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Trade competitiveness of cotton crop of Andhra Pradesh

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Abstract
Andhra Pradesh is an agriculturally important state in India. It is the second largest producer of cotton. There is sufficient evidence to show that India was having a flourishing export trade in cotton goods as early as 569-525 B.C. Cotton fabrics dominated the world trade until the 18th century when Industrial Revolution affected the export of Indian fabrics. Thus, it is presumed that India has been the centre of cotton industry from the earliest times and it is considered that India is not only the birth place of cotton but also of the cotton industry. Thus, if we consider the triple aspects of cultivation, manufacture and export trade, cotton represents easily the largest and the most highly organized industry of India.
International trade promotes the economic development of a country. It widens the market and increases the inducement to invest income and saving through more efficient allocation. India has comparative advantage in agriculture, so that there is considerable scope for raising farm income and employment by stepping up agro-based exports. In view of this, an attempt has been made to study the trade competitiveness of the cotton crop in Andhra Pradesh in the wake of trade liberalization and implementation of WTO agreements.

Keywords: Agriculture, Cotton, Production, Growth rate, Trade and WTO

Introduction
Cotton is among the most important non–food crops that occupies a significant position both – from agricultural and manufacturing sector point of view. It is the major source of one of the basic human need – 'clothing', apart from other fibre sources viz., jute, silk and synthetic. Innumerable commodities are made from cotton.
The cultivation of cotton in India dates back to pre-historic times. Until a few years ago, our sources of information regarding the antiquity of cotton were scanty references in religious books, which left it uncertain whether India or Egypt was the first country to grow and manufacture cotton on a large scale.
There is sufficient evidence to show that India was having a flourishing export trade in cotton goods as early as 569-525 B.C. Cotton fabrics dominated the world trade until the 18th century when Industrial Revolution affected the export of Indian fabrics. Thus, it is presumed that India has been the centre of cotton industry from the earliest times and it is considered that India is not only the birth place of cotton but also of the cotton industry. Thus, if we consider the triple aspects of cultivation, manufacture and export trade, cotton represents easily the largest and the most highly organized industry of India.

Global Scenario
The five largest cotton producing countries in the world are China, USA, India, Pakistan and Uzbekistan, which together account for about 70 per cent of world area and production. It is the single most important textile fibre in the world accounting for over 40 per cent of the total world fibre production. United States, China and India together provide over half the world's production. The world's largest producing and consuming countries are China, United States, India and Pakistan.
Agriculture is an important sector of India's economy as it accounts for 26 per cent of GDP and about 15 per cent of total exports. The exports are mostly useful for earning more foreign exchange. Growth in agro exports not only brings an additional foreign exchange for the country, but also benefits a large number of people involved in the production, processing and exports of such products. In India, fibre crops occupy major place after food crops. The major fibre crops are cotton, jute and mesta. All these together produces 8,931.6 million bales (1 bale = 170kg) in an area of 2, 15, 594 million hectares. Among these fibre crops cotton is more important and ranks second to food-grains.

India has been one of the important cotton producers in the world and occupies first position in terms of area under cotton. However, because of poor yields, India ranks third in terms of production after China and USA and second largest consumer in the world. Cotton accounts for more than 75 per cent of India's annual fibre consumption in the spinning mills and over 58 per cent of its annual fibre consumption in the textile sector.

Raw cotton is an important foreign exchange earner. A considerable portion of the cotton textiles produced in the country is exported mainly to the industrialized world. The export of cotton bales earns a sizeable foreign currency. India is the world largest exporters of cotton yearn with one fourth share of world market. India is also removing its own import restrictions in order to meet its WTO obligations, and some changes are likely for textile and cotton production in both India and the rest of the world due to wave of unilateral and multilateral liberalization overturns long-established patterns of production and trade.

Cotton Production and Trade

One of the most important developments of the past decade has been China's rise as the largest importer of cotton, accounting for 36 percent of world cotton imports during 2012-13. Still, China's imports could decline over the next few years if the government decides to release some of its large national reserve. Bangladesh, Turkey, Indonesia and Vietnam are the next largest importers, with a combined share of 30 percent expected in 2012-13, up from 28 percent five years ago due to increasing consumption. In contrast, Pakistan's share has declined from 10 percent to 2 percent in 2011-12 due to reduced consumption. But it has rised to 5 percent in 2012-13.

The Largest exporter of cotton over the last five years has been the United States, accounting for around one third of global cotton trade. India was the second largest exporter in 2007-08 with 19 percent of global trade, but its share could drop to 10 percent. Central Asia's share is also down (16 percent to 10 percent) due to reduced production and increased consumption. Over the last decade, the destination of cotton exports has switched from Europe to Asia and in particular to China. The previous relative advantage of African countries regarding freight time and cost, compared to exporters such as India, Central Africa is one of the farthest providers of cotton to Asia. However, intermediate export locations such as Malaysia have recently developed.

