



Crisil

a company of **S&P Global**



Monthly dashboard – Makhana (Fox-Nut)

Acreage and production trends



Crop calendar for Makhana in India

Months	Activities
Nov	Preparation & Sowing: Seeds are sown in prepared water bodies after land preparation.
Dec	
Jan	Germination: Seeds germinate, and early leaves start appearing on the water surface. Water Level Maintenance: Farmers maintain an optimal water level to support the growing seedlings.
Feb	Vegetative Growth: Plants develop huge, thorny leaves that cover the water surface.
Mar	Transplanting: Seedlings are transferred from nursery plots to the main field.
Apr	Flowering: The flowers, which are violet-blue or dark pink, start to appear and reach their peak in May.
May	Fruiting: After flowering, the fruits are produced. They are round, spongy, and prickly.
Jun	Fruiting Stage: The fruits continue to mature underwater.
Jul	Fruit Bursting: Mature fruits burst underwater, scattering their seeds on the pond bottom.
Aug	Harvesting: The seeds, which have sunk to the bottom, are collected manually from the pond bed. Seed Collection: 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 (hect)	Seed production (MT)
2020	25000-27000	23000-25000
2021	27000-28000	46000-48000
2022	28000-30000	55000-57400
2023	30000-32000	57000-58000
2024	32000-35000	58000-60000
2025 E	35000-40000	60000-63000

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 leads global Makhana production, with **Bihar contributing ~80-85% of the world’s supply**. From 2020 to 2025, cultivation area grew 40–50% (25,000–27,000 to 35,000–40,000 hectares), and production nearly doubled (32,000–35,000 to 60,000–63,000 MT), driven by improved farming practices, traditional pond-based and field-based cultivation, and integrated Makhana-fish systems.
- These systems enhance profitability and resource use, expanding cultivation to new regions.
- **India has a strong opportunity to position Makhana as a premium healthy snack in global markets, leveraging the production dominance, rising superfood demand, and high-margin value-added products, especially in health-conscious markets like the US, EU, Middle East, and South-East Asia.**

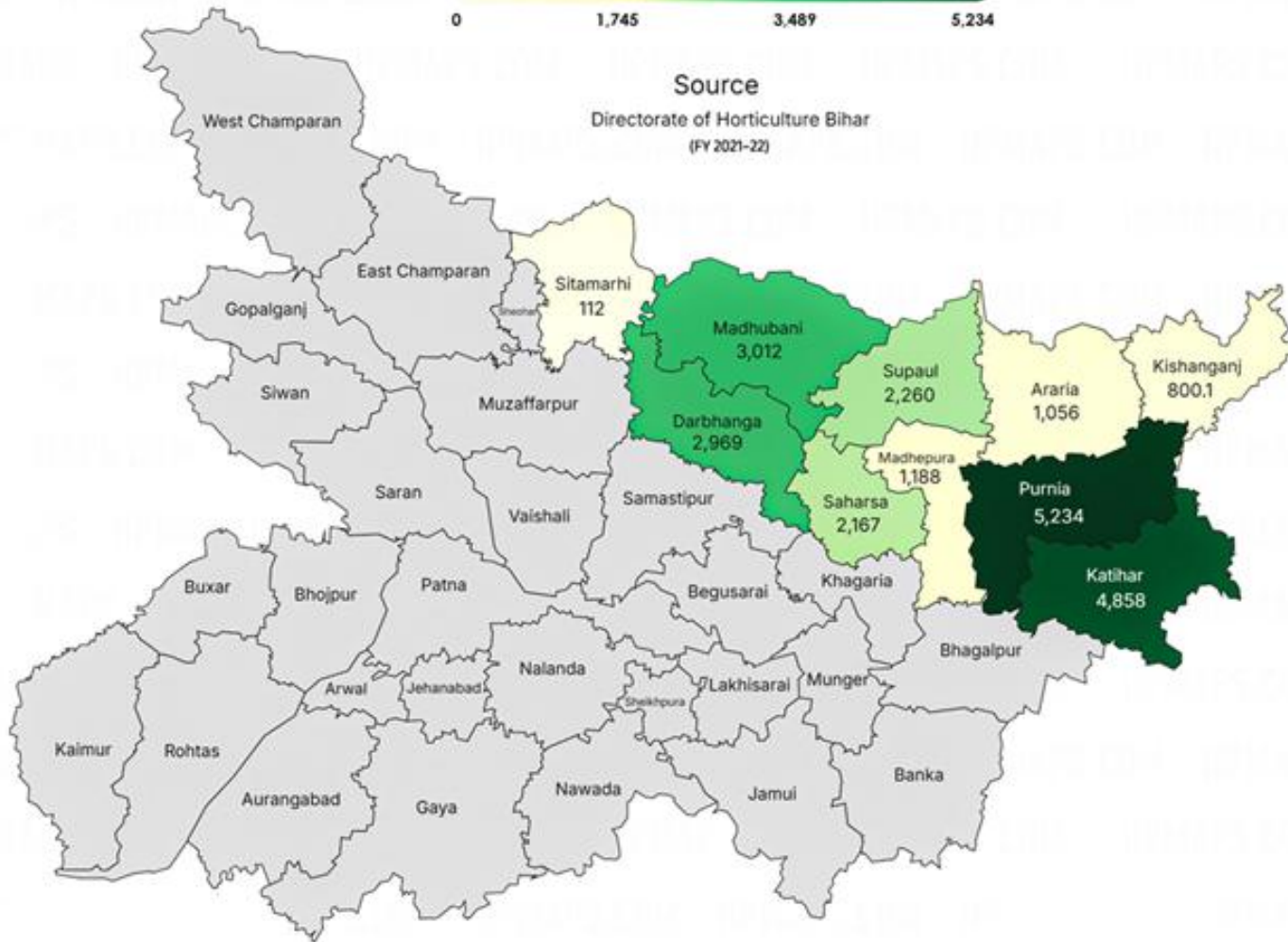
District wise Makhana production in Bihar

