



FROM MILK TO MEAT: INDIA'S JOURNEY AS A GLOBAL LEADER IN LIVESTOCK PRODUCT EXPORTS

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ABSTRACT

The livestock sector is a cornerstone of India's economy, supporting millions of small-scale farmers and herders while serving cultural, economic, and environmental purposes. Livestock meets the demand for animal products and generates income through items like milk, meat, and wool. It also holds cultural significance, supports traditional practices, and contributes to ecological balance. This study examines India's animal product industry, focusing on export performance over the past five years and its economic impact.

India is a global leader in livestock products, with notable achievements in dairy and animal husbandry. As of 2019, the livestock population stood at 536.76 million, a 4.8% increase since 2012. India is the largest producer of milk and the third-largest producer of eggs, with 2022-2023 animal product exports valued at Rs.32,597.39 crores. Key exports include buffalo meat, goat meat, and dairy products, underscoring the sector's role in feeding India's population and enhancing its global presence.

This research explores trends in India's animal product exports, focusing on commodity composition and destinations, especially ASEAN countries. Using secondary data from 2018-2023, it assesses trends, seasonal variations, and influencing factors. The study highlights the sector's nutritional and economic importance, guiding policy formulation and strategies for stabilizing production and exports.

Findings emphasize the need for improved research, infrastructure, and quality standards to enhance competitiveness and sustainability. The livestock sector's contributions to India's economy demonstrate its importance in fostering growth and strengthening the country's agricultural standing globally.

Keywords: Animal Product, Export Performance.

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INTRODUCTION

The livestock sector is a vital component of India's agricultural economy, providing food, employment, and income to millions. Livestock production includes activities such as dairy farming, poultry farming, goat farming, and meat production, all of which significantly contribute to the economy. India's diverse livestock resources make it one of the largest global producers of milk, meat, and other animal products. Beyond production, livestock plays social and cultural roles, especially in rural India, where animals like cattle and goats are integral to traditions, ceremonies, and livelihoods.

The growing demand for livestock products domestically and internationally has created significant opportunities for Indian farmers, processors, and exporters. In 2022, India ranked as the world's leading milk producer and the third-largest egg producer. The export of buffalo meat, goat meat, and dairy products contributes substantially to foreign exchange earnings, with the total export value in 2022-2023 reaching INR 32,597.39 crores.

This growth faces challenges such as resource competition, food safety concerns, and fluctuating global demand. Understanding trends, challenges, and opportunities in the animal product industry is crucial for stakeholders. This research examines the performance of India's animal product exports over five years, focusing on trends, product categories, and trade with ASEAN member countries. It offers insights into the export market while addressing strategic development areas.

NEED AND IMPORTANCE OF THE STUDY

The livestock sector is vital to India's agricultural economy, contributing to food security, employment, and rural development. Research on animal product exports highlights their economic value, nutritional importance, and role in global trade. It supports policy formulation, sustainability, and compliance with international standards, ensuring competitiveness and fostering resource-efficient practices.

OBJECTIVES OF THE STUDY

The objectives of the research are as follows:

- To analyse the structure and performance of the animal product industry in the Indian market.
- To examine the export trends and performance of major animal products from India to ASEAN members countries.

SCOPE OF THE STUDY

This study examines India's animal product export performance from 2018-2019 to 2022-2023, analyzing trends, key products like buffalo meat and dairy, and country-specific performance, particularly with ASEAN nations. It explores factors like exchange rates and global demand, offering insights for policymakers and stakeholders to enhance global market competitiveness.

RESEARCH METHODOLOGY

Research Design

The study adopts an analytical research design. Analytical research involves collecting and analysing existing data to critically evaluate and interpret trends. The study focuses on the performance of India's animal product exports based on secondary data sources.

Data Collection

The study relies on secondary data obtained from various reliable sources, including:

- APEDA (Agricultural and Processed Food Products Export Development Authority) reports
- Government publications and reports
- Journals, research articles, and books
- Websites of relevant trade organizations and export promotion councils
- Statistical data on exports provided by the Ministry of Commerce and Industry

Period of Study

The data for this research covers the five-year period from 2018-2019 to 2022-2023. This period provides a comprehensive view of the trends and dynamics in animal product exports.

