



**Crisil**

a company of **S&P Global**



# **Monthly dashboard – Makhana (Fox-Nut)**

## **Oct-2025**

# **Acreage and production trends**



# Crop calendar for Makhana in India

| Months | Activities   |
|--------|--|
| Nov    | <b>Preparation &amp; Sowing:</b> Seeds are sown in prepared water bodies after land preparation.   |
| Dec    |  |
| Jan    | <b>Germination:</b> Seeds germinate, and early leaves start appearing on the water surface.<br><b>Water Level Maintenance:</b> Farmers maintain an optimal water level to support the growing seedlings. |
| Feb    | <b>Vegetative Growth:</b> Plants develop huge, thorny leaves that cover the water surface.   |
| Mar    | <b>Transplanting:</b> Seedlings are transferred from nursery plots to the main field.  |
| Apr    | <b>Flowering:</b> The flowers, which are violet-blue or dark pink, start to appear and reach their peak in May.  |
| May    | <b>Fruiting:</b> After flowering, the fruits are produced. They are round, spongy, and prickly.  |
| Jun    | <b>Fruiting Stage:</b> The fruits continue to mature underwater.   |
| Jul    | <b>Fruit Bursting:</b> Mature fruits burst underwater, scattering their seeds on the pond bottom.  |
| Aug    | <b>Harvesting:</b> The seeds, which have sunk to the bottom, are collected manually from the pond bed.<br><b>Seed Collection:</b> This is a strenuous and painstaking process for the farmers.           |
| Sep    |  |
| Oct    |  |

- Makhana cultivation is a year-long, water-dependent crop with critical stages like transplanting and underwater seed collection making it highly labor-intensive.
- The harvest window in August–October creates seasonal supply pressure, and the strenuous manual process indicates a strong need for mechanization and process improvements.

# India’s Makhana (Fox Nut) production trends and cultivation methods

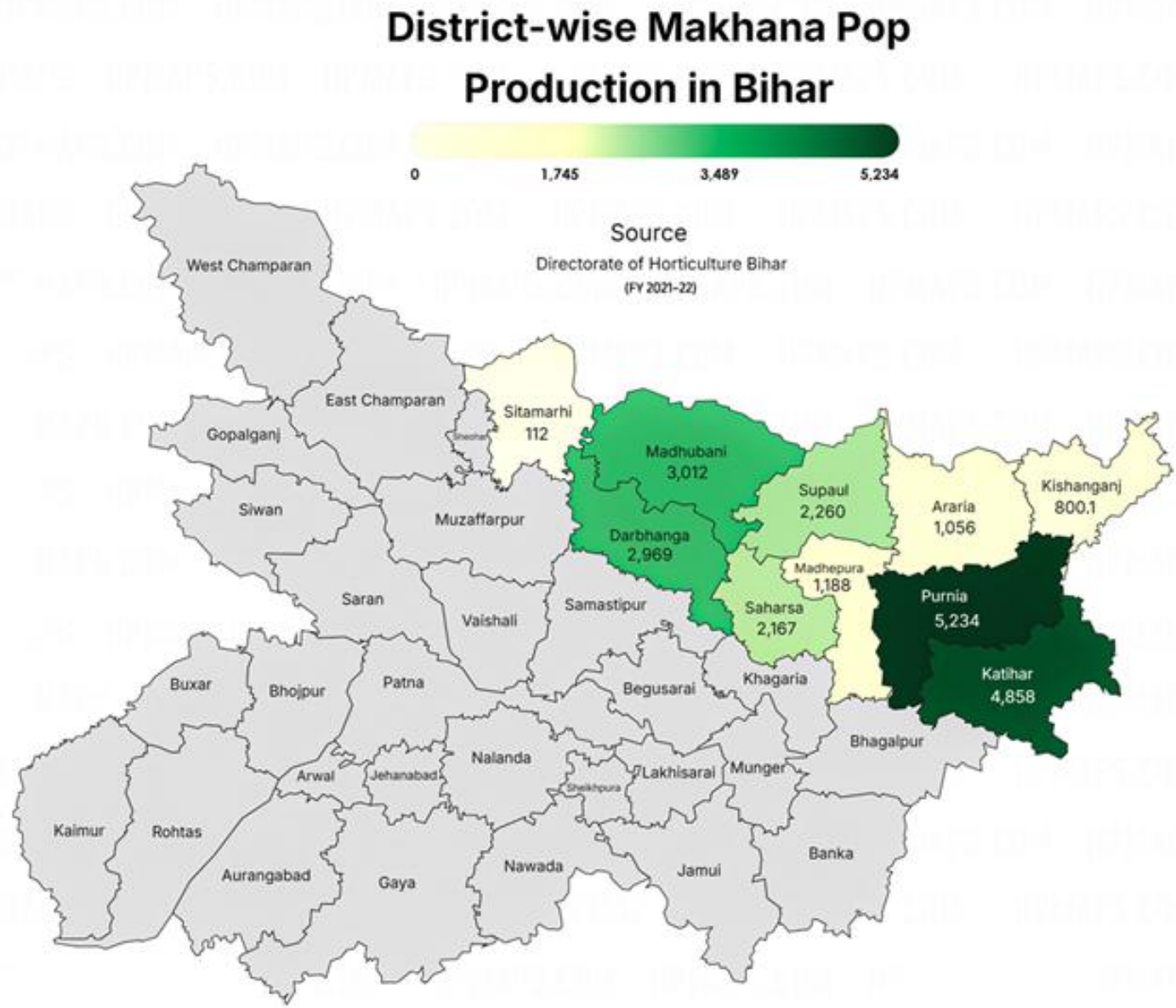
| Area and production of Makhana (Fox Nut) in India |             |                      |
|---|-------------|----------------------|
| Year  | Area (Ha)   | Seed production (MT) |
| 2020  | 25000-27000 | 40000-45000          |
| 2021  | 27000-28000 | 50000-58000          |
| 2022  | 28000-30000 | 65000-70000          |
| 2023  | 30000-32000 | 75000-85000          |
| 2024  | 32000-35000 | 90000-100000         |
| 2025 E  | 35000-40000 | 110000-120000        |

