for consumption purposes during the WTO regime.
A major decrease was experienced in the case of the price of groundnut during the post-WTO period as compared to the pre-WTO period. The growth of groundnut price declined to 33.95 per cent during the post-WTO period from 172.32 per cent during the pre-WTO period. This shows that the change in price of groundnut was very limited during the post-WTO period, which means a strong negative impact was realized in the price of groundnut during the WTO regime.

The price of rapeseed and mustard increased at a slower rate during the post-WTO period as compared to the pre-WTO period. It declined to just 45.06 per cent in the post-WTO period from 141.23 per cent during the pre-WTO period. This means that the price of rapeseed and mustard declined almost 1 fold during the post-WTO period.

A major set back occurred to the price of linseed, whose growth fell to 35.07 per cent during the post-WTO period from 162.37 per cent in the pre-WTO period. The interesting point that needs to be mentioned here is that the price of linseed has not increased on par with the pre-WTO period, which is mainly because of the influence of the WTO’s policies on Indian agriculture in general and the price of linseed in particular during the post-WTO period.

In the case of castor seed the price increased at a fast rate in both periods (but less rapid in the post-WTO period as compared to the pre-WTO period). The increase in price of castor seed declined to 90.65 per cent in the post-WTO period from 192.72 per cent during the pre-WTO period, which implies that the absolute increase in price was due to inflationary pressure and there was no real hike in price. This is mainly due to the impact of WTO’s policies on Indian agriculture during the WTO regime.
The price of sugar increased at a slower rate during the post-WTO period as compared to the pre-WTO period. The sugar price declined to 50.41 per cent in the post-WTO period from 116.69 per cent during the pre-WTO period. This is partly due to fall in price in the international market and partly due to increased supply in the domestic market, which reflected on the Indian economy also during the WTO regime.

A major set back was experienced in the case of the price of tobacco during the post-WTO period as compared to the pre-WTO period. The price of tobacco declined to 27.55 per cent during the post-WTO period from 96.87 per cent during the pre-WTO period. The point that needs to be mentioned here is that even for commercial crops like the tobacco price has not increased significantly. This reflects the recession in prices of agricultural commodities in the international market and in the Indian economy also. As a result, not only the food crops cultivating farmers lost their income but also the commercial crops cultivating farmers too. This shows that a negative impact was realized in the prices of agricultural commodities on the Indian economy during post-WTO period.

A major set back also occurred to the price of cotton during the post-WTO period as compared to the pre-WTO period. Its price growth declined to 28.51 per cent in the post-WTO period from 267.42 per cent during the pre-WTO period. This shows that the price of cotton has not increased remarkably in the post-WTO period, when compared with the pre-WTO decade, which is mainly due to the low price that prevailed in the cotton cultivating countries, especially in China, which was reflected on the Indian economy too. As a result, the cotton cultivators lost their income and thereby they were not able to repay their loans taken from the money lenders. The interesting point that needs to be mentioned here is that the Indian cotton cultivating farmers bought the cotton seeds (e.g. B.T. Cotton) from MNCs (i.e. Monsanto) at very high prices with the hope of high
productivity. But, unfortunately, there was no yield from the cotton which they cultivated. Ultimately there was no other go except committing suicide and that happened (mass suicide death) throughout the country during the WTO regime.

Negative growth was experienced in the case of the price of jute during the post-WTO period as compared to the pre-WTO period.

It is observed that during the pre-WTO period, the price of cotton registered the highest growth rate of 0.13 per cent per annum, followed by arhar, jowar, gram, and chillies which registered each 0.12 per cent per annum. In the post-WTO period, all the crops registered positive growth rates except jute. Castor seed registered the highest growth rate of 0.09 per cent per annum, followed by gram which registered 0.06 per cent per annum.

It is found that during the Pre-WTO period, the price of cotton registered the highest degree of variation that is, 40.18 per cent, followed by chillies (38.77 per cent), jowar (37.07 per cent), arhar (35.33 per cent) and Barely 35.11 per cent. This means that the prices of these crops exhibited the highest dynamism. The lowest quantum of variation was recorded by the price of potatoes (20.30 per cent). This implies that the change in the price has been consistent during the Pre-WTO period.

9.2.4 Rate of growth and composition of agricultural exports and Imports during the pre-WTO and post-WTO periods

A major set back occurred in case of the quantity of the tea export during the post-WTO period as compared to the pre-WTO period. The tea export growth declined to 15.72 per cent (i.e. the average export of tea was 179.48 thousand tonnes), during the Post-WTO period, from 26.62 per cent (i.e. on an average 189.69 thousand tonnes were exported), during the Pre-
WTO period. This means that there was no positive impact on the quantity of tea export during the WTO regime.

