Original Research Article

Export Competitiveness of Mango in India

Abstract

India is one of the leading producers of mango in the world, contributing more than half of the global mango supply. India exported 27,872.77 MT of mangoes in 2021–2022. Due to the Sanitary and Phyto Sanitary issues, India's export share in recent years was insignificant. Hence, this study focussed on estimating the export competitiveness of mango from the year 2006 to 2020 for India and major exporting countries. The study analysed the time series data of mango and total agricultural commodity export for India and major competitive countries at world level, which have arrived from Agricultural and Processed Food Products Export Development Authority and UN Comtrade. This have been resulted in positive value where Thailand, Pakistan and Brazil had Revealed Comparative Advantages values greater than one throughout the period. It indicated that, these countries had comparative advantages of mangoes. The RCA value of India was below one. However, by following Good Agricultural practices (GAPs), Indian mangoes might still find a market on a worldwide scale.

Key Words: Mango, Export, Competitiveness, Revealed Comparative Advantages

1.Introduction

Mango is grown commercially in 83 countries throughout the world. India, China, Thailand, Pakistan, Mexico, Indonesia and Brazil are all major mango producers. Indian mangoes are quickly gaining traction as a valuable foreign exchange earner and they hold a GI-exclusive position in the international market. India, as the world's largest producer, is

also a major exporter of mangoes, with shipments to more than 33 nations (Patil and Nirban 2010). India's fresh mango exports are on the rise, both in terms of volume and value. The country has exported 21,033.58MT of fresh mangoes to the world for the worth of Rs. 406.45 crores/ 60.26 USD Millions during the year 2020-21(Source: APEDA, 2021). India's leading export cultivar is 'Alphonso,' which is followed by Totapuri, Banganapalli, and Kesar. Dashehari and its export Chousa have lately been attempted. Major export destinations are United Arabian Emirates, UK, Oman, Qatar and USA. The World Trade Organization (WTO) was formed in response to the global development of agricultural trade, with the goal of removing restrictive trade barriers. Sanitary and phytosanitary (SPS) difficulties have always been significant in global trade and they have now emerged as one of the most significant potential technical barriers to trade. The fundamental driver for adopting minimum food safety standards has been the rapid increase in newly reported cases of outbreaks of food-borne diseases, particularly those connected with fresh produce. Compliance with some type of food safety assurance system will be required in the future to participate in global trade in fresh produce and food-related items. The global push to ensure safe food supplies must be viewed in conjunction with the focus on food security. In both affluent and poor countries, safe food must be ensured, and suitable legislation must be enacted to address these concerns. After fruit fly was identified in the produce, inspection by US inspectors in India raises the cost of mango and makes it uncompetitive, the export inspection criteria were overly strict. Due to increased consumer spending power and increased health consciousness, the demand for safe and high-quality food, particularly fruits and vegetables, has recently risen (Kearney, 2010). As a result, GAP (Good Agricultural Practices) is now explicitly acknowledged in the worldwide regulatory framework for lowering pesticide-related hazards while taking public and occupational health, environmental and safety factors into account. In response to rising consumer demand for

sustainably produced and nutritious food, the private sector is increasingly promoting the adoption of GAP through informal codes of behaviour and indicators issued by food processors and retailers. This development may provide farmers with incentives to adopt GAP by opening up new market options, if they have the capacity to respond (Misra et al., 2010). With these concerns, the current study has adopted the following objectives to analyse the mango export competitiveness among major export competitive countries.

2. Methodology

2.1. Sources of Data

For the period 2006 to 2020, the study used time series data on total agricultural commodity and exports of mango from India, China, Mexico, Brazil, Thailand and Pakistan gathered from APEDA, UN COMTRADE.

2.2. Tools of Analysis

2.2.1 Revealed Comparative Advantage (RCA)

Balassa's (1965) developed a method to measure the revealed comparative advantage of a country's trade patterns for any commodity. Revealed Comparative Advantage (RCA) was employed in this study to calculate comparative advantage based on a country's export specialty in comparison to some reference group countries. The Revealed Comparative Advantage (RCA) index is used to determine how competitive a country is by means of this formula:

$$RCAij = LN\ (Xij/\sum Xij)) /(\sum jXij/ \sum j \sum iXij)$$

Where,

LN – Natural logarithm

Xij denotes the exports of Mango 'i' in country 'j',

∑iXij denotes the total agricultural exports of country 'j',

$\sum j Xij$ signifies the world exports of Mango 'i' and

$\sum j \sum I Xij$ denotes the total world agricultural exports

When the RCA value is greater than one, it is assumed that India has a competitive advantage over its competitors. A value of less than one RCA values implies that revival countries have a competitive edge over India in Mango exports.

4. Results and Discussion

4.1 Competitiveness of trade

The principle of comparative advantage is one of the most effective tools for determining the mango export in India. The comparative advantage describes a nation's ability to export a mango on the international market. The Revealed Comparative Advantage (RCA) were used to determine the comparative advantages of the leading mango exporting nations.

Revealed Comparative Advantage (RCA) of mango

The occurrence of several developments after the National Horticulture Mission (i.e., after 2005), it appears that the exports of mango from India have been significantly impacted, either directly or indirectly. In this analysis, the period from 2006-2020 was taken into account due to lack of data. Consequently, this study considers India, Indonesia, Pakistan, Mexico, Brazil, Thailand, and China mango export values in million U.S.D.A brief examination of Table 1 reveals the India's and other major mango exporting nations comparative advantages in the global market. Theoretically, when RCA is greater than one, the country's mango export has a comparative advantage and expressing a considerably stronger ability for the industry to compete globally. In general, academics concur that the industry has a comparative advantage when RCA is greater than one (Mao and Feng, 2007). Results indicated that Thailand had higher comparative advantages than other competitors as indicated by Jiamin *et al.*, (2019), RCA index for Thailand was rising, but its fluctuating amplitude was decreasing and its overall competitiveness was more smoothly shifting.

