

Study on Supply Chain Management of Spices Industries in India

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ABSTRACT

Spice production and exports from India have increased significantly in recent years, solidifying the country's position as the global leader in both production and consumption of spices. With a notable increase of 17% in export value and 30% in volume from 2020–2021, India achieved a new high in 2021–2022, producing 10.88 million tonnes of spices. About seventy-five of the 109 spice varieties acknowledged by the ISO are manufactured in India. Chile is the most widely traded spice, followed by pepper, cardamom, ginger, turmeric, and cumin. Among the states that produce a significant amount of spices are: Uttar Pradesh, Andhra Pradesh, Telangana, Maharashtra, Madhya Pradesh, Kerala, Tamil Nadu, West Bengal, and Maharashtra.

In 2021/2022, spices exported by India were valued at \$4,102.29 million, making it the top exporter worldwide. In 2022, exports kept going up, with a total of \$330.46 million in September. Between 2017–18 and 2021–2022, the growth trend was robust, with a CAGR of 10.47%. Significant export amounts of ginger, turmeric, cumin, and chilli were recorded in FY22.

If you want to understand the spice market and how to expand and stay ahead of the competition, you need to look at the supply and value chain. Producing, handling after harvest, processing, packaging, and delivering spices to customers are all physical steps in the supply chain. Each link in the value chain—from raw materials procurement to finished goods sale—is analysed in terms of the value it adds.

It was during my visits to the Khari Baoli and Gadodia markets in Delhi and the Shyamganj market in Bareilly that I gained a better understanding of the inner workings of the spice trade. The complexity of the sourcing, distribution, and trading operations was exposed through engagement with traders, wholesalers, and other stakeholders. Also, seeing factories like B.L. Agro Industries and Farmer Producer Organisations (FPOs) brought home the importance of processors and farmers to the value chain.

Spice business heavyweights like Rajesh Spices, Everest Food Products, TATA Sampan, Suhana, and Catch use a variety of tactics to stay ahead of the competition. Some examples of this include using sustainable sourcing procedures, maintaining high quality standards, and investing in research and development for new products.

The movement and quality of spices are influenced by a multitude of parties along the supply chain, which includes farmers, auctioneers, agents, wholesalers, and merchants. Maintaining the integrity and quality of spices relies heavily on efficient shipping and logistics. Opportunities to improve efficiency and value are identified at each stage of the value chain analysis, which includes production, aggregation, primary processing, distribution, and retailing. Problems with sustainability, perishability, adulteration, and fragmentation plague the sector. Overcoming these obstacles can lead to better supply chain management and value addition methods, which in turn can boost the spice industry's growth and provide it a competitive edge.

Keywords:- Supply Chain, Spices, India

INTRODUCTION:

Background of Spices Industries

Following Bangladesh and Nigeria in terms of spice consumption, India takes the cake as the world's leading spice producer.

There has been a meteoric rise in the production of many spices in recent years. The output for the years 2021 and 2022 was 10.88 million tonnes. Both the value and volume of spice exports reached a record high in 2021, up 17% in US dollar terms and 30% in bulk terms, respectively.

Nearly seventy-five of the 109 varieties acknowledged by the ISO are manufactured in India. Pepper, cardamom, ginger, turmeric, cumin, coriander, fennel, nutmeg, mace, curry powder, turmeric, oleoresins, and fenugreek are the spices that are most manufactured and exported.

About 76% of the total production is made up of these spices: ginger, coriander, turmeric, cumin, and chilli peppers.

The top five spices exported from India in 2021 and 2022 were turmeric, mint products, cumin, spice oils and oleoresins, and chilli.

Largest Producer state:

- Madhya Pradesh
- Rajasthan
- Gujarat
- Andhra Pradesh
- Telangana
- Karnataka
- Maharashtra
- Assam
- Orissa
- Kerala
- Tamil Nadu
- West Bengal
- Uttar Pradesh

