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RESEARCH ARTICLE

DOMESTIC AND EXPORT COMPETITIVENESS OF MAJOR AGRICULTURAL COMMODITIES IN ANDHRA PRADESH – A CASE STUDY

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Abstract

Introduction

Even after 50 years of Indian Independence, the present agricultural marketing system is still confronted with several loopholes and defects, thereby, leaving many number of farmers in a dilemma position whether to continue the agri-business or not. This is because, not only during the periods of adverse agricultural production, but even during bumper harvests they were not in a position to reap higher returns from the agri-business. Lack of adequate storage facilities, scientific grading facilities, processing facilities, efficient transportation facilities, poor marketing information network etc., are still old and persistent problems affecting our domestic trade. In the era of globalization and economic liberalization (1991) lack of quality consciousness on the marketed surplus, cultivating crop varieties that are not suitable for processing and importer's requirements, mounting transaction costs etc., are the major problems summed up to the day-old marketing problems, thereby, making the marketing system much more complicated. The Government's intervention in the field of agricultural marketing includes price support, co-operative marketing, establishment of regulated markets etc. Among these, regulated agricultural marketing system deserves special attention, as it played a vital role in protecting the interests of the farming community through regulating the market practices. The country's participation in the World Trade Organization (WTO) calls for strengthening this system, as the domestic market is under threat, due to severe competition from the member nations through dumping the imports. Further, the exports from the country were under check due to cost-ineffective production technologies and imposition of strict Sanitary and Phyto-Sanitary (SPS) measures by the importing countries. In this context, the study on the performance of regulated agricultural marketing system is felt appropriate by the researchers, as it critically analyses the extent of market orientation of farmers and the competitiveness of agricultural commodities both in the domestic and international markets.

Objectives

1. To study the performance of major agricultural commodities with reference to arrivals, valuation, growth trends, seasonal and cyclical variations in the selected regulated markets.
2. To analyze the export competitiveness of selected agricultural commodities in the international market.

Methodology

Agricultural Market Committees (AMCs), Guntur and Duggirala were purposively selected for this study, as the investigators hail from the Guntur district of Andhra Pradesh. The "Guntur Tobacco Market Committee" was originally constituted in the year 1939 under the Madras commercial crops Act 1933 for the prime purpose of regulation of trade of Tobacco in Guntur district. It was later re-designated as the "Guntur Market Committee", and the constitution of the Agricultural Market Committee, Guntur came into effect from 02-06-1969 under the integrated Market Act namely "Andhra Pradesh (Agricultural Produce & Livestock) Markets Act, 1966. The Agricultural Market Committee, Emani (HQ), Duggirala was bifurcated from Agricultural Market Committee, Tenali with effect from 25-10-1984, and constituted with entire area of Revenue Mandals Duggirala, Kolluru, Kollipara by the Government of Andhra Pradesh. These markets had National reputation for transacting chillies and turmeric commodities respectively and in protecting the interests of the farming community through strict implementation of regulatory measures. Besides these two commodities, paddy and cotton from Guntur and paddy from Duggirala markets were also selected for this in-depth study, keeping in view of their substantial shares in the total quantum of arrivals into the markets. Besides secondary sources of information, personal interviews were also held with the randomly selected farmers (n = 100) to rank the problems in transacting agricultural commodities in the selected markets. To study the export competitiveness of selected agricultural commodities in the international market, domestic Market Prices (MP) were compared with the International Prices (IP). The following are the analytical techniques used for drawing realistic conclusions from the collected data / information:

1. Compound Growth Rates (CGRs) were worked by semi-log method to study the growth in arrivals, valuations, domestic MP of major agricultural commodities in the selected regulated markets and IP of selected commodities. The following model was used to study the CGR:

$$Y = ab^t$$

$$\text{Log } Y = \log a + b \log t$$

Where, Y = arrivals/valuation/domestic MP/MSP/IP
a = intercept
b = Regression Coefficient
t = time period, 1, 2, 3 …….n years

$$r = \text{antilog}(\log b - 1) \times 100$$

Where, r = CGR

2. The Method of Least Squares of the following model was employed to study the growth trends in prices of major agricultural commodities in the selected regulated markets for the period 1993-2002.

