

Durian Market: Growth, Competition, and Future Prospect A Thailand Case

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Abstract

This study examines Thailand's durian industry value chain, which encompasses fresh fruits, frozen durians, and processed durian products. The research is derived from Singularity Academy's on-site project on the Asian durian industry, incorporating market studies from several countries. Focusing on Thailand, a leading global exporter of durians, the study highlights the meticulous planting, harvesting, processing, and export procedures that underpin Thailand's prominent position in international markets. However, the emergence of new exporting countries like Vietnam has introduced significant competitive pressures, particularly in the Chinese market. This paper, informed by field research and an in-depth interview with Mr. Huang Bo, investigates the current status, export dynamics, competition, and future prospects of Thailand's durian industry. It also identifies the challenges and opportunities faced by Thailand in maintaining its leadership in the durian sector.

Keywords: durian, agriculture industry, value chain management, durian-derived products, Asian market

1 Introduction

In early 2024, Singularity Academy initiated a research project focusing on the Asian durian industry. The project engaged with the durian industry in several Asian countries, including Vietnam, China, Thailand, Malaysia, and the Philippines. This comprehensive field research, conducted over six months in these durian-producing regions, gathered extensive study materials and insights.

This study primarily focuses on Thailand's durian industry, examining its current status, export market dynamics, competition, and future prospects. Central to this research is an analysis from an in-depth interview with Mr. Huang Bo, CEO of THLYW Food Co., Ltd., a seasoned expert in Thailand's durian-derived products market.

The study presents several key findings. First, as

a leading global durian exporter, Thailand has developed a comprehensive industry chain encompassing cultivation, harvesting, processing, and exportation. Second, the rise of emerging exporters, particularly from Vietnam, has intensified competitive pressures in international markets, notably in China. Third, to maintain its leading position in the global durian market, Thailand should enhance regulatory frameworks, improve production standards, optimize planting and orchard management, and actively expand the market for durian-derived products. Additionally, Thailand is advised to leverage e-commerce platforms and increase financial capital investment to consolidate market share, enhance brand value, and sustain global competitiveness.

2 Current Status of Thailand's Durian Industry Chain

Thailand's durian industry chain is robust, encompassing fresh fruit, frozen durians, and processed durian foods. The following outlines the production and export process of Thai durians.

2.1 Planting and Harvesting

Durian cultivation in Thailand is predominantly in the eastern and southern regions. During harvesting, durians are preliminarily graded into three categories: A/B fruits, C fruits, and D fruits:

- A/B fruits: These have a superior shape and quality, primarily exported to China. After selection, they are directly exported to China through packaging plants.
- C fruits: Slightly inferior to A/B fruits, these are transported to processing plants in Bangkok to produce frozen and freeze-dried durian products.
- D fruits: These are of the lowest quality and are mainly sold in the domestic Thai market.

2.2 Processing and Production

In Bangkok, B and C grade fruits are processed into various products, including frozen and freeze-dried durians. These products cater to both domestic and international markets. C grade fruits are cleaned, peeled, and cut before entering freezing facilities where quick-freezing technology preserves their original flavor. Alternatively, vacuum freeze-drying technology produces freeze-dried durian, facilitating storage and transportation.

2.3 Durian Foods

Beyond fresh and frozen durians, Thailand's durian food industry is thriving, producing durian candy, cookies, cakes, and ice cream. These products are popular both domestically and internationally, adding significant value to Thailand's durian industry chain.

2.4 Industry Management

2.4.1 Orchard Scale and Mechanization

Thailand is renowned for its diverse and extensive agriculture, and its orchards are no exception. Thai orchards, often sprawling across vast landscapes, are typically large and well-suited for mechanized management. This scale of operation allows for more efficient cultivation, harvesting, and processing of a wide variety of fruits. Durian is known as the "king of fruits". It is celebrated for its unique taste and aroma. Thai durians, particularly from regions like Chantaburi, are highly prized.

The large scale of Thai durian orchards allows for the integration of mechanized management practices, which enhances efficiency and productivity. Key

aspects of this mechanization include advanced irrigation systems with efficient harvesting equipment, effective fertilization and pest control, and qualified processing facilities.