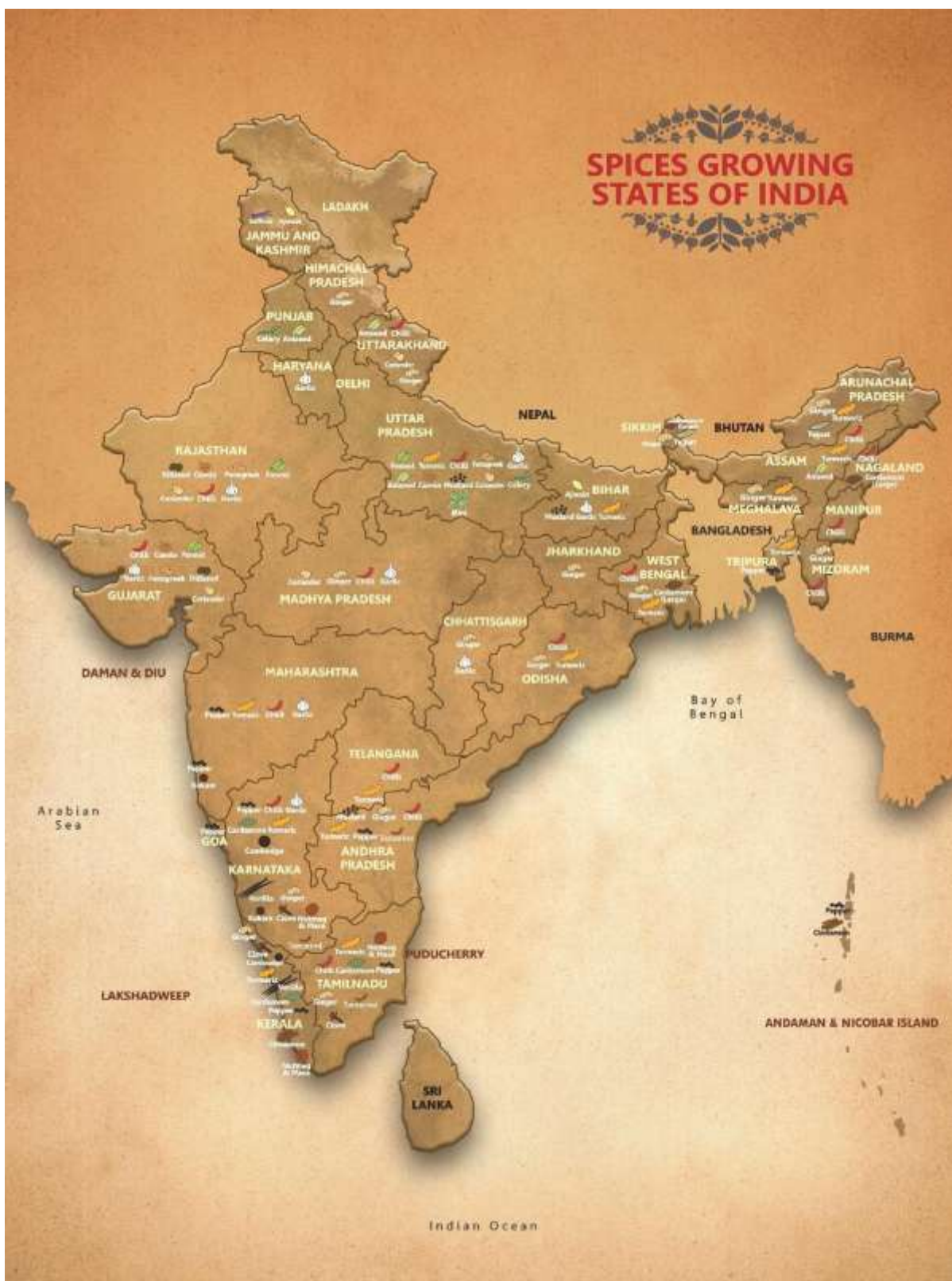


Figure 1: spices in India

EXPORT TREND

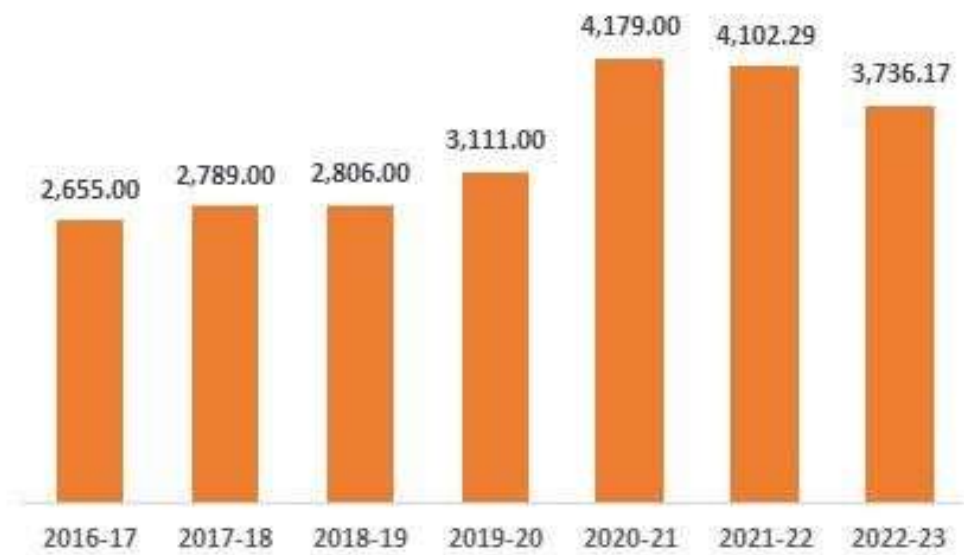
Spices and allied goods are exported by India more than any other country. The value of the country's spice exports was \$4,102.29 million in 2021 and 2022.