$$Y = a + bX$$

Where, Y = Price of the commodity
a = Intercept
b = Regression Coefficient
X = time period, 1, 2, 3 …….n years

3. Ratio to Moving Average method was employed to isolate the seasonal price fluctuations of selected agricultural commodities.
4. Residual method (Cyclical variations as % of trend) and Relative Cyclical Residual Method was employed to study the cyclical variations in prices of selected commodities for the period, 1993-02.

$$\text{Cyclical variations as \% of trend} = \frac{\text{Actual time series value}}{\text{Estimated trend value}} \times 100$$

$$\text{Relative cyclical residual} = \frac{(\text{Actual time series value} - \text{Estimated trend value})}{\text{Estimated trend value}} \times 100$$

5. Simple Linear Regression Analysis of the following model was used to study the factors influencing the domestic MP of selected agricultural commodities:

$$Y = ab^x$$

$$\text{Log } Y = \log a + b_1 \log X + U$$

Where, Y = domestic MP of the selected commodity
a = intercept
b = Regression Coefficient
x = IP of the selected commodity
U = error term

't' and 'F' values were worked out to test the significance of individual regression coefficients and overall regression respectively and relevant conclusion were drawn.

6. Garrett's ranking test was employed to prioritize the marketing problems faced by the farmers.

$$\text{Per cent Position} = \frac{100 \times (Rij - 0.5)}{Nj}$$

Rij : Rank given to the ith factor by jth individual
Nj : Number of factors ranked by jth individual

7. To analyze the export competitiveness of selected agricultural commodities in the international market, Nominal Protection Coefficients (NPCs) were worked out. In working out the export competitiveness of selected commodities at All-India level, the exportable hypothesis, which is relevant was taken into consideration. Under this hypothesis, the selected commodities are deemed to be export competitive in the international market. NPC is the ratio between DMP to the border price of a commodity. Symbolically,

$$NPC = pd/pb$$

Where,
NPC= Nominal Protection Coefficient
pd= Domestic MP
pb= Border price/IP of selected commodity

Besides these tools of analysis, simple mathematical tools like ratios and percentages were also employed to drawn relevant conclusions.

RESULTS AND DISCUSSION

I. Scenario of Regulated Agricultural Marketing in Guntur District

1.1. Number and features of regulated (selected) markets in Guntur district

As mentioned earlier, the Government's intervention in the field of agricultural marketing system through regulating the market practices is successful in protecting the farmers' interests and now, facing new challenges in the liberalized regime. In lieu of this, the study on the performance of regulated markets deserves special attention. Hence, the number of AMCs and regulated markets established in the Guntur district for protecting the interests of the farming community and their respective share at State level were studied and the details were shown through table 1. It is clear from the table 1 that, the Government of Andhra Pradesh is making strenuous efforts in regulating the market practices through establishing a significant number of AMCs (299) and regulated markets (889) in the State. It is quite disappointing to note that, relatively, Guntur district do not occupy a prominent place in the establishment of number of AMCs and regulated markets, as their shares were only 6.02 and 4.05 percents in total AMCs and regulated markets respectively in the state. The informal discussions held with the officials of selected AMCs revealed that, despite lesser number of markets established in the district, they had immense potential with respect to market arrivals and annual turnover. All the established markets in this district deal with important commercial crops like chillies, cotton, turmeric, groundnut besides food grains like paddy, maize, red gram, black gram etc., with strict enforcement of regulatory provisions. Further, the business in the markets is round the year, as the Krishna delta possesses immense irrigation potential.

Table 1: Scenario of regulated agricultural marketing in Guntur district

Item	Andhra Pradesh	Guntur district	Share of Guntur in A.P.
AMCs	299	18	60.2
Regulated markets	889	36	4.05

Source: Personal Interviews with the Officials of selected AMCs

The basic features of the selected markets was studied and presented through table 2. It is clear from the table 2 that, Guntur market is the biggest market followed by Duggirala, as evidenced by the average annual income, number of market functionaries, commodities dealt with etc. Among these, Guntur is the oldest and most reputed market for chillies in Andhra Pradesh and it came into existence in the year 1939. Later, the trade is extended to cotton kapas, paddy, pulses etc., with the establishment of good number of processing units around the market area. Duggirala market came into existence in 1984 after getting bifurcated from AMC, Tenali. These two markets together, account for over Rs. 100 crores annual turnover.