Table 1 Revealed Comparative Advantages of Mango

Year	India	Pakistan	Thailand	Brazil	Indonesia	China
2006	0.82	1.09	1.04	1.16	0.73	0.17
2007	0.98	1.23	1.21	1.17	0.89	0.13
2008	0.91	1.14	1.19	1.19	0.86	-0.04
2009	0.75	1.16	1.36	1.19	0.88	0.12
2010	0.82	1.05	1.28	1.16	0.93	0.19
2011	0.81	1.09	1.26	1.18	0.80	0.27
2012	0.93	1.16	1.32	1.20	1.09	0.61
2013	1.02	1.23	1.43	1.24	0.70	0.20
2014	0.98	1.12	1.35	1.25	0.67	0.17
2015	1.00	1.11	1.34	1.25	0.88	0.18
2016	1.01	1.18	1.26	1.19	0.76	0.37
2017	1.03	1.09	1.31	1.18	0.54	0.36
2018	0.99	1.12	1.34	1.21	0.96	0.42
2019	0.98	1.11	1.46	1.25	1.08	0.58
2020	0.91	1.18	1.47	1.28	1.25	0.62

Source: Author's calculation based on data from APEDA and UN Comtrade (2006-2020)

Brazil and Pakistan had RCA values greater than one throughout the period under consideration (2006 to 2020) for mango export next to Thailand. Due to the favourable climatic conditions and low cost of production, Pakistan enjoys a competitive edge over most mango exporting nations in the production and export of mangoes (Hassan 2013, Akhtar *et al.* 2009). Despite having a comparative advantage, Pakistan lacks competitive advantage and export competitiveness in the mango market where the value of RXA (Relative Export Advantage Index) is less than one and value of RCA remained negative throughout the study period (Kousar *et al.*,2019). Fig 1. Shows the RCA values trend for India and other major mango exporting countries.

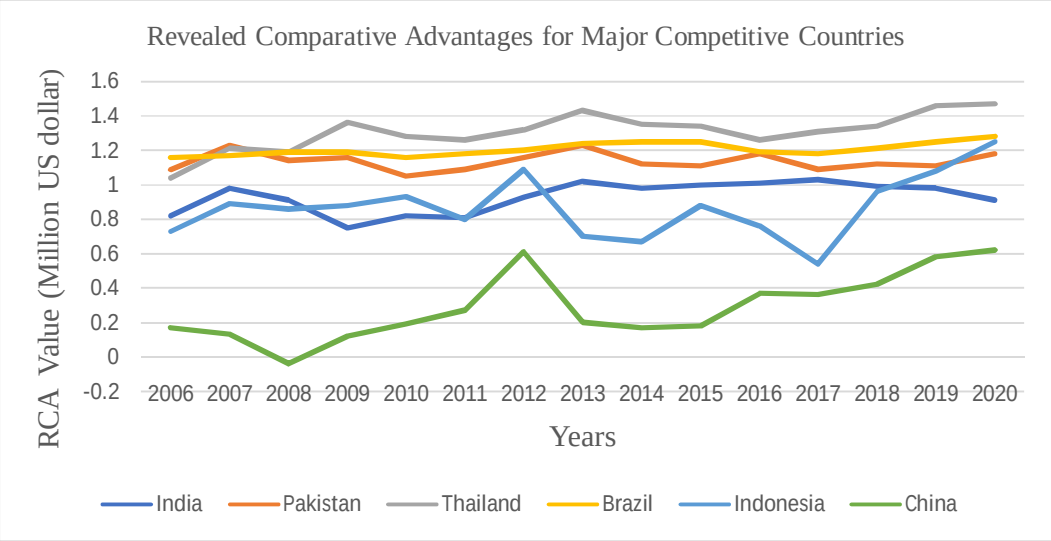

Fig. 1 Trend in Revealed Comparative Advantages of major mango competitive countries

India having a greater comparative advantage than China and Indonesia. But Indonesia had higher comparative advantage than India in 2019 and 2020. According to Arifin (2013), Indonesia's mango sector was fairly small, primarily as a result of seasonal production patterns that generate fluctuations in mango production. In Indonesia, mango production was not influenced by technology but rather by the seasons. So, India still stands to gain from growing mango export. But due to the contamination, pesticide residues, microbial contamination and non-compliance with other crucial technical standards India's Spices, fresh and processed fruits, vegetables were rejected more frequently by US and EU markets (Dhondu *et al.*, 2020). India is a unique case, that strives to overcome the above mentioned quality issues and its comparative disadvantages, across the period India's RCA values have been quite close to one.

5. Conclusion:

India is regarded as the world's leading producer of fruits and vegetables. India is the second-largest producer of fruit in the world, next to China. Indian mangoes are quickly becoming a significant fruit crop that generates foreign exchange and have a special place in the global market. From 2006 to 2020, revealed comparative advantage (RCA) indices for the top six exporting nations worldwide were calculated. India reported a better comparative advantage over China and Indonesia on the global market. Lack of financial and technical resources and widespread suspicion that developed nations were using SPS regulations as

covert protectionist tools have prevented developing countries from effectively participating in the implementation process (Athukorala and Jayasuriya, 2003). These findings suggested that there was still scope for India to enhance the exports of mangoes. To meet the demand for high-quality mangoes both domestically and internationally, a stringent production strategy based on appropriate agricultural practices like GAPs should be employed.

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