Data Analysis Tools

The collected data is analysed using statistical tools such as:

- Trend analysis to identify patterns in export performance
- Product-wise and country-wise comparative analysis
- Percentage change calculations to assess growth

Limitations of the Study

- The study is limited to secondary data, which may not always be up-to-date or accurate.
- The research focuses on only ten major animal products as listed by APEDA.
- Time constraints limit the in-depth analysis of all aspects of the livestock industry.
- The study does not consider primary data or field surveys.

THEORETICAL BACKGROUND AND LITERATURE REVIEW

Livestock and Economic Development

Livestock plays a multi-dimensional role in the economy, providing food, employment, and income while contributing to rural development. Scholars such as Thornton (2010) have emphasized the dynamism of the livestock sector, particularly in developing countries where demand for animal products is driven by population growth, income levels, and urbanization. Thornton also highlights challenges such as resource competition and environmental constraints.

Export of Animal Products

The export of livestock products, including meat, dairy, and poultry, has been a significant contributor to global trade. Sree Vidhya and Elango (2019) analysed India's virtual water exports through livestock products, underscoring the environmental implications of export trade. Similarly, Moudgil et al. (2018) highlighted emerging challenges such as antibiotic resistance in food-producing animals, stressing the importance of quality control.

Quality and Safety in Animal Products

Quality and safety standards play a pivotal role in enhancing the competitiveness of animal products in global markets. Choquette et al. (2005) emphasized the importance of intrinsic and extrinsic quality attributes such as tenderness, flavour, and safety, which influence consumer preferences and repeat purchases. Compliance with international food safety standards is essential for sustaining export growth.

Role of Marketing and Trade Strategies

Vasilieva and Harvey (2020) examined the role of marketing mix strategies in promoting the export of animal products. They identified key factors such as pricing, innovation, and trade promotion that influence the competitiveness of exporters in global markets.

Trends in export of animal products

TABLE 4.6 EXPORT OF ANIMAL PRODUCTS

Products/ Years	Buffalo meat	Dairy products	Natural honey	Poultry products	casein	Sheep/goat meat	Animal casing	albumin	Other meat	Processed meat	Total	Rank
2018-2019	2516830.67	242301	73218.8	68731.5	22052.6	79064.9	48066.3	10306.3	1373.04	1351.94	3063297.3	3
2019-2020	2266847.07	134101	63379.5	57458.3	754.74	64669.1	39849.8	8234.59	1632.18	1472.24	2638398.9	5
2020-2021	2346038.3	149166	71613.3	43552.9	18041.5	32996.4	41654.3	9497.02	1805.59	1191.99	2715557.1	4
2021-2022	2461323.96	292880	122118	52980.3	59278.4	44757.7	47403.7	8981.58	4551.71	1055.83	3095330.4	2
2022-2023	2564810.15	226985	162277	108162	81631.9	53717.7	32601.6	26688.5	1692.65	1171.78	3259738.2	1
Mean	2431170.03	209087	98521.3	66176.9	36351.8	55041.2	41915.1	12741.6	2211.03	1248.76		
SD	122837.426	66441.9	42487.7	25155.8	33101.4	17771.5	6305.47	7833.01	1318.06	163.524		
CV	0.05052605	0.31777	0.43125	0.38013	0.91058	0.32288	0.15043	0.61476	0.59613	0.13095		
CAGR	0.00378395	-0.013	0.17254	0.09492	0.29921	-0.0744	-0.0747	0.20961	0.04274	-0.0282		

Source: Computed Data

(SD- Standard Deviation, CV- Co efficient of variation, CAGR- Compound Annual Growth Rate)

The table highlights the trends in the export of various animal products between 2018-2019 and 2022-2023, analyzing key indicators such as the mean export value, standard deviation (SD), coefficient of variation (CV), and compound annual growth rate (CAGR). Among all the products, buffalo meat remains the largest contributor to total animal product exports, with steady growth reflected in its low variability (CV of 0.05) and a CAGR of 0.38%. Dairy products, on the other hand, showed fluctuations, peaking in 2021-2022 but eventually declining, resulting in a negative CAGR of -1.3% and moderate variability (CV of 0.32).