Table 2: Features of the selected regulated markets in Guntur district

S. No.	Features	Guntur regulated market	Duggirala regulated market
1.	Name of the Act under which the market came into existence	Madras Commercial Crops Markets Act, 1933	Madras Commercial Crops Markets Act, 1933
2.	Name of the AMC	Guntur Market Committee	Duggirala Market Committee
3.	Major commodities dealt with	Paddy, cotton. chillies and pulses	Turmeric, paddy and black gram
4.	Average Annual Income (Avg. of 1998-99 to 2002-03)	Rs. 8.99 crores	Rs. 1.35 crores
5.	No. of market yards under purview (jurisdiction)	Two (Guntur, Prathipadu)	Three (Duggirala, Emani, Kollipara)
6.	Method of sale	Open Auction System	Open Auction System
7.	Number of market functionaries (2002-03)	Comm. agents : 420 Traders : 1383 Weighmen : 94 Hamalis : 44	Comm. agents : 113 Traders : 74 Weighmen : 14 Hamalis : 90
8.	Market Arrivals from	Villages of Guntur, Prakasam, Krishna, Khammam and Warangal	Villages of Guntur, Prakasam, Krishna, Cuddapah, Chittoor, Vizianagaram and Khammam and Visakhapatnam
9.	Peak marketing season	Paddy : October - December and March - May Cotton : November - March Chillies : Feb – April	Paddy : Oct –Dec & March - May Turmeric : Apr - June

Source: Annual Administration Reports of selected AMCs

1.2. Growth in arrivals and valuation of major agricultural commodities

The farmers' orientation towards regulated markets can be best analyzed from the growth in arrivals of produce in the market yards. CGRs were worked out to study the growth in arrivals and valuation of major agricultural commodities in the selected regulated markets and the analytical findings were presented through table 3.

Table 3: Growth in arrivals and valuation of major commodities in the selected regulated markets of Guntur district (1995-96 to 2012-13)

S. No	Market/Commodities	Growth rates (%)	
		Arrivals	Valuation
1.	**Guntur regulated market**		
	1. Paddy	-5.56NS	-5.19NS
	2. Cotton	-1.19NS	0.86NS
	3. Chillies	6.35**	9.63**
2.	**Duggirala regulated market**		
	1. Paddy	3.98*	6.98**
	2. Turmeric	-1.94NS	3.68NS

Note: **-Significant at 1% level, * - Significant at 5% level, NS – Non-Significant

Raw data source: Annual Administration Reports of selected AMCs

It is evident from the table 3 that, in terms of arrivals, chillies (Guntur market) and paddy (Duggirala market) showed significant positive growth rates of 6.35 and 3.98 percents respectively. Similar is the case for growth in valuation of these two commodities (9.63% and 6.98% respectively). However, it is disappointing to note that, the market arrivals of cotton (-1.19%) and paddy (-5.56%) in Guntur market and turmeric (-1.94%) in Duggirala market showed negative growth trends, but non-significant. This might be due to increased village sales of these commodities in the production areas for immediate requirement of cash to the farmers to clear their debts. Regarding valuation, non-significant growth rates were experienced for these commodities. This is due to declined arrivals of these commodities into the regulated markets.

1.3. Growth trends in prices of selected agricultural commodities

Growth rates were also worked out to study the trends in prices of the major commodities in the selected regulated markets and the details are presented in table 4. It is clear from the table 4 that, only paddy exhibited significant positive growth rates in prices both in Guntur (6.15%) and Duggirala (7.34%) markets and cotton showed positive growth rate (0.19%) in Guntur market, but non-significant. Chillies (-0.26%) in Guntur market and turmeric (-1.26%) in Duggirala market exhibited declining growth in prices (non-significant). This might be due to higher market concentration with reference to both commission agents and traders, there by leading to decline in prices of these commodities.