September 2022 saw an increase of 6.62% in India's spice exports to US\$ 330.46 million. India's export of spices in 2021 and 2022 was 1.53 million tonnes. Exports from India grew by 10.47% annually from 2017–18 to 2021–22.

For FY22, a total of 0.55 million tonnes, 0.21 million tonnes, 0.15 million tonnes, and 0.14 million tonnes of ginger, turmeric, and chilli were exported.

Chilli peppers, ginger, cardamom (small and big), coriander, turmeric, cumin, fennel, fenugreek, mustard, other spices, and other seeds (such as ajwan seed) had an increase in both value and volume compared to 2019–20.

India spice exports trend (Million US\$)



Source: DGCI&S, RBI

Figure 2: India spice export trends

Importance of Analyzing the Supply and Value Chain in spices industries:

LITERATURE REVIEW

A whopping 1,80,760 crores Indian rupees was spent on spices in 2023. Based on their projections, the market is expected to reach INR 4,70,339 Crores by 2032, growing at a CAGR of 11% from 2024 to 2032.

Government support, sustainable sourcing, ongoing innovation, the introduction of novel blends, rising demand in the food and beverage (F&B) industry, and an increase in the medicinal use of spices are all factors propelling the market forward.

Spices are aromatic, colourant, and flavour enhancers derived from plants. Cultural practices, medicinal practices, and dietary habits have all relied on them for a long period. Black pepper, cloves, paprika, turmeric, cinnamon, and cumin are among the most popular spices. Each spice has its own unique flavour and set of health benefits.

Their anti-inflammatory, antioxidant, and antibacterial properties make them useful in traditional medicine across many cultures.

The key driver propelling the market is the increasing demand for blended spices. The rapid urbanisation of the world and the hectic lives of individuals and working professionals are also factors fuelling the market's growth.

The market is expanding as a result of rising demand for convenient, moderately priced, high-quality spices that can be easily accessed through various distribution channels; also, Indian spices have gained widespread adoption due to their aromatic and savoury appeal.

Factors Influencing the Spices Market in India

- **The rapidly expanding F&B sectors**
- **The launch of a national program**

Growing Food and Beverages (F&B) Industries:

Changing consumer tastes, increasing disposable incomes, more urbanisation, and a varied culinary landscape are driving forces in India's food and beverage industry. Another factor influencing the market's growth is the rising popularity of processed and convenience foods, which are boosting the use of spices in various foods.

The usage of Indian spices, which are essential for enhancing the scent, flavour, and aesthetic appeal of food items, is another significant component that stimulates growth. Traditional Indian meals and modern cosmopolitan delicacies alike often employ them as natural flavours and colourants.

In addition, when developing new snack foods to meet customers' ever-evolving tastes, the food manufacturing industry heavily relies on spices.

In addition, the increasing popularity of health and wellness foods is fuelling the need for therapeutic spices such as black pepper, turmeric, and ginger. These spices are finding more and more applications in functional meals and nutraceuticals.

RESEARCH METHODOLOGY

Research Design

A Research Design is an arrangement of settings for data collecting and analysis that seeks to combine relevance to study objectives. The conceptual framework within which research is done is referred to as the research design.

The Research Design adopted here is descriptive. I have made use of Primary data and Secondary data.

Data Collection Method

The Data source for the report is both Primary and Secondary data.

- Primary Data: Survey Method**
- Secondary Data: Websites, Articles, Research Paper**

Tools and Techniques

Data was collected with the help of a Questionnaire.

Sample Size

A Sample of at least 100 individuals were taken for this survey.

Sample Profile: Industry Experts, traders, FPOs were involved in the survey

Method Used

The descriptive method is used for this survey because the descriptive research design aims to obtain information to systematically describe a phenomenon, situation, or population.