| Methods of Makhana (Fox Nut) Cultivation in India |                             |                                       |
|---|-----------------------------|---------------------------------------|
| Method  | Key Feature                 | Benefit                               |
| Pond Based  | Traditional, Most Widely    | High Yield, Low Input Cost            |
| Field Based                                       | Suitable for non-pond Areas | Expands Cultivation to New Regions    |
| Makhana + Fish (Integrated)                       | Dual Production System      | Higher Profit, Efficient Resource Use |

- India remains the undisputed global leader in Makhana production, with Bihar alone accounting for nearly 80–85% of the world’s output. Between 2020 and 2025, the sector witnessed a significant expansion: the cultivated area rose by 40–50% (from 25,000–27,000 hectares to 35,000–40,000 hectares), while total production almost tripled, increasing from **40,000–45,000 MT to 1.1–1.2 lakh MT**.
- This growth has been supported by improved agronomic practices, the shift toward field-based cultivation, and the wider adoption of integrated Makhana–fish farming systems, which have enhanced yields and farmer incomes.
- According to estimates from the Bihar Horticulture Board, seed Makhana output now stands at **~1.2 lakh MT, translating into 55,000–60,000 MT** of popped Makhana after processing.
- With the harvesting season now concluded across Bihar and other producing states, market supplies from November 2025 through August 2026 will rely entirely on stored popped Makhana, making storage quality and inventory management critical for price behavior over the next 10 months.



# District wise Makhana production in Bihar



- **Bihar contributes ~90% of India’s production** and nearly 80-85% of global supply, making it the undisputed leader in this sector.
- Traditionally grown in ponds, modern techniques like field-system farming and improved varieties such as **Swarna Vaidehi and Sabour Makhana-1** have helped increase in productivity.
- The crop has **gained GI tag (Mithila Makhana)** and is gaining export demand in markets like the US, Canada, and Australia.
- Government initiatives, research institutions, and organic farming drives are helping area expansion under the crop.
- However, the sector **faces challenges led by climate change, water scarcity, labor-intensive practices, price volatility, and lack of local processing infrastructure.**

## Budget 2025-26: Establishment of a ‘Makhana Board’

Makhana Board in Bihar, with an allocated budget of INR 1 billion. The Board aims to:

Support farmers with better seed varieties and modern agricultural practices to increase yields.