District-wise Makhana Pop Production in Bihar



Source

Directorate of Horticulture Bihar
(FY 2021-22)



- 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 increased productivity.
- The crop has **gained GI tag (Mithila Makhana)** and growing export demand in markets like the US, Canada, and Australia.
- Government initiatives, research institutions, and organic farming drives are helping expand the area under cultivation.
- However, the sector **faces challenges from climate change, water scarcity, labor-intensive practices, price volatility, and lack of local processing infrastructure.**

Promising export opportunities for Indian Makhana

European Union (Germany, Netherlands, France) and UK

- Increasing demand for plant-based, gluten-free snacks. Strong retail presence for superfoods in organic chains and online platforms.
- Focusing on organic-certified makhana for premium pricing.
- Using Netherlands & Belgium as entry hubs for EU distribution.

Canada & Australia

- 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.

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.

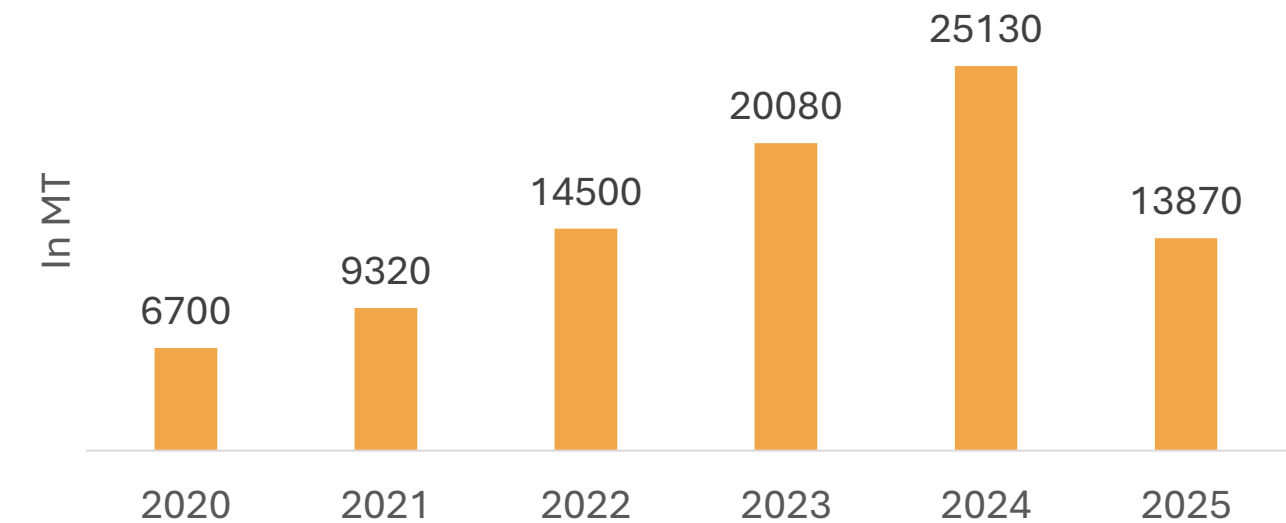
Promote makhana as a premium product in both domestic and global markets by assisting in branding, certification, and export facilitation.