Table 4: Growth in market prices of major commodities in the selected regulated markets of Guntur district (1993-94 to 2002-03)

S. No	Market/Commodities	Growth rates (%)
1.	**Guntur regulated market**	
	1. Paddy	6.15**
	2. Cotton	0.19NS
	3. Chillies	-0.26NS
2.	**Duggirala regulated market**	
	1. Paddy	7.34**
	2. Turmeric	-1.26NS

Note: **-Significant at 1% level, NS – Non-Significant

Raw data source: Annual Administration Reports of selected AMCs

1.4. Seasonal variations in prices of selected agricultural commodities

Ratio to Moving Average method was employed to isolate the seasonal price fluctuations of selected agricultural commodities for the period 1993-94 to 2002-03 and the details were presented through table 5.

Table 5: Seasonal price indices of selected agricultural commodities in the selected regulated markets of Guntur district.

Month	Guntur Market			Duggirala Market	
	Paddy	Cotton	Chillies	Paddy	Turmeric
April	**90.17**	**92.73**	**93.39**	**92.15**	**89.11**
May	**91.13**	105.23	**94.12**	**96.29**	**86.17**
June	104.34	106.26	101.40	112.25	**98.04**
July	109.14	103.76	103.90	117.74	109.26
August	116.22	116.25	107.53	114.39	116.17
September	124.69	119.39	113.10	119.62	121.21
October	**97.02**	105.66	104.39	**92.03**	118.23
November	**90.16**	**98.54**	102.17	**85.19**	115.36
December	**87.17**	**95.19**	103.36	**82.15**	**93.16**
January	101.56	**87.59**	100.79	103.87	**90.07**
February	103.07	**84.11**	**86.40**	102.68	**82.19**
March	**85.33**	**85.29**	**89.45**	**81.64**	**81.03**
Seasonal High	124.69	119.39	113.10	119.62	121.21
Seasonal Low	85.33	84.11	86.40	81.64	81.03
Average	100.00	100.00	100.00	100.00	100.00

Raw Data Source: Annual Administration Reports of selected AMCs

A close perusal of the table 5 reveals that, the price indices were low and lies below the seasonal average during the peak marketing seasons of the selected commodities. It is clear from the table that, the price fluctuations were quite low in case chillies in Guntur market, as indicated by only four months during when the price indices were less than seasonal average. However, in case of paddy both in Guntur and Duggirala markets and cotton (6 months), and turmeric (7 months) the seasonal price fluctuations were much higher, as for half of the year-period the prices indices were below seasonal average. This signifies that, for all the selected commodities (except chillies in Guntur market) price fluctuations were severe for half of the year and hence, the farmers were deprived of getting competitive price in the open market. Hence, pledge loans should be provided to the farmers to overcome such distress sales. Since the existence of inverse relationship between market arrivals and prices universally holds, the seasonal indices of market arrivals were not analyzed.

1.5. Cyclical variations in prices of selected commodities

Cyclical variations in prices of selected agricultural commodities were studied both by the Residual method and Relative Cyclical Residual method and the analytical findings were shown through table 6.

Table 6: Cyclical variations in prices of major agricultural commodities in the selected regulated markets of Guntur district.

Year	Guntur market						Duggirala market			
	Paddy		Cotton		Chillies		Paddy		Turmeric	
	RM	RCR	RM	RCR	RM	RCR	RM	RCR	RM	RCR
1993	98.69	-1.31	93.06	-6.94	90.20	-9.80	111.73	11.73	84.88	-15.12
1994	97.77	-2.23	103.47	3.47	91.16	-8.84	104.93	4.93	90.22	-9.78
1995	106.99	6.99	104.94	4.94	108.94	8.94	105.18	5.18	109.70	9.70
1996	106.13	6.13	98.74	-1.26	90.60	-9.40	92.22	-7.78	92.91	-7.09
1997	102.03	2.03	103.35	3.35	95.71	-4.29	89.02	-10.98	120.83	20.83
1998	81.53	-18.47	103.92	3.92	136.13	36.13	96.33	-3.67	128.33	28.33
1999	105.23	5.23	93.00	-7.00	122.63	22.63	82.24	-17.76	123.72	23.72
2000	91.40	-8.60	99.66	-0.34	88.34	-11.66	105.62	5.62	69.45	-30.55
2001	112.34	12.34	96.76	-3.24	86.55	-13.45	107.81	7.81	63.93	-36.07
2002	98.01	-1.99	103.10	3.10	89.74	-10.26	106.14	6.14	116.02	16.02

Note: RM – Residual Method, RCR – Relative Cyclical Residual Method

Raw Data Source: Annual Administration Reports of selected AMCs

It is clear from the table 6 that, cyclical variations in prices of paddy (below the trend) are quite irregular in Guntur market when compared to Duggirala market. In case of cotton and chillies in Guntur market, cyclical variations were higher for chillies when compared to cotton, but both commodities exhibited higher variations during the last three to four years. Both cotton and chillies, being commercial commodities, the variations were higher and due to the higher market concentration, chillies exhibited more fluctuations below the trend line. In case of turmeric, the variations below the trend were higher during the recent period (2000 and 2001) and this is again due to higher market concentration of traders in the Duggirala market.

