TREND AND COMPETITIVENESS OF MANGO EXPORT IN INDIA
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Abstract

The present study entitled “Trend and Competitiveness of Mango Export in India” was undertaken to know trend in domestic and international prices and competitiveness of mango export. The nature of data used for the study is entirely based on secondary source of data from 1985-86 to 2014-15. The analysis of trends in international prices of mango shows that, the quadratic function fitted for mango for domestic price and international price. The R² value (0.46) was statistically significant for Domestic price. However, sign of ‘b’ was positive (0.78) and sign of quadratic term ‘c’ was negative (-0.02) this indicates that, trend in domestic price of mango was increasing at decreasing rate. Also for international price value of R² (0.72) was statistically significant and the sign of ‘b’ was negative (-1.09) and sign of quadratic term ‘c’ was positive (0.10) this showed that, trends in international price of mango was decreasing at increasing rate. The NPC values of mango export was worked out for overall period was 0.36; it’s indicating highly export competitiveness of mango in international level and proves commodity is protected in international market. It was observed that, the crop was during the period I and period II average NPC values was 0.33 and 0.39, respectively which indicates highly export competitiveness.

Key words: Trend Analysis, Nominal Protection Coefficient.

Introduction

Mango (Mangifera indica) is the main fruit of Asia and has developed its own importance all over the world. Mango is a fruit that grows in tropical regions of the world. Mango is called the king of tropical fruits. Mango continues to dominate the Indian fruit basket contributing 36 per cent to total fruit area and 20.3 per cent to total fruit production. India is the largest producer of mangoes with 44.14 per cent of the total world production. India ranks first among world’s mango producing countries accounting for 52.63 per cent of the total world’s mango production of 19 MT. The major mango growing states are Uttar Pradesh, Andhra Pradesh, Karnataka, Bihar, Gujarat and Tamil Nadu. Uttar Pradesh ranks first in mango production with a share of 23.71 per cent and highest productivity. India exports mango more than 33 countries in the world. The export of mango in 2000-01 was 37,109.68 MT and it increases to 58,863.41 MT in 2010-11. The value of exported mango was Rs.16483.61 lakhs in 2010-11 and the total export of mango in 2014-15 was 42998.31 MT with the value of export is Rs. 30253.65 lakhs. Though India is having world's more than 40 per cent mango production, our share was in international market is very less (Prasad et al., 2014). Mango (fresh fruits) and processed mango products are exported to different countries. From India major mango importing countries are – United Arab Emirates, Bangladesh, United Kingdom, Saudi Arabia, Kuwait, Qatar, Bahrain, Nepal, USA, Oman, Singapore, etc., and the foreign exchange earned from such exports amounts to about Rs.2005 million. There is a scope to further increase the export of mango at international level. The objective of study was to study the trend in domestic and international prices of mango export and to study the export competitiveness of mango in India.

Materials and Methods

The current study made use of secondary time series data on production and export of mango from 1985-86 to 2014-15, which includes 30 years data, that was collected from the Food and Agriculture Organization (FAO) and Agricultural and Processed Food Products Export Development Authority (APEDA). The entire study period was divided into two sub periods i.e. period I (1985-86 to 1999-00), period II (2000-01 to 2014-15) and overall period (1985-86 to 2014-15). Data on export quantities, export value, major destination of exports and export prices at domestic and international markets were collected for mango. To fulfil the objectives of the study the Nominal Protection Coefficient (NPC) were use to assess the data.

1. Trend Analysis

The trend in domestic and international prices of mango was computed for the series data of 1985-86 to 2014-15. With the help of following Quadratic function.

\[ Y_t = a + bt + ct^2 \]

Where,

- \( Y_t \) = Domestic / International Price
- \( a \) = intercept
- \( t \) = Time
- \( b, c \) = partial regression coefficient

2. Nominal Protection Coefficient (NPC)

NPC was computed to determine the extent of competitive advantage enjoyed by the commodity in the context of free trade. The coefficient sheds light on whether a country has comparative advantage in the export of that commodity in the free trade scenario or not. The NPC is defined as the ratio of the domestic price to international price of the commodity under consideration.

\[ NPC = \frac{P_d}{P_i} \]

Where,

- \( P_d \) = Domestic price of commodity
- \( P_i \) = World reference price of the commodity

If NPC > 1, the commodity is protected, compared to the situation that would prevail under free trade and if NPC < 1, the commodity is disprotected.