Facilitate access to government schemes, educate farmers on best practices, and create an organized market structure to eliminate intermediaries.



Establish local processing units to increase farmers' profitability and reduce dependence on middlemen.

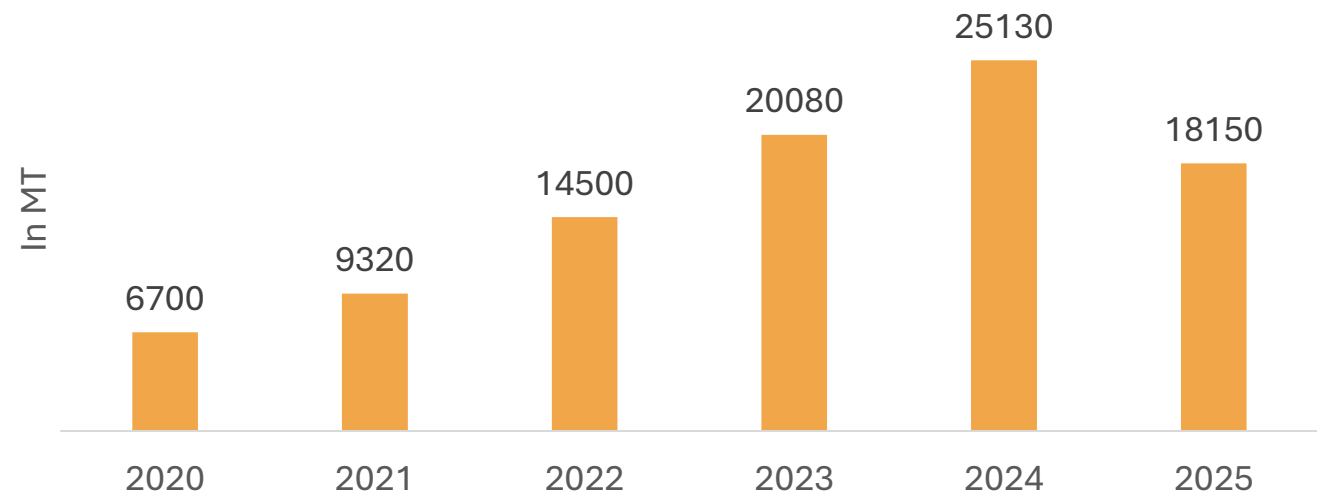
Promote makhana as a premium product in both domestic and global markets by assisting in branding, certification, and export facilitation.



# **Export and Import trends**

# Indian Makhana export trends

Indian Makhana exports (MT)



Note: 2025 exports are from Jan'25 to Oct'25

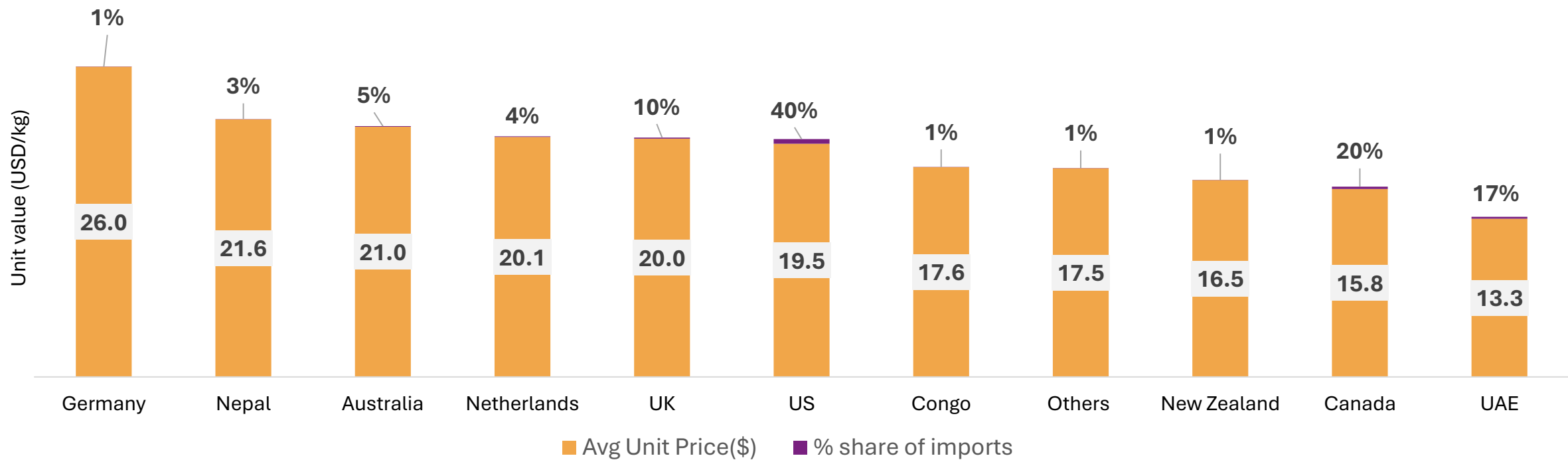
| Size (mm) | Grades | Usage                                 | Category |
|-----------|--------|---------------------------------------|----------|
| 12-15 MM  | 4 Suta | Economical, widely used in flavoring  | Regular  |
| 15-18 MM  | 5 Suta | Popular for regular snacking          | Good     |
| 18-21 MM  | 6 Suta | Premium market grade                  | High     |
| >21 MM    | 7 Suta | Extra-large, export-ready, high-value | Premium  |