1.6. Prioritization of marketing problems faced by the farmers

The sample farmers were interviewed to elicit the marketing problems faced by them in transacting the major commodities in the selected regulated markets of Guntur district. Garrett's ranking test was employed to prioritize the problems expressed by the farmers, as it enables the researchers to suggest suitable strategies for mitigating them and the findings were presented through table 7. The table 7 reveals that, creation of

scientific storage facilities should deserve special attention in the selected regulated markets. The farmers further opined that, due to lack of both adequate and scientific storage facilities, they are resorting to distress sales of the produce. Besides this, the strict implementation of regulatory provisions (effective supervision of sales by the AMCs officials) and strengthening the grading facilities should be done for realizing competitive prices for the commodities transacted in the markets. Further strengthening the market information network and effective implementation of Pledge loan scheme should be given due attention, so as to protects the interests of the farming community.

Table 7: Garrett's ranking of prioritization of marketing problems in Guntur district

S. No	Researchable Issues	Score	Rank
1	Lack of scientific storage facilities in the market yards	88.16	**I**
2	Low competitive environment in the market due to large scale market concentration between commission agents and traders	81.23	**II**
3	Lack of scientific grading facilities in the market yards	71.64	**III**
4	Poor market information net work	66.59	
5	Ineffective implementation of Pledge loan scheme	60.23	

Source: Personal Interviews held with the farmers (n=100)

II. Export competitiveness of selected agricultural commodities in the era of liberalized regime

To study the export competitiveness of selected agricultural commodities in the international market, maize was also included in the analysis, as this crop is gaining more significance in this district in lieu of irrigation water scarcity during the past three to four years. The area under maize is gradually increasing in this district, as it equally remunerative to the farmers on par with paddy besides meeting fodder requirements to the cows and buffaloes and it can be cultivated with less water requirement.

2.1. Growth in domestic Market Prices (MP) and International Prices (IP) of selected agricultural commodities

To get the correct picture about the extent of export competitiveness of selected commodities, it is thought appropriate to compare the growth trends of average MP, MSP and IP and the analytical findings were presented through table 8. It is disappointing to note from the table 8 that, for paddy, maize and cotton, the growth in MP are much lower than the growth in MSP announced by the Government. This signifies the fact that, the Government itself encouraging the farmers indirectly to boost the cost of cultivation/production, through increasing the MSP. The comparative analysis between growth in domestic MP and IP of rice and maize reveals that, these commodities are loosing competitive ground in the international market. This is best indicated by the fact that, the growth in MSP is higher than the growth in IP of selected commodities. The growth in IP of turmeric is higher than the growth in MP, indicating the export competitiveness of turmeric in the international market. The comparative analysis between growth in MP and IP of cotton and chillies will not give a correct picture, as the commodities of different varieties and qualities were compared in this study.

Table 8: Comparative analysis of growth in MP and IP of major agricultural commodities (1995-96 to 2012-13)

S. No	Commodity	CGR (%)	
		MP	IP
1.	Paddy	3.67**	--
2.	Rice	2.96**	0.28NS
3.	Maize	3.16**	3.17*
4.	Cotton	0.56S	-1.69NS
5.	Chillies	-0.25NS	7.31**
6.	Turmeric	-1.91NS	2.89NS

Note: **- Significant at 1% level, * - Significant at 5% level, NS – Non-Significant
Raw data source: Selected AMCs,

2.2. Factors influencing the domestic MP of selected agricultural commodities

Having studied the nature and degree of association between MP and IP of selected agricultural commodities, it is important to analyze the extent of impact on MP due to the fluctuations in IP of commodities.