Natural honey stood out with the highest CAGR of 17.25%, signaling strong growth, though it exhibited significant volatility with a CV of 0.43. Poultry products also displayed notable progress, achieving a CAGR of 9.49%, despite moderate fluctuations in exports. Casein demonstrated the most substantial growth at 29.92%, but its exports remained inconsistent, as evidenced by its high CV of 0.91.

Conversely, the exports of sheep/goat meat and animal casing witnessed a decline, with respective CAGRs of -7.44% and -7.47%, though sheep/goat meat maintained moderate stability (CV of 0.32). Albumin exports, despite their smaller contribution, grew significantly with a CAGR of 20.96%, albeit with a relatively high CV of 0.61, indicating inconsistency in demand or supply.

Other meat products showed slow but positive growth with a CAGR of 4.27%, while processed meat exports declined slightly, with a stable CV of 0.13.

Overall, buffalo meat continues to dominate animal product exports, while natural honey, albumin, and casein emerge as promising high-growth segments. The decline in products such as sheep/goat meat and processed meat, coupled with volatility in specific categories, suggests the need for focused strategies to address challenges and enhance overall export performance.

REGION WISE ANIMAL PRODUCT

The following table highlights the different region-wise contributions in exports performance of top three ranked different types of products such as Buffalo meat, Dairy products, Natural honey, Poultry products, casein, Sheep/goat meat, Animal casing, albumin, other meat and Processed meat.

COUNTRY WISE EXPORT OF NATURAL HONEY FOR THE YEAR 2018-2019 TO 2022-2023

Years	2018-19		2019-20		2020-21		2021-22		2022-23	
Importing Countries	Rs. Lacs	Percentage	Rs. Lacs	Percentage	Rs. Lacs	Percentage	Rs. Lacs	Percentage	Rs. Lacs	Percentage
Malaysia	112.27	33.46%	168.59	43.76%	177.59	28.46%	271.09	63.97%	271.1	48.52%
Singapore	182.19	54.30%	204.64	53.12%	294	47.12%	127.32	30.05%	242.49	43.40%
Indonesia	0.05	0.01%	7.1	1.84%	147.16	23.59%	13.47	3.18%	41.69	7.46%
Philippines	38.26	11.40%	1.48	0.38%	4.05	0.65%	4.64	1.09%	2.63	0.47%
Cambodia	0.31	0.09%	0.14	0.04%	0.61	0.10%	0.49	0.12%	0.58	0.10%
Thailand	1.24	0.37%	0	0.00%	0	0.00%	1.11	0.26%	0.21	0.04%
Vietnam Soc Rep	0.08	0.02%	2.41	0.63%	0	0.00%	0.81	0.19%	0	0.00%
Brunei	1.1	0.33%	0.87	0.23%	0.54	0.09%	4.82	1.14%	0	0.00%
Total	335.5	100.00%	385.23	100.00%	623.95	100.00%	423.75	100.00%	558.7	100.00%
Rank	5		4		1		3		2	

Source: DGCIS

The table presents data on natural honey exports to various countries over five years, analyzing both the export value (in Rs. Lacs) and percentage share. From 2018-2019 to 2022-2023, Malaysia, Singapore, and Indonesia emerged as the primary importers of Indian natural honey, with notable variations in their contribution.

Malaysia showed a significant increase in imports, rising from 33.46% in 2018-2019 to 48.52% in 2022-2023. The highest share for Malaysia was recorded in 2021-2022 at 63.97%, indicating strong demand in that year.

Singapore consistently maintained a major share of honey imports, though its dominance fluctuated. Starting at 54.3% in 2018-2019, Singapore's share dropped to 30.05% in 2021-2022 but rebounded to 43.4% in 2022-2023. This reflects the country's continued significance as a stable market for Indian natural honey.

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Indonesia witnessed remarkable growth, particularly in 2020-2021, when its share peaked at 23.59% (Rs. 147.16 Lacs). However, its share declined in subsequent years, falling to 7.46% by 2022-2023, suggesting inconsistencies in demand or trade dynamics.

In contrast, the Philippines showed a downward trend, with its share dropping from 11.4% in 2018-2019 to a mere 0.47% in 2022-2023, indicating reduced demand. Countries like Cambodia and Thailand maintained very small shares, reflecting limited market presence. Notably, Vietnam and Brunei experienced negligible or zero imports in specific years, showing an inconsistent trend.