- Indian Makhana exports grew nearly **4X from 6,700 MT in 2020 to 25,130 MT in 2024 (39% CAGR)**, driven by rising global health trends, improved production, better processing, and organic certifications. High and premium grades (>18 mm) lead exports due to high demand in international markets.
- India's 2025 exports, at around **18,150 MT from Jan-Oct**, are expected to end slightly below 2024's peak due to US tariffs and price pressure, which affect 40% of its exports.
- To drive future growth, the focus should shift towards premiumization, particularly in the **6 and 7 Suta segments**, as well as the **development of value-added products** and **robust branding strategies**, to maintain momentum in crucial markets such as the US, EU, and Middle East.



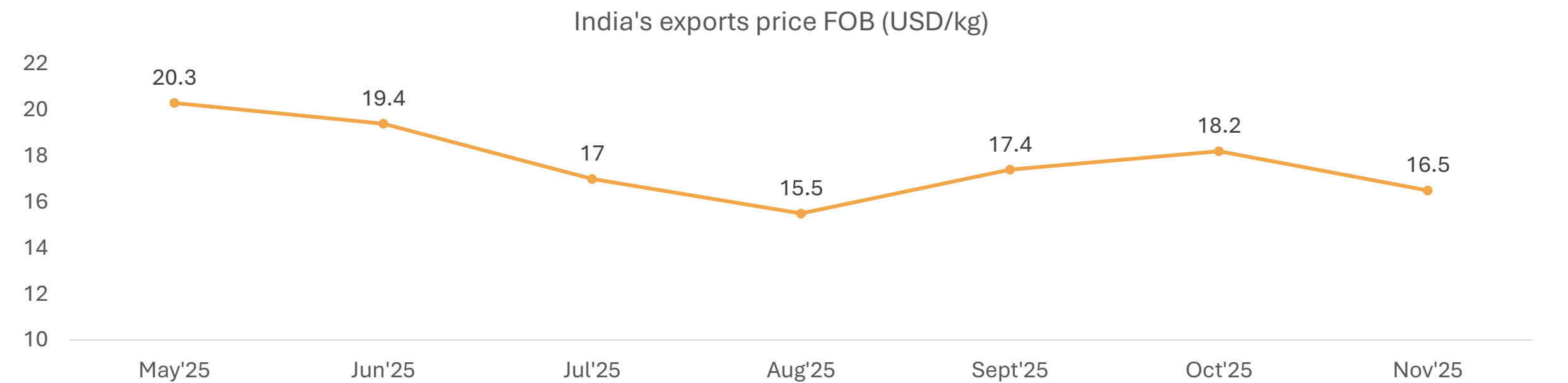
# Major importers of Indian Makhana

Top 10 importers of Makhana (2025)



- The major **importers of Indian Makhana are highly concentrated, with the US (40%), Canada (20%), and UAE (17%)** together accounting for 77% of total imports. However, these high-volume markets pay comparatively lower prices (US: \$19.5/kg, Canada: \$15.8/kg, UAE: \$13.3/kg).
- On the other hand, smaller markets like Germany (\$26.0/kg), Nepal (\$21.6/kg), and Australia (\$21.0/kg) fetch premium prices despite low shares (1–5%). **The UK stands out with a balanced profile (10% share, \$20/kg).**
- This **indicates an opportunity to diversify beyond the US and Gulf markets** by targeting premium-paying regions to enhance overall realizations, while also optimizing pricing in existing high-volume markets.