I collected the quantitative data and asked the close-ended questions as these are more easily segmented and analysed.

Overview of My Work

Visit to Traders:

By exploring various transactions and the dynamics of the supply and value chain, I gained a deep understanding of the spice trade's complex inner workings during my visits to the Delhi and Bareilly markets.

I set out to learn more about the mechanisms that foster sustainable growth and competitive advantage in this field.

I immersed myself in the bustling spice markets of Bareilly and Delhi, talking to vendors, wholesalers, and everyone else with an interest in the industry. Through discussions and observations, I have learnt a great deal about the spice industry's foundational processes, including sourcing, distribution, and trade.

Part of my job was to figure out how to enable sustainable growth by understanding the intricate dynamics of the supply chain. I researched the interdependencies among farmers, traders, and consumers to ensure the sustainable and problem-free movement of spices along the supply chain.

Visit to FPOs:

The individual farmers and Farmer Producer Organisations (FPOs) that provide traders and private companies with high-quality crops were also visited by me. Through our conversations, I gained a deeper understanding of the stakeholders' motivations, challenges, and areas of need in relation to boosting efficiency and profitability.

Visit to Manufacturing Unit (B.L. Agro Industries):

As part of my effort to learn more about the spice industry, I spoke with supply chain stakeholders, researched the markets, and toured manufacturing firms that process wheat and make spices. During my own observations during these visits, I gained a firsthand understanding of the intricate activities and procedures that contribute value to the industry's value chain.

From the moment raw materials are received until the finished goods are packaged, I had the opportunity to observe every

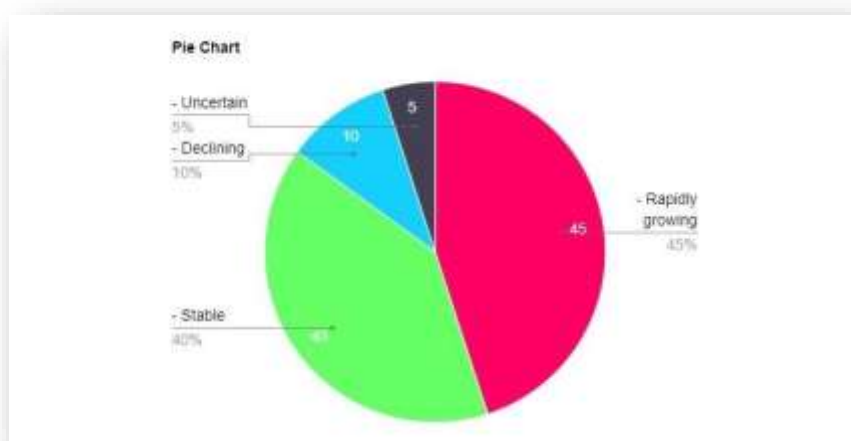
step of the wheat and spice processing at the factory. As I meticulously observed each stage, my understanding of the value addition tactics employed to enhance the items' quality, flavour, and shelf life deepened.

In addition, I looked into how these factories work with other links in the value chain, such as suppliers, distributors, and farmers, to produce and distribute commodities.