The total export value of natural honey fluctuated over the five years. The highest export value was recorded in 2020-2021 at Rs. 623.95 Lacs, followed by 2022-2023 at Rs. 558.7 Lacs. The ranking indicates that 2020-2021 was the most successful year for honey exports, with subsequent years experiencing variability.

In overall all Malaysia and Singapore emerged as the leading importers of natural honey, with consistent high shares, while Indonesia showed intermittent growth. The Philippines and smaller markets like Cambodia and Thailand contributed marginally. The fluctuations in total exports suggest varying demand across countries, requiring strategic efforts to stabilize and expand India's honey exports in key markets.

Country wise export of dairy products for the year 2018-2019 to 2022-2023

The table showcases the trends in the export of animal products to various countries over the period from 2018-2019 to 2022-2023, detailing the export values (in Rs. Lacs) and their corresponding percentage contributions. The data reveals significant variations in export performance across countries during the five years.

Singapore consistently remained a key importer, with its share fluctuating but staying prominent. Starting at 27.29% in 2018-2019, Singapore's exports peaked in 2019-2020 at 59.26% and remained strong in 2022-2023 at 56.03%, signifying stable and growing demand for animal products in this market.

Country wise export of dairy products for the year 2018-2019 to 2022-2023

Year	2018-19		2019-20		2020-21		2021-22		2022-23	
	Rs. Lacs	Percentage	Rs. Lacs	Percentage	Rs. Lacs	Percentage	Rs. Lacs	Percentage	Rs. Lacs	Percentage
Singapore	7503.47	27.29%	8153.32	59.26%	11328.08	57.84%	10972.6	25.23%	12920.26	56.03%
Indonesia	4813.33	17.50%	2817.61	20.48%	794.09	4.05%	8860.2	20.37%	4333.9	18.80%
Malaysia	9508.19	34.57%	1026.79	7.46%	6342.15	32.38%	18921.25	43.50%	2225.17	9.65%
Thailand	3336.13	12.13%	760.62	5.53%	363.82	1.86%	3563.9	8.19%	1571.28	6.81%
Philippines	1573.26	5.72%	825.97	6.00%	498.66	2.55%	540.88	1.24%	1459.54	6.33%
Myanmar	679.55	2.47%	36.11	0.26%	65.92	0.34%	441.63	1.02%	350.05	1.52%
Brunei	55.52	0.20%	106.15	0.77%	122.43	0.63%	103.44	0.24%	128.78	0.56%
Vietnam Soc Rep	19.54	0.07%	28.94	0.21%	50.94	0.26%	74.43	0.17%	53.59	0.23%
Cambodia	11.33	0.04%	3.05	0.02%	18.73	0.10%	14.68	0.03%	15.31	0.07%
Total	27,500.32	100.00%	13,758.56	100.00%	19,584.82	100.00%	43,493.01	100.00%	23,057.88	100.00%
Rank	2		5		4		1		3	

Source: DGCIS

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Indonesia showed irregular trends, with exports contributing 17.5% in 2018-2019 but dropping sharply to 4.05% in 2020-2021. However, it rebounded significantly to 20.37% in 2021-2022, reflecting inconsistent but notable demand over the years. In 2022-2023, Indonesia's share stabilized at 18.80%. Malaysia exhibited significant fluctuations. It started as the largest importer in 2018-2019 with 34.57%, but its share fell sharply to 7.46% in 2019-2020. Exports rebounded strongly in 2021-2022, reaching 43.50%, the highest among all countries that year. However, it declined again to 9.65% in 2022-2023, suggesting inconsistent trade patterns.

Thailand experienced a decline in its share over the years. From 12.13% in 2018-2019, it fell to 1.86% in 2020-2021 but regained momentum to 8.19% in 2021-2022. By 2022-2023, Thailand's share settled at 6.81%, showing modest recovery.

The Philippines maintained a smaller but steady share, fluctuating between 5.72% in 2018-2019 and 6.33% in 2022-2023. While its exports dropped to 1.24% in 2021-2022, the market bounced back, highlighting a relatively consistent demand for Indian products.