# Monthly export prices trends



*Note: Earlier, Makhana and its products was being exported under the HS code 19041090. However, from July'25 newly assigned HS codes for Makhana as under 20081921 (Makhana Popped), 20081922 (Makhana Flour and Powder), 20081929 (Other(Makhana))*

- Export prices of Makhana **have declined in recent months**, falling from USD 20.3/kg in May to USD 15.5/kg in August, before recovering slightly in September due to seasonal factors and strong domestic consumption.
- The price rebound is being driven by festive-led domestic demand and exporters' efforts to explore alternative markets such as South Africa, Australia, and the EU to mitigate the impact of US tariffs.
- **India's Makhana trade is undergoing a structural shift**, with **domestic demand playing a greater role in stabilizing prices**, while export growth depends on diversification, reducing reliance on the US market, and leveraging tariff-free access in emerging markets.
- Driven by festive demand, Makhana prices have risen slightly in domestic markets and export markets, **with export prices expected to fluctuate between USD 16-20 per kg in the coming quarters (OND)**, indicating a marginal upward trend, as stored stock sustains supply until the next season

# Promising export opportunities for Indian Makhana

## European Union (Germany, Netherlands, France) and UK

- Growing demand for plant-based and gluten-free snacks, creating a favorable market for Makhana products.
- Superfoods have a strong retail presence in organic chains and online platforms,
- Organic certification for Makhana products can help command premium pricing
- The Netherlands and Belgium can serve as strategic entry points for distributing Makhana products to EU market.

## Canada, Australia & South Africa

- Similar consumption pattern to US; strong Indian diaspora. High growth in organic snacks and clean-label products.
- Collaborate with ethnic stores and mainstream retail chains.

## Southeast Asia (Singapore, Malaysia, Thailand)

- Rising health-conscious urban population and preference for light snacks. Makhana can replace fried snacks in wellness markets.
- Target Singapore as a re-export hub for ASEAN markets. Introduce small pack sizes for convenience stores.

## Middle East (UAE, Saudi Arabia, Qatar)

- High demand for healthy snacks among expat and premium consumers. Large Indian diaspora ensures familiarity with makhana. Growing organic and vegan product segment in retail chains.
- Position makhana as a premium healthy snack in hypermarkets (Carrefour, Lulu, Spinneys). Offer flavored variants (spicy, masala, cheese) to suit local taste.



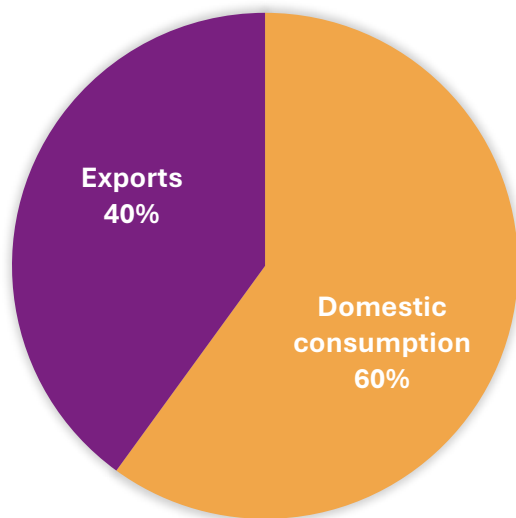


**Domestic  
market**



# Supply and demand of Makhana

Demand for makhana



- India produces about 0.6 lakh MT of Makhana, with 40% (0.23–0.25 lakh MT) exported and the rest consumed domestically. The market has grown 17–18% annually since 2021–22 – 2024-25, fueled by rising health awareness, premiumization, and the expansion of branded players.
- With its production leadership and growing global appetite for clean-label, plant-based superfoods, India is well-positioned to scale Makhana as a premium global snack.
- Value-added formats roasted, flavored, organic, and functional variants offer higher margins and strong export opportunities across the US, EU, Middle East, and Southeast Asia, where health-focused snacking is rapidly gaining traction.