Simple linear regression model was fitted to analyze the same and the details were presented through table 9. It is clear from the table 9 that, this model is statistically significant for paddy and maize commodities, as indicated by the Co-efficient of Determination (r^2) values of 63 and 93 percents respectively.

In case of maize, the IP was exerting significant positive impact on the dependent variable (domestic MP). This implies that, for every one per cent increase in the IP of maize, the domestic MP will increase by 0.163 percent. This again indicates the increasing demand for maize both in the domestic and international markets. Similarly for paddy, the IP is exerting significant positive impact on the domestic MP and for every one per cent increase in the IP of paddy, the domestic MP will increase by 0.65 per cent. Since there exists low degree of association between MP and IP of rice, chillies, cotton and turmeric, the regression analysis turned out to be non-significant as indicated by the low values of $r^{2.}$

Table 9: Factors determining the domestic MP of selected agricultural commodities

S. No	Commodity	Intercept	X_2 (IP)	r^2
1.	Paddy	0.9116	0.6512**	0.63**
2.	Rice	3.2362	-0.1326NS	0.09NS
3.	Maize	1.6982	0.1630*	0.93**
4.	Cotton	2.9388	0.0531NS	0.08NS
5.	Chillies	3.093	0.0799NS	0.16NS
6.	Turmeric	1.3025	0.6001NS	0.26NS

On the whole, the study revealed that, the IP of selected agricultural commodities are exerting significant impact on the domestic MP. Hence, it is imperative on the part of the Government to give support in the form of Minimum Support Prices (MSPs) to the agricultural commodities based on the close scrutiny of the price trends prevailing in the international market.

2.3. Export competitiveness

NPC were worked out to estimate the export competitiveness by computing the ratio between domestic MP and IP of selected commodities during both pre and post-WTO regimes. This will facilitate to identify the potential commodities for export from India and also to plan the strategies for improving the export competitiveness, keeping in view the price trends of selected commodities both in domestic and international markets in the future.

Table 10: Export competitiveness of selected commodities during both pre and post-WTO regimes

Commodity	Pre-WTO regime (1985-94)	Post-WTO regime		
		1995-00	2001-05	2006-10
Rice	0.89	0.90	1.08	1.22
Cotton lint	0.94	0.91	0.73	0.58
Chillies	1.17	1.01	0.96	0.91
Turmeric	0.89	0.86	0.94	0.92

It is evident that, all the selected commodities except rice enjoy export competitiveness in the international market during post-WTO regime. However, the trend in export competitive is most satisfactory for cotton lint over chillies and turmeric. It is essential to note that, rice which is export competitive during pre-WTO regime, it lost its competitiveness and even showed declining trend during post-WTO regime. This calls for effective implementation of scientific measures towards increasing the production, quality promotion, cost-effective production etc., to attract the customers in the international market. It is also essential to modernize the processing facilities in the country.

Conclusions and Suggestions

To conclude, the study revealed that, there exists positive growth in prices of major commodities in the selected regulated markets of Guntur district. Except chillies and turmeric in Guntur and Duggirala markets respectively, the other major commodities exhibited positive trends in prices. The declining trend in prices of chillies and turmeric in Guntur and Duggirala markets is only a temporary phenomena and it is mainly due to the existence of higher market concentration with reference to commission agents and traders. For nearly half of the year period, the prices were below the average seasonal index with reference to all the selected commodities. Hence, it is essential for the Government to strengthen the Pledge loan scheme and to encourage the farmers to store the farmers in the godowns at subsidized prices, so as to avoid distress sales of the produce. In the export scenario, the

selected commodities are losing competitive ground in the international market (except maize), as the domestic market prices are higher than their respective IP. The MP are increasing at a higher rate when compared to the IP. It is further disappointing that, the MSP announced by the Government are increasing at higher rate than the MP (maize crop), thereby, signifying that, the Government itself is encouraging the farmers to boost the cost of production. This was mainly responsible for the declining export competitiveness of agricultural commodities in the international market. The IP is exerting significant impact on the domestic MP and hence, on the scope for their exports in the international market. Hence, there is an immense need for the Government to plan the strategies to improve both the domestic and export marketing scenarios of the major agricultural commodities and they are discussed here under.