2.4.2 Breeding:

Breeding durian involves selecting and developing varieties that exhibit desirable traits such as improved flavour, higher yield, disease resistance, and longer shelf life. The breeding process of durian is complex and requires careful consideration of various factors to achieve successful results. The primary objectives of durian breeding are to enhance flavor and aroma, to increase yield, to resist disease and pest, to improve fruit quality, and to extend shelf life. Usually, the breeding process from planting to fruiting takes approximately 6-8 years, with normal yields beginning after 18 years.

2.4.3 Planting Management:

Durian cultivation in Thailand involves meticulous planning and management to ensure high-quality fruit production. Given the economic and cultural significance of durian in Thailand, efficient planting management practices are essential. These practices cover various stages, from site selection and soil preparation to planting, maintenance, and harvesting.

Climate and Location

- **Climate Requirements:** Durian thrives in tropical climates with high humidity, ample rainfall (1,500-2,000 mm annually), and temperatures ranging between 24-30°C.
- **Location:** Suitable locations are generally in

southern and eastern Thailand, such as Chantaburi, Rayong, and Nakhon Si Thammarat, where climatic conditions support optimal growth.

Soil Requirements

- **Soil Type:** Well-drained, loamy soils rich in organic matter are ideal for durian cultivation. Avoid waterlogged or heavy clay soils.
- **Soil pH:** A slightly acidic to neutral pH range (5.5-6.5) is preferred.
- **Soil Preparation:** Before planting, the soil is tested and amended as needed. Organic matter such as compost or manure is incorporated to improve fertility. Raised beds or mounds are often prepared to enhance drainage.

Seedling Selection and Propagation

- **Grafted Seedlings:** Grafted seedlings are preferred for their uniformity and early fruiting. Grafting combines a hardy rootstock with a scion from a high-yielding variety.
- **Nursery Management:** Seedlings are grown in nurseries for 6-12 months before transplanting to ensure strong root systems and healthy growth.

Planting Layout and Spacing

- **Spacing:** Trees are typically spaced 8-10 meters apart to allow for adequate air circulation, sunlight penetration, and future growth.
- **Planting Holes:** Holes are dug 60-80 cm deep and wide. A mixture of topsoil and organic matter is used to fill the holes partially before planting.
- **Transplanting:** Seedlings are carefully transplanted to avoid root damage. The root ball is kept intact, and the tree is planted at the same depth as in the nursery.

Watering and Irrigation

- **Watering Needs:** Regular watering is crucial, especially during the dry season. Drip or sprinkler irrigation systems are commonly used to ensure consistent moisture levels.
- **Mulching:** Mulching around the base of the trees helps retain soil moisture, regulate temperature, and suppress weeds.

Fertilization

- **Nutrient Requirements:** Durian trees require balanced fertilisation with nitrogen, phosphorus, potassium, and micronutrients.
- **Fertilisation Schedule:** Fertilizers are applied at regular intervals throughout the growing season. Organic and chemical fertilisers are often combined to provide comprehensive nutrition.

Pruning and Training

- **Pruning:** Regular pruning helps maintain tree shape, remove dead or diseased branches, and improve light penetration.
- **Training:** Young trees are trained to develop a strong central leader and well-spaced lateral branches for optimal fruit production.

Pest and Disease Management

- **Common Pests:** Durian trees are susceptible to pests such as fruit borers, aphids, and mites.
- **Disease Management:** Fungal diseases like Phytophthora can be problematic. Integrated pest management (IPM) strategies, including biological controls, chemical treatments, and cultural practices, are employed to manage pests and diseases effectively.

Harvesting

- **Maturity Indicators:** Durian fruit is harvested when it reaches physiological maturity, indicated by changes in color, aroma, and the ease with which

the fruit detaches from the tree.

- **Harvesting Methods:** Fruits are typically harvested manually using poles with hooks or nets to prevent damage.

Post-Harvest Handling

- **Cleaning and Sorting:** Fruits are cleaned and sorted based on size, weight, and quality.
- **Storage and Transport:** Proper storage and transport conditions, such as cool temperatures and ventilation, are essential to maintain fruit quality and extend shelf life.

Sustainable Practices

- **Organic Farming:** Increasing adoption of organic farming practices to reduce chemical use and enhance soil health.
- **Agroforestry:** Integrating durian cultivation with other crops and trees to promote biodiversity and sustainable land use.