## Estimated monthly domestic consumption (popped)

India’s monthly domestic consumption of popped Makhana is estimated at 3,000–3,500 MT, rising to ~5,000 MT during festive months when snacking demand peaks.

- Branded FMCG & organized snacks: 1,800–2,000 MT/month, driven by rapid category premiumization and wider retail penetration.
- Loose/unorganized retail: 1,200–1,400 MT/month, still significant in Tier-2/3 markets despite improving shift toward packaged formats.

Export demand contributes an additional 1,800–2,000 MT/month, with slight variations depending on domestic stocking cycles.

### Current Market Stock Position (MY 2026)

- India presently holds **40,000–42,000 MT** of popped Makhana stocks for MY26. These stocks are expected to sustain supply until the next harvest cycle beginning August 2026, indicating a moderately comfortable supply scenario but with tightening margins if demand accelerates.

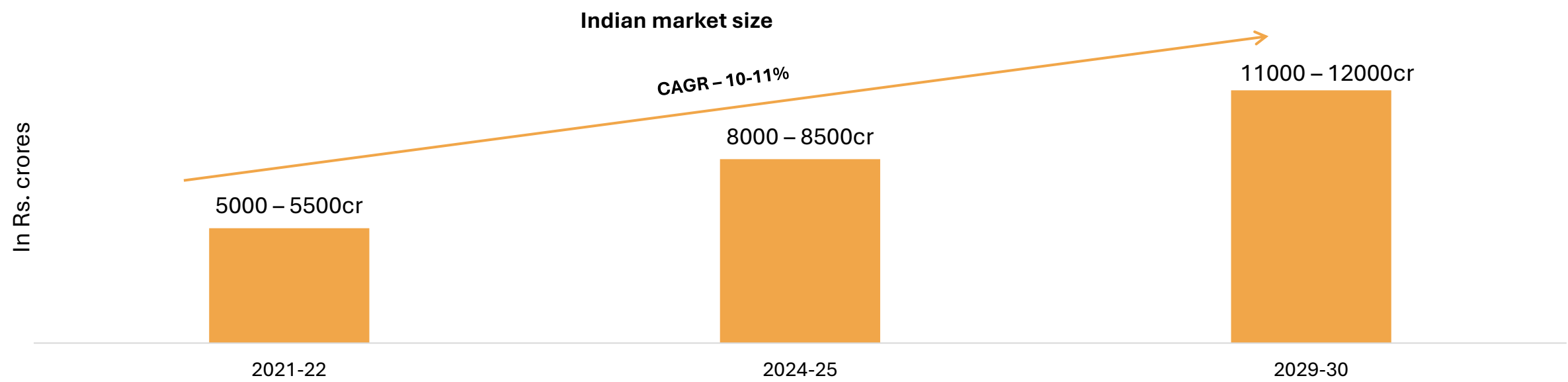
### Climatic Risk Outlook: La Niña Impact

A 60% probability of La Niña during Nov–Jan 2025–26 raises concern for the upcoming crop. Colder-than-normal conditions (2–4°C below average), extended cold waves, and reduced winter moisture may cause:

- 5–10% yield losses, driven by frost damage and irrigation delays.
- This downside risk could tighten raw Makhana availability during the next marketing year.