Myanmar and Brunei contributed marginally throughout the five-year period. Myanmar's share dropped significantly in 2019-2020 but showed minor recovery in subsequent years, peaking at 1.52% in 2022-2023. Similarly, Brunei's contribution remained below 1% throughout, indicating limited trade activity. Vietnam and Cambodia consistently accounted for a negligible share of exports, with values ranging between 0.03% and 0.26%, reflecting minimal demand from these markets.

The total export value varied significantly over the years. The highest total was recorded in 2021-2022 at Rs. 43,493.01 Lacs, ranking first, reflecting a strong export year overall. The lowest value occurred in 2019-2020 at Rs. 13,758.56 Lacs, placing it fifth. By 2022-2023, exports recovered to Rs. 23,057.88 Lacs, ranking third.

In overall Singapore and Malaysia emerged as the leading importers of animal products, with significant contributions across the years. Indonesia showed intermittent growth, while Thailand and the Philippines maintained moderate yet stable shares. Smaller markets like Myanmar, Brunei, Vietnam, and Cambodia exhibited minimal contributions. The overall export performance fluctuated, peaking in 2021-2022 and indicating both opportunities and challenges in maintaining consistent trade flows.

Country wise export of Buffalo meat for the year 2018-2019 to 2022-2023

The table provides an overview of country-wise exports over the five-year period from 2018-2019 to 2022-2023, highlighting export values (in Rs. Lacs) and their corresponding percentage shares. Key trends and variations are observed across different importing countries.

Country wise export of buffalo meat for the year 2018-2019 to 2022-2023

Year	2018-19		2019-20		2020-21		2021-22		2022-23	
Country	Rs. Lacs	Percentage	Rs. Lacs	Percentage	Rs. Lacs	Percentage	Rs. Lacs	Percentage	Rs. Lacs	Percentage
Malaysia	257463.3	13.77%	268277.77	19.49%	283506.2	30.44%	331762.9	31.53%	430000.17	34.44%
Vietnam Soc Rep	1191448.7	63.73%	756900.88	54.98%	299677	32.18%	363676.4	34.57%	408880.63	32.75%
Indonesia	226699.29	12.13%	165196.6	12.00%	226999.8	24.38%	228833	21.75%	252334.78	20.21%
Philippines	83887.93	4.49%	56172.37	4.08%	70800.51	7.60%	94676.83	9.00%	105478.88	8.45%
Cambodia	895.38	0.05%	4667.59	0.34%	21831.68	2.34%	22128.5	2.10%	25684.31	2.06%
Thailand	13547.44	0.72%	50402.22	3.66%	5144.46	0.55%	7191.98	0.68%	12862.45	1.03%
Singapore	749.27	0.04%	288.93	0.02%	335.71	0.04%	3334.17	0.32%	8204.36	0.66%
Brunei	5913.62	0.32%	6805.57	0.49%	0	0.00%	0	0.00%	4898.95	0.39%
Myanmar	88346.22	4.73%	66919.74	4.86%	22850.55	2.45%	461.11	0.04%	83.39	0.01%
Lao Pd Rp	670.02	0.04%	994.78	0.07%	69.28	0.01%	55.28	0.01%	0	0.00%
Total	1869621.1	100.00%	1376626.5	100.00%	931215.2	100.00%	1052120	100.00%	1248427.9	100.00%
Rank	1		2		5		4		3	

Source: DGCIS

Vietnam consistently remained a dominant importer, with the highest share of 63.73% in 2018-2019. However, its share declined significantly over the subsequent years, dropping to 32.18% in 2020-2021. Despite this, Vietnam maintained strong demand, ending at 32.75% in 2022-2023, reinforcing its role as a key market for Indian exports.

Malaysia showed a consistent upward trend in its share, starting at 13.77% in 2018-2019 and increasing to 34.44% in 2022-2023. The steady growth reflects Malaysia's rising demand and its increasing significance as a major importer of Indian products. Malaysia's peak export value occurred in 2022-2023, indicating sustained growth.

Indonesia maintained a steady performance throughout the five years, with its share fluctuating between 12.13% in 2018-2019 and 20.21% in 2022-2023. This consistent trend highlights Indonesia's stable demand for Indian products, positioning it as a reliable trade partner.