- A long-term policy is essential to promote agricultural exports on a sustainable basis. This policy should call for studying the export competitiveness of agricultural commodities from time to time across the countries under the changing scenarios of agricultural prices, food security concern etc.
- Strengthening grading, storage, processing and market information network facilities in the regulated markets.
- The research must focus on the significant reduction in the cost of production of crops, increasing the yield, improvement in the quality of produce etc. Besides concentrating on production-related aspects, efforts should be made to gather more comparative strength through cross-comparing the country's strengths and weaknesses vis-à-vis with the established rivals and should change the underlying policy parameters appropriately.
- Studies should be conducted to explore the export potential of different agricultural commodities, transaction costs involved both for domestic trade and export trade, identification of potential markets (countries) etc.
- Constraints involved in the export of agricultural commodities through ship, road and air should be studied and prioritized and accordingly action plan should be prepared.
- Biotechnology should be promoted in the country, as it facilitates to produce crop varieties with desirable traits like high yielding potential, pests and disease resistance, more responsiveness to organic manuring, short duration etc.
- Quality consciousness should be promoted among the farmers, processors, traders and exporters (through explaining SPS measures) in the country, as it directly enhance the export competitiveness of agricultural commodities besides cost-effectiveness.
- The media disseminating the latest technologies to the farming community is concentrating on crop production aspects only. Hence, due attention should be given by the media to promote latest marketing techniques among the farmers and traders so as to avoid possible risks and uncertainties in transacting agricultural commodities.
- The management analysis (SWOT analysis) should be done for the member nations of WTO to analyze comparative advantage of the country in exporting the agricultural products.
- Proper encouragement should be given to the exporters of agricultural commodities by giving relief in terms of taxation, issuing licences, promoting advertisement of their commodities, arrangement of transportation facilities, concessions in transportation costs and other transaction costs etc.
- The WTO Cells should be strengthened with permanent staff and good infrastructural facilities so that they can collect, analyze and disseminate useful information to the farmers, traders and Government. Based on the information generated by the WTO cells, the EXIM Policy should be formulated and implemented.
- Future trading (hedging) should be encouraged and promoted, as this protects the farmers and traders from price risks in international trade.
- The ICAR institutes and State Agricultural Universities should start separate departments exclusively in the field of Agricultural Marketing, so as to analyze the marketing potential of agricultural commodities both in domestic and external trade, conducting studies on marketable surplus, cost reduction strategies, constraints in agricultural marketing, improving the efficiency of different marketing functions etc. These studies should be made utilized by the CACP for fixation of MSP to the agricultural commodities to protect the farming community from the distress sales and large-scale imports.

Apart from the suggestions given above, it is equally responsible on the part of the farmers to follow the guidelines of the Government in cultivating and transacting the agricultural produce as per the marketing policy (EXIM Policy) formulated. The farmers and traders should change their mindset and should develop more quality consciousness in marketing of quality products. The country must realize, at least now, unless a sound marketing policy is formulated and implemented, it is very difficult to sustain the farming community in the agri-business, as the repercussions will be much severe in the light of World Trade Agreement. If implemented, India definitely holds a lot of promise in the liberalized trade regime, as the country harbored valuable natural resources, diversified climatic and soil conditions, good experience in farming, variety of crops and a vast pool of trained scientific man power.

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References

Ashok Gulati (2001),'Agriculture and the New Trade Agenda in the WTO 2000 Negotiations: Interests and Options for India,'Delhi, India January2001

Ashok Gulati (2009),' Emerging Trends in Indian Agriculture: What Can We Learn from these?
Agricultural Economics Research Review Vol. 22 July-December 2009 pp 171-184

Dawe, D., Block, S., Gulati, A., Huang, J. and S. Ito (2010), "Domestic rice price, trade and marketing policies", in Rice in the Global economy: Strategic Research and Policy Issues for Food Security, IRRI Publication

Dolman, E., R. Schnepf, and C. Bolling. 2001. Soybean Production Costs and Export Competitiveness in the United States, Brazil, and Argentina. USDA ERS Oil Crops Situation and Outlook OCS-2001.
Gulati, A. and T. Kelley (1999). Trade Liberalization and Indian Agriculture. Oxford University Press

Veermani C,(2007) ,'Sources of India's export growth in pre-and post-reforms periods', Economic and political weekly ,June 2007