The infrastructure facilities required to improve the productivity and marketing should be improved to boost the exports of the country. Development of new technologies with high productive potentials and comparative advantage both in production and processing sectors are required.

The objectives of the present study are

1. To examine the trends in area, production and yield of cotton crop,
2. To study the direction of trade and structural change in exports of cotton crop, and
3. To analyze the global competitiveness of cotton crop of Andhra Pradesh.

Data and Methodology

The secondary data relating to area, yield and production of cotton crop was collected from publications of Center for Monitoring Indian Economy (CMIE) Pvt. Ltd., Mumbai. Data on destination wise exports in terms of quantity and value were obtained from "Monthly statistics of foreign trade of India", published by Directorate General Commercial Intelligence and Statistics. Information on prices cotton crop and other agricultural statistics were compiled from various issues of Season and Crop report and Statistical abstract of A.P. published by Directorate of Economics and Statistics, Hyderabad.

In order to assess integration of markets in the state with international markets, monthly wholesale prices were collected for the period from 1986-87 to 2009-10. The markets selected for the cotton crop are Guntur and Liverpool as local and international markets respectively. Destination wise exports were collected to study the structural change in exports. The major importing countries considered for analysis of trade in cotton, the importing countries selected were China, Bangladesh, Belgium, Italy and Japan.

In the present paper, the trade competitiveness of cotton was analyzed in Andhra Pradesh. The growth rates of area, yield and production of cotton are calculated for Andhra Pradesh.

Three kinds of measures, Viz., Nominal Protection Coefficients (NPC), Effective Protection Coefficients (EPC) and Domestic Resource Cost (DRC) have been widely used to reveal trade competitiveness. The first two measures are used to find the level of protection of dis-protection and level of government intervention in different commodities. But Domestic Resource Cost (DRC) is generally used to measure the efficiency and comparative advantage in production vis-à-vis export or import of various commodities. In addition to the above three measures the Nominal Protection Coefficient on tradable Inputs (NPCI) and Subsidy Ratio to Producers (SRP) are also used to study the trade competitiveness of the crops. Trade competitiveness has been estimated for cotton crop of the state for the period 1986-87 to 2009-10.

5. Results and Discussion

5.1 Trends in Area, Production and Yield of cotton

The growth performance of area and production was almost similar in both pre-WTO and post-WTO periods. A growth rate of 4.8 percent in area of cotton was observed in pre-WTO period whereas the post-WTO period witnessed a slightly less growth rate of 3.9 percent. The performance of growth in production was impressive in both the periods as a result of improvement in area and productivity. The post-WTO period witnessed higher growth in yield than in pre-WTO period.

Table: 5.1 Growth rates of Area, Production and Yield of Cotton in A.P.

Description	R^2	CGR	t- value	Instability index (%)
Pre-WTO Period (1976-77 to 1994-95)				
Area	0.868	4.8	10.590**	28.12
Production	0.696	8.0	6.239**	46.36
Yield	0.271	3.3	2.511*	30.59
Post-WTO Period (1995-96 to 2012-13)				
Area	0.500	3.9	4.004**	33.37
Production	0.746	8.4	6.857**	61.48
Yield	0.709	4.5	6.248**	28.59
Overall Period (1976-77 to 2012-13)				
Area	0.894	4.4	17.139**	52.69
Production	0.872	7.0	15.436**	88.38
Yield	0.554	2.6	6.596**	35.35

*indicates significance at 5% level. **indicates significance at 1% level.

5.2 Direction of trade and structural change in cotton exports

Changes in direction of cotton trade showed by transitional probability matrix are presented in Table 5.2. 'Others' had high retention to the extent of 0.731 percent and fairly small transfer probability of 0.149 to Japan, 0.049 to Italy, 0.042 to China and 0.031 to Belgium. They had gained all of China and Belgium's share, 0.379 of Japan's share and 0.213 of Bangladesh's share. Italy also had a fair degree of retention of 52.9 percent. However, its share to the tune of 19.2 percent was lost to Japan, 20.1 percent to 'others' and 7.8 percent to Belgium. Bangladesh had probability retention of 0.501. It gained from Japan's market share (47.2 percent), but there was a tendency to loose its market share of 28 percent to China, 21.3 percent to 'others' and 0.7 percent to Belgium.

China, Japan and Belgium were not stable markets for Indian cotton exports. Though China had lost all its share to 'others', it gained from Bangladesh 28 percent Japan 14.9 percent and 'others' 4.2 percent share. Belgium had lost all its share to 'others' but there was a tendency to gain from the markets of Italy, Bangladesh and others.