Technological Innovations

- **Precision Agriculture:** The goal of precision agriculture can be achieved by using technology, such as drones and sensors, to monitor crop health, soil conditions, and pest activity.
- **Research and Development:** keep eyes on ongoing research into new durian varieties, pest-resistant strains, and improved cultivation techniques to boost productivity and sustainability.

3 Thailand's Durian in the Export Market

The global durian market has expanded rapidly in recent years, with China becoming a key battleground for major durian exporters.

3.1 Development Trend of durian in the Chinese Market

Chinese customs data indicate explosive growth in China's durian market. The annual compound growth rate remains between 30% and 50%, with expectations to sustain this rate over the next five years. Despite a growing base, the compound annual growth rate is projected to stay between 20% and 30% over the next decade, indicating continuous growth in durian consumption and market size in China. Due to the increasing supply from Thailand and other Southeast Asian countries, durian prices in China are predicted to decline.

3.2 Thailand's Competitive Position in the Chinese Market

Thailand has traditionally dominated the Chinese durian market. In 2023, Thailand exported approximately 980,000 tons of fresh durians to China, capturing 60% of the market. However, this represents a decline from 800,000 tons in 2022 and a 90% market share, with Vietnam rapidly filling the gap.

3.3 The Rise of Vietnam and Challenges for Thailand in the durian market

Vietnam's durian exports to China increased tenfold in 2023, reaching parity with Thailand. An estimated annual production of durian in Vietnam by 2023 is 700,000 metric tons. The rise of Vietnam as a durian exporter presents significant challenges for Thailand. The rapid growth in Vietnamese durian exports is attributable to government support, close market ties with China, expanding cultivation areas, and increasing factory numbers. The overlap in planting and export seasons with Thailand exacerbates direct competition.

3.4 Durian Development in Indonesia and the Philippines

Despite substantial production, Indonesia and the Philippines have lower commercialisation levels, limiting their competitive edge against Thailand and Vietnam.

3.4.1 The Philippines

The Philippines have made strides in global durian exports but faces stiff competition and significant market potential challenges. The largest durian orchards in Davao and surrounding provinces are only 10-20 hectares and need more mechanised operations. In contrast, Thai durian orchards employ advanced mechanisation and standardised management, significantly enhancing yield and economic benefits.

The Philippines lack unified production and quality standards, leading to inconsistent product quality. Recent detections of heavy metals in Philippine durians exported to China have damaged their reputation.

3.4.2 Indonesia

Indonesia produces several traditional durian varieties, with the Golden Pillow durian holding significant potential in the Chinese market. Indonesian durians are competitively priced compared to Philippine durians. However, Indonesian durians have yet to gain export approval to China, although this will likely change soon. Once approved, Indonesian Golden Pillow durians are expected to compete strongly in the Chinese market.

3.4.3 Future Predictions for Indonesia and the Philippines

Both countries must enhance orchard management, scale, and mechanisation to achieve standardised production. While occupying a significant share in the Chinese market may take 5 to 10 years, improvements in existing orchards can enhance product quality.

3.4.4 The Malaysian Durian Market

Malaysia is renowned for its Musang King and Black Thorn durians, which are positioned as high-end products due to their limited production. Malaysian enterprises and the government have excelled in promoting the durian industry. Significant investments in planting are expected to double Malaysia's durian supply in the next few years, potentially lowering prices and increasing exports. Malaysia's processing capabilities and quality control in durian products give it a competitive edge.

4 Competitive Advantages of Thailand's Durian Industry

There are several key factors to the competitive advantage of the Thai durian industry. Generally, it can be summarised as Thailand's geographical advantage, varietal diversity, government support, established export markets, technological advancements, brand reputation, economic scale, and developed durian research.

Regarding geographical advantage, Thailand has a tropical climate and fertile soil, which can create ideal conditions for durian cultivation, leading to high-quality and flavorful produce that stands out in the global market. Second, Thailand offers various

durian varieties, such as Monthong, Chanee, and Kanyao, catering to diverse consumer preferences and enhancing market appeal. Third, the Thai government actively promotes durian exports through initiatives like quality certification, marketing campaigns, and infrastructure development to boost the industry's global competitiveness. Fourth, Thailand has established strong export relationships with major durian-importing countries, particularly China, ensuring a stable and growing demand for its durians. Fifth, Thailand actively promotes modern agricultural techniques and technologies to improve yield, quality, and shelf life, positioning Thailand as a durian production and export leader. Sixth, the Thai durian business respects brand building. Over a decade, Thailand has been renowned for its durian taste and quality, and it has a strong brand reputation that attracts premium prices in international markets. Seventh, large-scale production and a well-developed supply chain play an important role, enabling cost efficiencies in quantity and pricing. Last but not least, the Thai durian business continuously invests in R&D, which enhances cultivation practices, pest management, and post-harvest processing, contributing to the sustained competitive edge of the Thai durian industry.