A major setback was experienced in the case of export earnings of tea during the Post-WTO period as compared to the Pre-WTO period. The export earnings of tea declined to 1.38 per cent during the Post-WTO period from 55.76 per cent during the Pre-WTO period. This is mainly due to fall in price of tea in the international market during the WTO regime.

A major decline was observed in the case of the quantity of coffee export during the Post-WTO period as compared to the Pre-WTO period. It declined to 7.33 per cent from 29.90 per cent during the pre-WTO study period. This was partly due to stiff competition from other developing countries in the international market and partly due to fall in price in the international market, which implies that there was no positive impact of WTO’s policies on coffee export during the WTO regime.

A negative growth was observed in the case of the export value of coffee during the post-WTO period as compared to the pre-WTO period. It declined negatively to -41.20 per cent in the post-WTO period from 285.11 per cent during the pre-WTO period. It implies that though the quantity of coffee export increased considerably, but the export earnings of coffee declined by 41.20 per cent, which is mainly due to fall in price in the international market during the WTO regime.

The quantity of rice export increased at a faster rate during the post-WTO period as compared to the pre-WTO period. The per annum rice export stood at 507.52 thousand tonnes during the pre-WTO period. Whereas, in the post-WTO period, the average quantity of rice export per annum increased to 3367.15 thousand tonnes. This means that the staple food item of the common man, that is, rice has been exported tremendously, naturally allowing only lesser amount of food grains available for domestic
consumption. This indicates that the common man’s food security has been affected severely during the WTO regime.

The export earnings of rice experienced a rapid increase in the Pre-WTO period as compared to the Post-WTO period. It increased by 6.15 fold, denoting an increase of 615.20 per cent during the Pre-WTO period. However, in the Post-WTO period, it increased only 37.49 per cent. It implies that though the quantity of rice export increased significantly, but its export earnings did not increase significantly, which is mainly due to unfavourable price that prevailed in the international market during the WTO regime.

The quantity of wheat export increased at a faster rate during the Post-WTO period as compared to the during the pre-WTO period. It increased from 65.85 per cent during the pre-WTO period, to 3.17 fold, indicating an increase of 217.69 per cent during the post-WTO period. This indicates that there was a remarkable increase in the export of wheat, which means that there was a deprivation of food to the common man to a significant extent during the WTO’s trade policy regime.

The export earnings of wheat experienced a rapid increase during the post-WTO period as compared to the pre-WTO period. It increased to 298.03 per cent in the post-WTO period from an increase of 19.07 per cent during the pre-WTO period. This indicates that the export earnings of wheat increased tremendously during the WTO trade policy regime.

The quantity of cotton raw export experienced a rapid increase in the post-WTO period as compared to the pre-WTO period. That is, it increased 25 fold, implying an increase of 2503.02 per cent in the post-WTO period, while it increased only 1.96 fold, denoting an increase of 96.35 per cent in the pre-WTO period.

The export earnings of cotton raw increased at a faster rate in both periods, but more in the post-WTO period as compared to the pre-WTO period. The quantity of tobacco export increased at faster rate i.e., 1.02 per
cent per annum during the post-WTO period as compared to the pre-WTO period, when the growth rate was only 0.04 per cent per annum.

The export earnings of tobacco increased at a faster rate during the Post-WTO period as compared to the Pre-WTO period. It increased from 86.03 per cent in the Pre-WTO period to 180.79 per cent during the Post-WTO period. This indicates that the export value of tobacco increased significantly, which is mainly due to remunerative prices that prevailed in the international market during the WTO regime.

A major decreased was experienced in the case of the export of cashew nuts during the post-WTO period as compared to the pre-WTO period. The quantity of cashew nut exports declined to 66.75 per cent during the post-WTO period from 116.89 per cent during the pre-WTO period, which means that though the quantity of cashew kernels export increased but the rate of increase was lesser during the WTO regime.

A major set back occurred in the case of the export earnings of cashew kernels during the post-WTO period as compared to the pre-WTO period. It is export growth fell to 101.19 per cent during the post-WTO period from 5.5 fold, indicating an increase of 454.01 per cent during the pre-WTO period.

The quantity of spices export increased in both periods (but a little more in the post-WTO period as compared to the pre-WTO period). It increased by 1.74 fold, denoting an increase of 74.10 per cent during the pre-WTO period. However, it increased a little more, that is, 1.78 fold, indicating an increase of 78.92 per cent, during the post-WTO period, which indicates that there was no remarkable increase in the export of spices during the WTO trade policy regime.