RESULT AND DISCUSSION

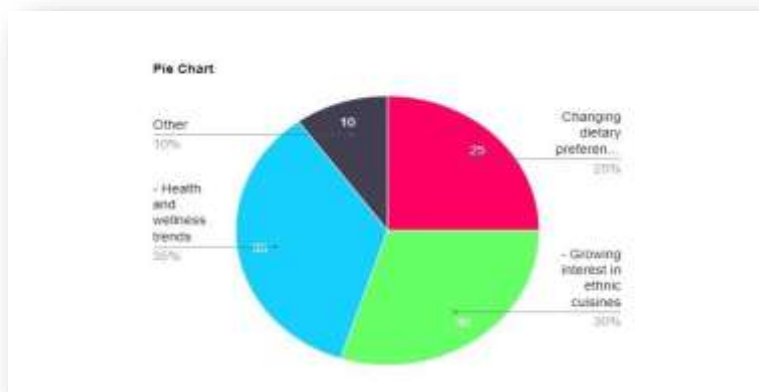
Questionnaire

1. How would you describe the current state of the spices industry in terms of growth and market dynamics?



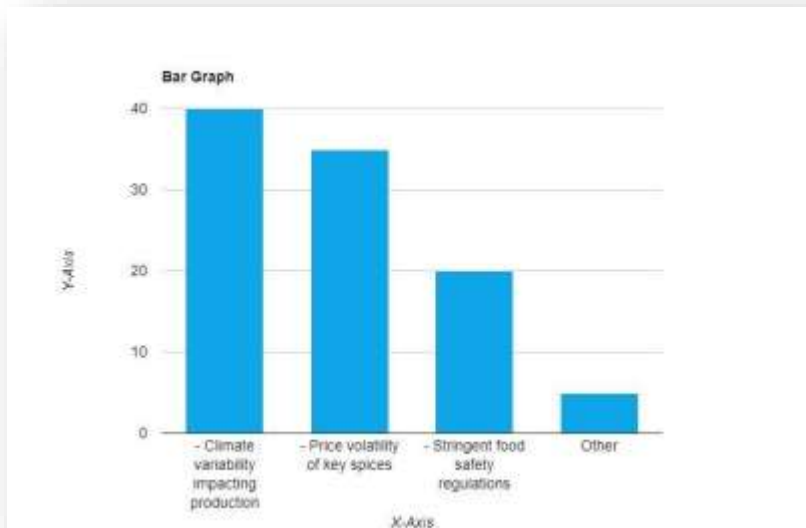
A significant majority (85%) view the industry as either rapidly growing or stable, indicating robust market dynamics and positive growth trends.

2. What are the key drivers influencing the growth of the spices industry?



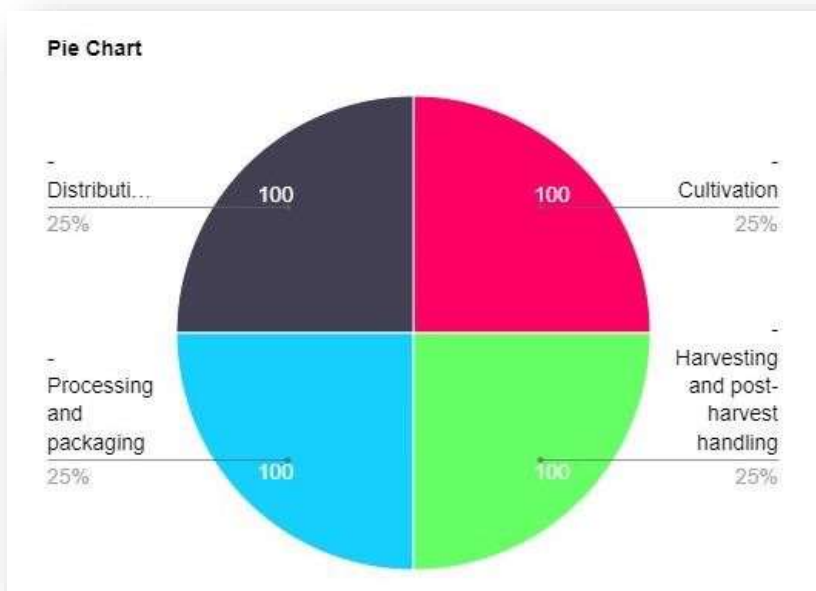
Health and wellness trends (35%) and growing interest in ethnic cuisines (30%) are the primary drivers, reflecting consumers' increasing focus on healthy living and diverse culinary experiences.

3. What are the key challenges influencing the growth of the spices industry?



Climate variability (40%) and price volatility (35%) are the most significant challenges, highlighting the industry's vulnerability to environmental and economic factors.

4. Can you outline the primary stages involved in the supply chain of the spices industry, from cultivation to distribution?



All respondents recognize the essential stages of the supply chain, indicating a wellunderstood process across the industry.

CONCLUSION

With 75 of the 109 recognised spice types, India maintains its position as the world's leading spice producer and consumer.

During 2021 and 2022, the country's spice production reached 10.88 million tonnes, while exports reached a record high, valued at \$4,102.29 million. The five most important spices, comprising 76% of the total, are ginger, coriander, turmeric, cumin, and chilli peppers.

From production to processing, packaging, and distribution, the supply chain encompasses a wide range of activities that get goods from farm to fork. Extensive site visits to Delhi and Bareilly, two of the world's largest spice marketplaces, shed light on these procedures and the parts played by farmers, dealers, and factories.

Improved agricultural methods, processing, branding, and logistics are the four pillars upon which the value chain rests. We found potential to improve contract farming, cold chain infrastructure, certification, and value addition, as well as challenges like fragmentation, adulteration, perishability, and sustainability.

Rising health and wellness trends and demand for ethnic cuisines are significant drivers in the spice sector, which is seeing sustainable growth and competitive advantage. The research highlights the need of analysing the supply and value chains to achieve this.

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