5 Impact of E-commerce and Financial Capital on the Durian Industry

The impact of e-commerce on the durian industry is substantial, particularly in terms of market expansion, consumer reach, supply chain enhancement, and more effective marketing efforts. E-commerce platforms enable durian producers to access a broader, global customer base, facilitating direct-to-consumer sales and bypassing traditional intermediaries. This not only improves profit mar-

gins but also strengthens customer relationships. Additionally, online marketing tools and social media have significantly raised brand awareness and driven consumer interest in durian products.

However, the increased engagement of e-commerce platforms, such as Pinduoduo and Alibaba, has introduced challenges despite their contributions to market expansion and cost reduction. These platforms often offer durian products at unsustainably low prices, resulting in the exclusion of numerous durian suppliers from the market. The aggressive pricing strategies set by these platforms sometimes undercut market standards to the extent that they could be more economically viable for many suppliers.

The involvement of third-party financial capital exacerbates these issues, enabling certain e-commerce platforms to leverage their capital advantages to lower prices further while compromising product quality. Our study has documented numerous complaints from various countries about the disruption of market orders and the decline in durian harvest quality. These complaints often stem from platforms prioritising rapid market acquisition through low-price strategies, neglecting quality assurance.

To address these concerns, we strongly recommend that financial capital support and e-commerce practices should aim to promote and sustain traders and producers. This includes ensuring a stable market supply and adhering to standardised practices that maintain product quality. E-commerce and financial capital should act as positive forces in the durian industry, fostering growth and stability rather than undermining market integrity and product standards.

6 Durian Derivative Products Industry

The market for durian derivatives, including frozen durian, desserts, cakes, and ice creams, is experiencing significant growth in China. This expansion is primarily driven by the extended shelf life of frozen durians and the diverse range of durian-based products available. Popular items in this market include durian mille crepe cakes, durian pizza, durian bubble tea, and durian ice cream, reflecting the versatility and widespread appeal of durian derivatives.

Despite the rapid market growth, several challenges need to be addressed. The foremost issues involve the lack of unified standards and the need for advanced processing technology for durian flesh and paste. These deficiencies affect the overall quality and consistency of durian derivative products. To ensure sustained growth and consumer satisfaction, it is essential to develop standardised processing protocols and invest in technological advancements that enhance the quality and reliability of durian products.

7 Conclusion

Thailand's comprehensive and efficient durian industry chain has long secured its leading position in the international market. However, the increasing global demand and the rise of emerging export countries, particularly Vietnam, pose significant competition. Thailand must focus on several key areas to maintain and strengthen its market share and competitiveness.

First, strengthening regulatory frameworks and improving production standards are critical to ensuring Thai durians' consistent quality and safety.

Second, optimising orchard management practices can enhance yield and efficiency, addressing environmental sustainability and economic viability. Third, expanding the range of durian-derived products can diversify Thailand's market offerings and reduce dependence on fresh fruit exports alone. Moreover, Thailand should leverage e-commerce platforms more effectively and increase financial capital investments to enhance market presence and brand value. It should be assured that financial capital support and e-commerce practices should aim to promote and sustain traders and producers. This includes ensuring a stable market supply and adhering to standardised practices that maintain product quality. E-commerce and financial capital should act as positive forces in the durian industry, fostering growth and stability rather than undermining market integrity and product standards, therefore, ensuring that durians and their derived products are more accessible and appealing to a broader mass market, thereby securing sustained global competitiveness in the future.

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development process, involving consulting, education, research, publications, incubation, wellness, legal counsel and compliance consulting, and healthcare provision. This enables the academy to integrate education, research, and practical application across various levels, including K-12 Education consulting, bachelor and master level of education, executive continuous education, micro-learning, and DBA programs in various fields.