The export earnings of spices also increased at a faster rate in both periods but a little more in the Post-WTO period as compared to the Pre-WTO period. The export earnings of spices increased by 2.2 fold, marking an increase of 120.38 per cent during the Pre-WTO period. Whereas, in the
Post-WTO period, it increased a little more, that is, 2.4 fold, denoting an increase of 136.94 per cent. This shows that there was no remarkable increase in the export earnings of spices during the WTO trade policy regime.

A major setback occurred in respect of the quantity of oil meals export, whose growth was fell to-16.22 per cent in the post-WTO period compared to an increase of 414.36 per cent in the pre-WTO period.

A major setback also occurred regarding the export earnings of oils meals during the post-WTO period as compared to the pre-WTO period. Its export growth fell to just 35.30 per cent during the post-WTO period compared to an increase of 1241.77 per cent during the pre-WTO period. This indicates that there was no remarkable increase, which means that a strong negative impact was realized on the export earnings of oil meals during the WTO trade policy regime.

The export earning of fruits and vegetables increased at a faster rate during the post-WTO period. It increased by 3.3 fold, indicating an increase of 226.69 per cent as compared to the pre-WTO period i.e., when the increase was 9.37 per cent only, which implies that the export earnings increased significantly during the WTO trade policy regime. There was considerable set back in the export earnings of processed fruits and miscellaneous processed items, whose growth fell to 39.07 per cent in the post-WTO period from 107.50 per cent during the pre-WTO period, which implies that the export earnings increase was very minimal during the WTO trade policy regime.

A major decrease was experienced in the case of the quantity of marine products export during the post-WTO period as compared to the pre-WTO period. This indicates that there was no remarkable increase when compared with the pre-WTO period and this shows that a strong negative impact was realized on the export of marine products during the WTO trade policy regime.
A major set back also occurred to the export earnings of marine products during the post-WTO period, whose growth fell to 1.91 fold, denoting an increase of 91.33 per cent compared to an increase of 563.25 per cent in the pre-WTO period. The export earnings of meat and meat preparations increased at a slower rate during the post-WTO period as compared to the pre-WTO period. It growth declined to 203.87 per cent during the post-WTO period from 359.11 per cent during the pre-WTO period.

A major set back occurred in the case of the export earnings of agricultural and allied products during the post-WTO period as compared to the pre-WTO period. The growth of export earnings fell to 1.87 fold, marking an increase of 87.11 per cent during the post-WTO period from 5 fold, indicating an increase of 428.80 per cent during the pre-WTO period. This indicates that though the absolute export earnings has increased, but the rate of increase was very poor when compared with the pre-WTO period, which means that the export value of agriculture and allied products did not increase significantly, which shows that a strong negative impact was realized on the Indian agricultural exports during the WTO trade policy regime.

The total exports earnings of the country increased at a faster growth i.e., 7.58 fold, indicating an increase of 658.85 per cent during the pre-WTO period, as compared to the export earnings of agriculture and allied products which increased by 5 fold, marking an increase of 428.80 per cent in the same period. This indicates that both the total exports of the country and the agriculture and allied products exports increased significantly, but the rate of increase in agriculture and allied products exports was much lesser over total exports of the country during the pre-WTO period.

A major set back occurred in the case of the export earnings of agriculture and allied products as compared to the exports earnings of the
total exports of the country during the post-WTO period. The agriculture and allied products exports increased only 1.87 fold, indicating an increase of 87.11 per cent, whereas, the total exports of the country increased by 3.53 fold, denoting an increase of 252.92 per cent. This implies that there was remarkable increase in the total exports of the country over the agriculture and allied products exports during the post-WTO period, which means that there was no favourable international trade especially the agricultural exports during the WTO regime.

It is found that the share of food items exports increased significantly from 6.47 per cent in the pre-WTO period to 20.35 per cent during post-WTO period. This implies that the food items exports increased significantly, which means that the staple food items of the common man i.e. rice and wheat, were exported, naturally allowing only lesser quantity of food grains available in the domestic market for consumption. This indicates that the common man’s food security was affected severely during the WTO rate policy regime.

The analysis of the composition of agricultural exports reveals that India’s exports mainly consisted of food items, marine products, plantation products, commercial products and oil meals, while other products, namely, meat and meat preparations, fruits and vegetables, processed fruits, and sugar and mollases contributed very little to total exports during the study period.