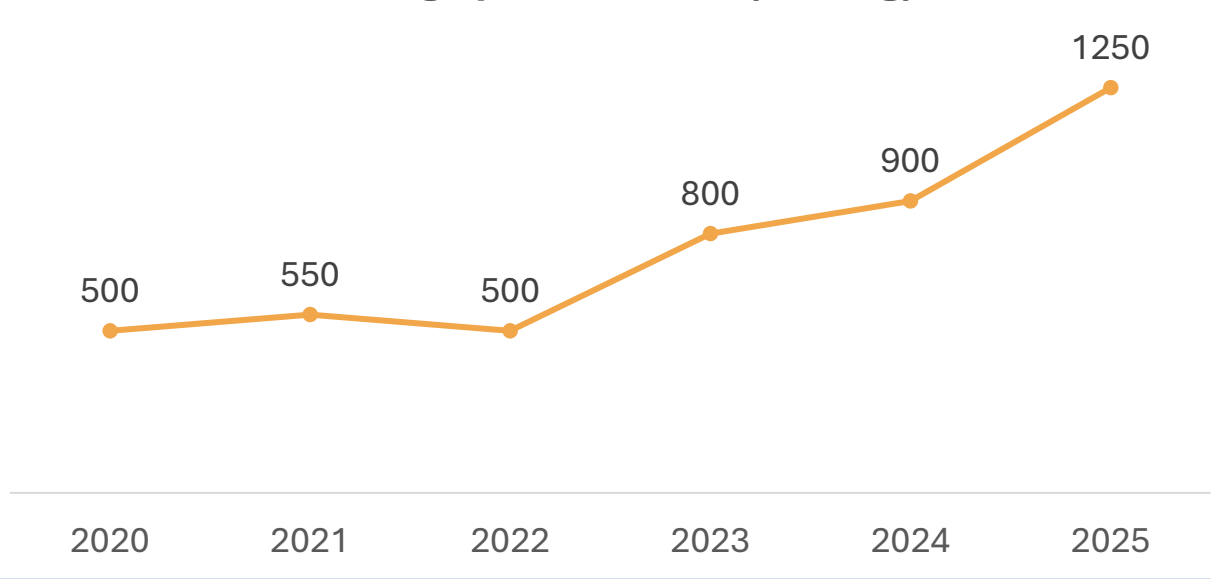
# Indian market size of Makhana



- **India's Makhana market has grown 17-18% annually from 2021-22 to 2024-25**, driven by health awareness, premiumization, and branded players, with domestic demand shielding the sector from export volatility.
- The market is **expected to reach ₹11,000-12,000 crore by 2029-30**, but growth is **largely price-led** due to marginal uptick observed in production volumes, rising only 4-5% from over the period of FY 2022-2025.
- Geographical constraints, with cultivation largely concentrated in Bihar's Mithilanchal and Kosi region, limit supply, keeps prices firm, highlighting opportunities for productivity gains, water management, and farmer support for sustainable growth.

# Domestic price trends

Average price in India (INR/Kg)



| Makhana Grades | Domestic prices (Rs. Per kg) |               |               |
|----------------|------------------------------|---------------|---------------|
|                | Sept'25                      | Oct'25        | Nov'25        |
| 4 Suta         | Rs. 600-630                  | Rs. 600-650   | Rs. 600-650   |
| 5 Suta         | Rs. 900-930                  | Rs. 900-930   | Rs. 900-950   |
| 6 Suta         | Rs. 1150-1200                | Rs. 1200-1220 | Rs. 1200-1220 |
| 7 Suta         | Rs. 1250-1300                | Rs 1220-1250  | Rs 1220-1250  |

Higher grades (6 and 7 Suta) continue to command a premium due to their larger size and better suitability for value-added processing and exports, whereas lower grades are more commonly absorbed in the domestic loose market.

- **Domestic Makhana prices** in India have **increased significantly from ₹500/kg in 2020-2022 to ₹1,250/kg in 2025**, driven by a shift towards health-focused snacking, premium branding, and supply constraints that have failed to keep pace with demand.
- **The domestic market is becoming more attractive** for processors than exports, with the United States, although the largest destination for Indian Makhana exports, having a negligible influence on domestic prices.
- Early cold in Bihar tightens supply (reduced pond access, frost risks); prices are expected to rise marginally (₹50-100/kg). La Niña (60% probability for Nov-Jan 2025-26) could exacerbate this with colder conditions (2-4°C below normal), longer cold waves, and drier winters potentially cutting yields by 5-10% via frost or delayed irrigation.
- The prices of lower-grade Makhana (4 and 5 Suta) have remained steady since September, reflecting market stability, while premium grades (6 and 7 Suta) have seen a ₹20-30/kg surge due to increased demand for superior quality, despite being broadly traded under the 6 Suta category.

**Thank You**