Table: 5.2 Transition Probability matrix for cotton (1996-97 to 2009-10)

Country	China	Bangladesh	Belgium	Italy	Japan	Others
China	0.000	0.000	0.000	0.000	0.000	1.000
Bangladesh	0.280	0.501	0.007	0.000	0.000	0.213
Belgium	0.000	0.000	0.000	0.000	0.000	1.000
Italy	0.000	0.000	0.078	0.529	0.192	0.201
Japan	0.149	0.472	0.000	0.000	0.000	0.379
Others	0.042	0.000	0.031	0.049	0.149	0.731

5.3 Trade competitiveness of cotton crop

The results pertaining to various measures of trade competitiveness for cotton are presented in Table-5.3. The DRC was 0.39 in pre-WTO period and 0.26 in post-WTO period. The levels of DRC showed that import substitution by domestic production is socially desirable. The levels of SRP (-0.26 in pre-WTO period and -0.391 in post-WTO period) shows that the cotton crop in the state had not been protected. NPCI was almost same in both the periods and are less than one indicating that the input costs were lower than the world prices.

The results of trade competitiveness measures indicated that state had clear competitiveness on importable as well as exportable bases. The levels of DRCs showed that state had comparative advantage in cotton crop, which implies that imports will cost more than the domestic production. The levels of both NPC and EPC showed that the state has not protected the cotton crop or rather taxed producers. This is also evident from the levels of SRP coefficient, which are negative.

Table: 5.3 Measures of trade competitiveness of Cotton

YEAR	**NPC**	**NPCI**	**EPC**	**DRC**	**SRP**
1986-87	0.71	0.39	0.65	0.42	-0.24
1987-88	0.39	0.41	0.29	0.39	-0.31
1988-89	0.57	0.38	0.57	0.49	-0.25
1989-90	0.51	0.39	0.51	0.47	0.17
1990-91	0.33	0.43	0.38	0.31	-0.28
1991-92	0.46	0.42	0.47	0.43	-0.22
1992-93	0.46	0.38	0.51	0.39	-0.17
1993-94	0.37	0.47	0.39	0.36	-0.29
1994-95	0.36	0.46	0.33	0.29	-0.41
Average*	**0.46**	**0.41**	**0.46**	**0.39**	**-0.26**
1995-96	0.33	0.38	0.31	0.25	-0.44
1996-97	0.33	0.41	0.26	0.21	-0.53
1997-98	0.39	0.41	0.30	0.23	-0.47
1998-99	0.47	0.41	0.35	0.27	-0.40
1999-2000	0.4	0.46	0.37	0.28	-0.39
2000-01	0.4	0.42	0.34	0.27	-0.43
2001-02	0.44	0.46	0.36	0.29	-0.42
2002-03	0.46	0.33	0.43	0.26	-0.29
2003-04	0.43	0.39	0.33	0.24	-0.45
2004-05	0.4	0.42	0.30	0.30	-0.39
2005-06	0.38	0.35	0.38	0.25	-0.41
2006-07	0.41	0.39	0.27	0.22	-0.32
2007-08	0.46	0.26	0.36	0.29	-0.36
2008-09	0.53	0.30	0.31	0.21	-0.28
2009-10	0.51	0.24	0.26	0.34	-0.33
Average**	**0.42**	**0.38**	**0.33**	**0.26**	**-0.39**

*Average of 1986-87 to 1994-95 ** Average of 1995-96 to 2009-10

6. Conclusions

Agriculture forms the backbone of the Indian economy and despite concerted industrialization in the last five decades; agriculture continues to dominate the national economy. A large proportion of the cultivated area in Andhra Pradesh state is devoted to the production of its principal crops namely paddy, maize, groundnut and cotton. These crops account for 40 per cent of the cultivated area in the state. With agriculture now having been brought under the realm of GATT and the WTO, freedom of government to support agriculture sector beyond a point is limited. Production pattern will be dictated by considerations of comparative advantage of cotton crop and these needs to be studied.

The growth rates of production and area of cotton were quite impressive with 7 per cent and 4.4 per cent respectively. Growth rate of yield was also satisfactory with 2.6 per cent. The performance of area and production was almost similar in both the periods. Growth in yield was also satisfactory in post-WTO period than in pre-WTO period. Cotton is a principal commercial crop and it contributes significantly to the national economy.

The results pertaining to cotton revealed that for both the periods' cotton crop had clear cut competitive advantage. Average values of NPC and EPC were remained below one for both the periods. The levels of both NPC and EPC showed that the state has not protected the cotton crop. This is also evident from the levels of SRP coefficients.

In view of dismantling of quantitative restrictions on textile exports, India stands to gain substantially. In order to be competitive in the world market, it is imperative to ensure domestically the high quality long staple cotton, which is currently being sourced from other countries. Hence, efforts need to be directed towards the production of high quality long staple cotton, which will also overcome the present quality problems in the form of short staple and other quality problem, which are coming in the way of enhancing Indian cotton exports. Efforts should also be made to reduce the cost of production of cotton to sustain the competitive edge of Indian cotton on a long-term basis.

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