The study further brought out the major structural change in India’s agricultural exports during the post-WTO period. The exports of food items, plantation products, commercial products, marine products and oil meals accounted for a lion’s share (around 70 per cent) of India’s agricultural exports. Food items experienced rapid increase in exports during the post-WTO period. It increased from 6.47 per cent in the pre-WTO period to 20.35 per cent during the post-WTO period.
The marine products export increased in both periods but a little more in the post-WTO period. That is, it increased from 15.55 per cent during the pre-WTO period to 17.30 per cent in the post-WTO period. Exports of plantation products and commercial products experienced relatively smaller variations in their shares. A major favorable change was experienced in the case of exports of fruits, vegetables and processed fruits during the post-WTO period. It increased from 3.73 per cent to 8.35 per cent during the same period. Sugar and molasses, meat and meat preparations and other agricultural products exports made a lesser contribution towards the India’s agricultural exports during the post-WTO period.

9.3 Suggestions

1. The study found that the impact of WTO’s policies on Indian agriculture was adverse and severe in the Post-WTO period. This created a difficult situation in the areas of agricultural production of the country and the food security of the common man in India. Hence, creating awareness and increasing the farmers’ knowledge of these impacts through mass media, discussing issues with farmers will help the Indian agricultural sector. In this direction, developing a campaign about these impacts of the WTO’s policies and consolidating the farming community along with technocrats and administrators to fight against the WTO’s policies at the national and international level is necessary.

2. There is enough empirical evidence as indicated in Chapter seven that, the farm harvest prices of the principal crops were at much lower than the cost incurred by the farmers. This has been creating several distortions which would result in change in revenue to the producers, and conditions in which it is becoming increasingly difficult to continue farming operations. In this direction, the government should periodically review the contributing factors for the declining prices of the principal crops and
ensure that a minimum harvest prices should be fixed for the principal products, so that the small and marginal farmers’ real income will be assured and remunerative.

3. It is also suggested that the government should control the free flow of imports of agricultural products from other countries through imposing high import tariff along with special customs duties so that the supply will be brought under control and thereby streamlining the prices of the products. Further, the procurement of agricultural products in the domestic market by the MNCs through online should be stopped so that the interests of the common man will be protected in the country.

4. The findings of the study revealed that the exports of food items had increased at a faster rate during the Post-WTO regime. But at the same time, the diversification of cropping pattern to yield larger incomes to the farmers and made it more export oriented towards horticultural and commercial crops during the same period. This created a serious food insecurity of the common man. As a result, the common man’s access to food is being deprived in the name of exports. Hence, the government should ascertain the situation and impose ban on exports of food items and encourage the exports other exportable non-food grains commodities to international markets, so that it is able to sustain the exports also.

5. Agricultural exports have declined at a faster rate after the advent of the WTO. In contrast, agricultural imports have increased at a still faster rate. As a result the trade balance has continued to be unfavourable. It is suggested that the government should impose stringent conditions on agricultural imports, so that valuable foreign exchange will be preserved and made available for other productive purposes.

6. Farmers have been reducing the relative share of oilseeds crops in their cropping pattern over the years. Further, many of the oilseeds crops are non-responsive to own price. Thus, the major constraint for decreasing
of oilseeds crops may be the un-remunerative price structure in relation to the cost of cultivation and other crops. Thus a situation can be altered by fixing a remunerative price for oilseeds crops.

7. With the advent of the WTO, the commercial crops, horticultural crops and vegetables showed a significant increase in the area as well as production. This is a welcome change. It is suggested that, in order to make these products potential exportable items, the government should take appropriate steps through advanced technology, high yielding varieties of seeds, better marketing arrangements and by improving quality standards to meet international market specifications.

9.4 Conclusion

First of all, the World Trade Organisation’s policies have had a negative impact on the Indian Economy particularly on the Indian agriculture. For instance the area under food grains has decreased at a faster rate during the Post-WTO period. This would create severe food insecurity for the common man in the country. The fast growing population has to be fed with sufficient food grains but the growing population has already occupied a considerable proportion of cultivable land for residential purpose. Under these critical circumstances, shifting of cultivation from food crops to non-food crops would be perilous for the food security of the common man in the country. On the whole, after the advent of the World Trade Organization’s, the Indian agriculture has been experiencing worst times in all respects.

Secondly, the relative prices of agricultural commodities have been decreasing at a much faster rate during the Post-WTO period due to fall in the international market prices. But the cost of cultivation has been increasing at faster rate, thereby causing great hardships to the farming community, especially small and marginal producers.
Thirdly, agricultural exports have been decreasing more rapidly during the post-WTO period. The share of the agricultural sector to the national GDP and also the share of agricultural exports in total exports have declined at a faster rate during the WTO regime. Though exports are a national endeavour, it should not be undertaken at the cost of the common man’s food security. Hence, suitable policy measures are needed to coordinate production, marketing and consumption of agricultural products.

**Area for further research**

1. A comparative study can be undertaken with other developing countries.

2. Similar studies may be undertaken for industrial products in India.

3. Implications of WTO on service sectors may also undertake.