The Philippines showed notable growth in export shares, rising from 4.49% in 2018-2019 to 8.45% in 2022-2023. This consistent upward trend suggests strengthening trade relations and increasing demand for Indian products in the Philippines.

Cambodia demonstrated significant improvement in its share of exports. Although it contributed only 0.05% in 2018-2019, its share rose to 2.34% in 2020-2021 and stabilized at 2.06% in 2022-2023. This growth reflects emerging opportunities for trade expansion in Cambodia.

In contrast, Thailand and Singapore accounted for smaller shares over the years. Thailand's exports fluctuated, peaking at 3.66% in 2019-2020 before falling to 1.03% in 2022-2023. Similarly, Singapore contributed marginally, with its share reaching 0.66% in 2022-2023 after negligible contributions in earlier years.

Myanmar experienced a sharp decline in exports over the period. Starting at 4.73% in 2018-2019, its share fell drastically to a mere 0.01% in 2022-2023, reflecting reduced trade activity with this country.

Similarly, Brunei and Lao PDR had minimal and inconsistent shares throughout the period, indicating limited demand.

The total export value showed considerable fluctuations. The highest export value of Rs. 18,69,621.1 Lacs was recorded in 2018-2019, securing first place, while the lowest value occurred in 2020-2021 at Rs. 9,31,215.2 Lacs, ranking fifth. By 2022-2023, exports had improved to Rs. 12,48,427.9 Lacs, ranking third overall.

In Overall Vietnam and Malaysia emerged as the leading importers, with Vietnam showing dominance early on and Malaysia exhibiting strong growth. Indonesia and the Philippines maintained steady performances, while Cambodia displayed emerging potential. Conversely, Myanmar, Thailand, and Singapore showed declining or limited contributions. The total export value fluctuated significantly, peaking in 2018-2019 and showing recovery by 2022-2023. Strategic focus on key markets such as Vietnam, Malaysia, and Indonesia can help stabilize and further expand India's export performance.

Findings and Discussion

India's animal product exports demonstrated a consistent upward trajectory during the study period, driven primarily by the substantial contribution of buffalo meat and dairy products. Buffalo meat emerged as the dominant export item, consistently accounting for the largest share of total exports, followed by dairy products and poultry. The steady demand for these products highlights India's growing prominence as a key supplier in the global animal product market. Poultry products and natural honey also displayed positive trends, with increasing contributions, particularly in recent years, showcasing the diversity in India's export portfolio.

Country-specific trends indicate that ASEAN countries, including Malaysia, Vietnam, and Indonesia, have emerged as significant importers of Indian animal products. These countries exhibited a strong demand for buffalo meat, dairy products, and other processed animal items, underscoring India's growing trade relations in the Southeast Asian region. However, challenges such as antibiotic residues in animal products, resource limitations, and adherence to international food safety standards posed obstacles to export growth. Overcoming these challenges through improved quality control, compliance with global safety norms, and efficient resource management will be crucial for sustaining and expanding India's export potential in the coming years.

Conclusion and Suggestions

The export of animal products holds a crucial position in India's economy, serving as a major contributor to foreign exchange earnings and providing livelihoods to rural communities. India's strong position in global livestock production, particularly in buffalo meat and dairy products, highlights its potential to remain a leading exporter. However, challenges such as competition for resources, maintaining quality control, and overcoming trade barriers need to be addressed to ensure sustained growth and competitiveness in the international market.

Recommendations:

- **Strengthen Quality Control Measures:** Implement stringent quality checks and adopt international safety standards to enhance trust and acceptance of Indian animal products in global markets.
- **Diversify Export Markets:** Reduce reliance on specific countries or regions by exploring new markets, thereby minimizing risks associated with trade disruptions.

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- Promote Sustainable Livestock Farming: Encourage environmentally sustainable farming practices to address ecological concerns and ensure long-term resource availability.
- Focus on Value Addition and Innovation: Invest in processing technologies, product diversification, and innovation to enhance product quality, increase value, and improve India's competitiveness on the global stage.

By addressing these key areas, India can further strengthen its position in the international market and achieve sustainable growth in animal product exports.

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