Results and Discussion

1. Trend in domestic and International prices of mango

The trend equations were fitted to assess the domestic and international prices. Depending upon its better fit, the trends and the results are assessed and presented under different categories namely trends in domestic price and trends in international price.

The trend in international prices was studied for mango by regressing domestic price and international price with time as the variable. The quadratic function is fitted to the data and sign and significant of the quadratic coefficient ‘c’ indicate the magnitude and direction of the change in trade in international price. The results of the quadratic function are presented in Table 1.

Table 1: Trend in Domestic and International prices of mango

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Trend</th>
<th>Intercept (a)</th>
<th>X (b)</th>
<th>X² (c)</th>
<th>R²</th>
<th>F value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Domestic Price</td>
<td>0.41</td>
<td>0.78</td>
<td>-0.02</td>
<td>0.46**</td>
<td>35.28</td>
</tr>
<tr>
<td>2</td>
<td>International Price</td>
<td>21.06</td>
<td>-1.90</td>
<td>0.10</td>
<td>0.72**</td>
<td>11.65</td>
</tr>
</tbody>
</table>

** - denotes significant at 1% level
The analysis of trends in international prices of mango shows that, the quadratic function fitted for mango for domestic price and international price. The R² value (0.46) was statistically significant for Domestic price. However, sign of ‘b’ was positive (0.78) and sign of quadratic term ‘c’ was negative (-0.02) this indicates that, trend in domestic price of mango was increasing at decreasing rate. Also, for international price value of R² (0.72) was statistically significant and the sign of ‘b’ was negative (-1.09) and sign of quadratic term ‘c’ was positive (0.10) this showed that, trends in international price of mango was decreasing at increasing rate. The results obtained are in close agreement with the findings of Prasad et al. (2012).

4.5 Export competitiveness of mango

The export competitiveness of mango was analyzed using Nominal Protection Co-efficient. The competitiveness of market depends upon NPC ratio. When NPC ratio is less than 0.5, market is highly competitive, when NPC ratio is in between 0.5 to1, the market is moderately competitive and when NPC ratio is greater than one, then market is non-competitive and it is presented in Table 2.

Table 2: Export Competitiveness of Mango

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Particulars</th>
<th>NPC (Pd/ Pr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Period I (1985-86 to 1999-00)</td>
<td>0.33</td>
</tr>
<tr>
<td>2</td>
<td>Period II (2000-01 to 2014-15)</td>
<td>0.39</td>
</tr>
<tr>
<td>3</td>
<td>Overall Period (1985-86 to 2014-15)</td>
<td>0.36</td>
</tr>
</tbody>
</table>

The Table 2 shows that, at an overall level, the NPC values of mango export was worked out to 0.36; it’s indicating highly export competitiveness of mango in international level and proves commodity is protected in international market but when it was analyzed for the two different periods in period I and period II. It was observed that, the crop was during the period I and period II average NPC values was 0.33 and 0.39, respectively which indicates highly export competitiveness. The results obtained are in close agreement with the findings of Patil (2011) and Prasad et al. (2014) concluded that, India was in competitive position in mango export.

Conclusion

1. Trend in domestic price of mango was increasing at decreasing rate. Trend in international price of mango was decreasing at increasing rate.

2. The NPC value of mango showed that in period I with average NPC value as 0.33 and NPC value for the period II was 0.39 which indicate highly export competitiveness in international market.

Policy Implications

There is immense scope to expand India’s potential of mango. This is necessary to meet the increasing domestic demand on one hand and to build up a sustainable supply to meet international markets for earning foreign exchange through mango export in other hand. Indian mango is export competitive in the international market. Therefore, to capture the higher share in the world trade, much emphasis needs to be given on sanitary measures and standardization of packaging, grading, infrastructure facility, vapour heat treatment, Irradiation facility and simplification in export procedure so that gain of export to the countries. Following policy suggestions have been proposed.

1. SPS specifications differ from country to country. So, in order to prepare consignments to different countries there is need to build the capacity of exporters with SPS specifications for every country to which mango is exported. New international markets have to be identified through planned strategies in different countries as per their quality specification, phyto-sanitary measures, codex standards and market preferences.

2. In order to export quality mangoes and optimize export earnings, quality control labs can be established and quality assessment may be made mandatory in order to cope up with improvement in exports.

3. Post-harvest losses in mangoes due to mishandling amount to a large proportion (approximately 20 %), leading to the rejection of the export lots as they suffer quality specifications. To prevent this, one of the impediments is the non-availability of refrigerated transport means and storage at export points in sufficient quantities. The government can think of providing such facilities to boost quality export of mangoes.

References