Export and Import trends

Indian Makhana export trends

Indian Makhana exports (MT)



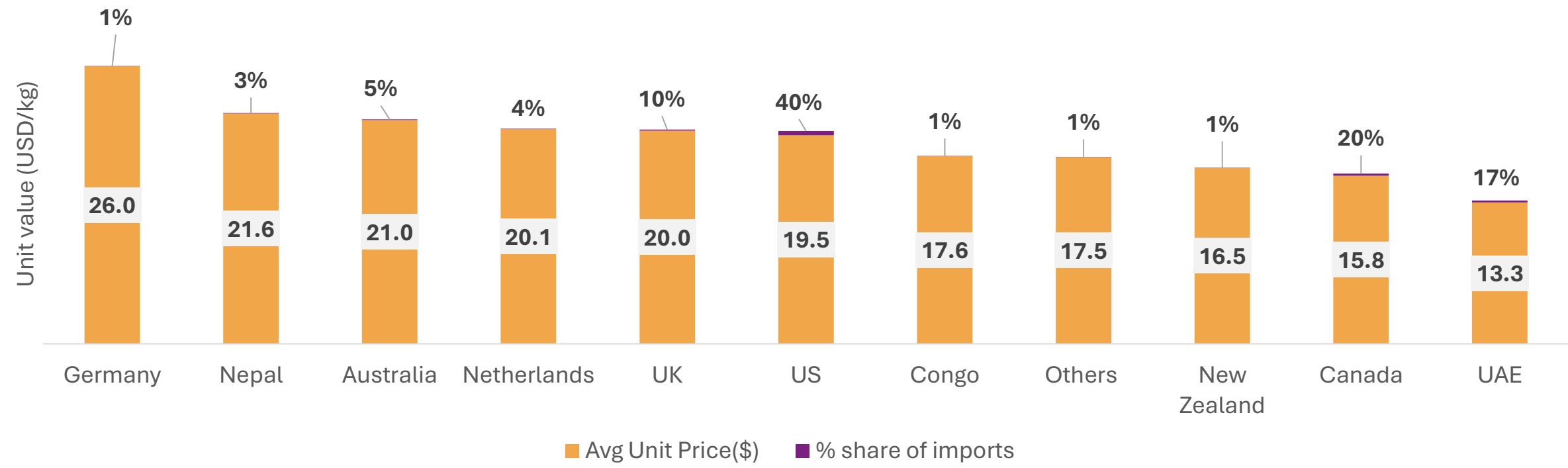
Note: 2025 exports are from Jan'25 to Jul'25

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, India’s production dominance, better processing, and organic certifications. High and Premium grades (>18 mm) lead exports due to high demand in international markets.
- 2025 (Jan–July) exports at 13,870 MT suggest the year may end slightly below 2024’s peak, impacted by US tariffs and price pressure.
- Future focus should be on premium positioning (6 & 7 Suta), value-added products, and strong branding to sustain growth in key markets like the US, EU, and Middle East.

Major importers of Indian Makhana

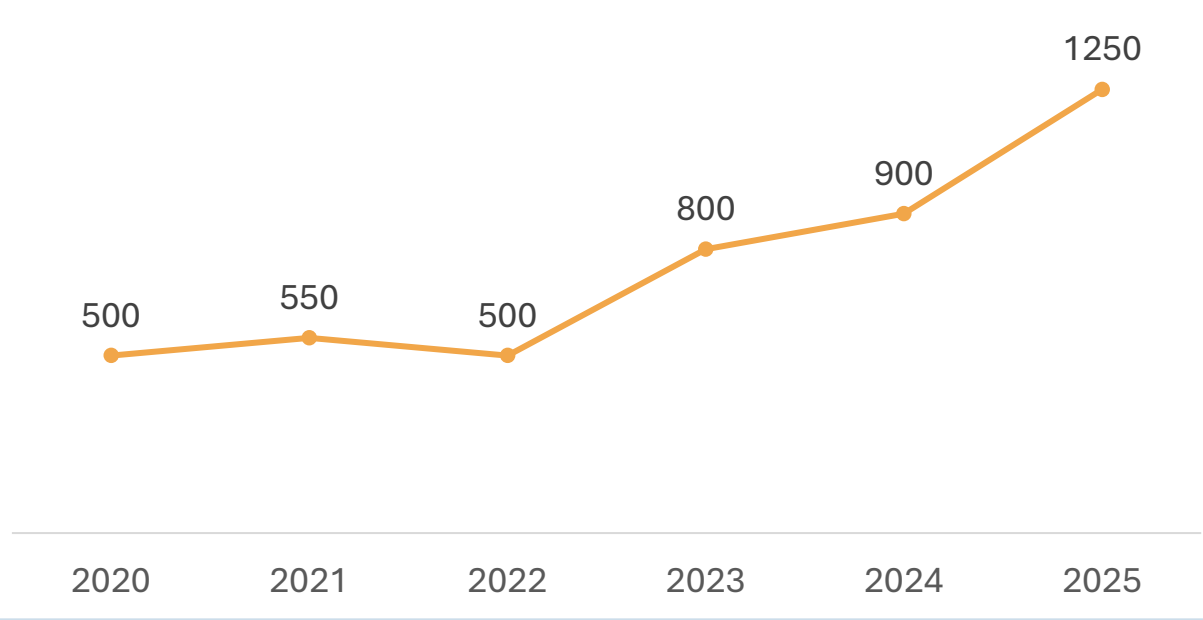
Top 10 importers of Makhana (2025)



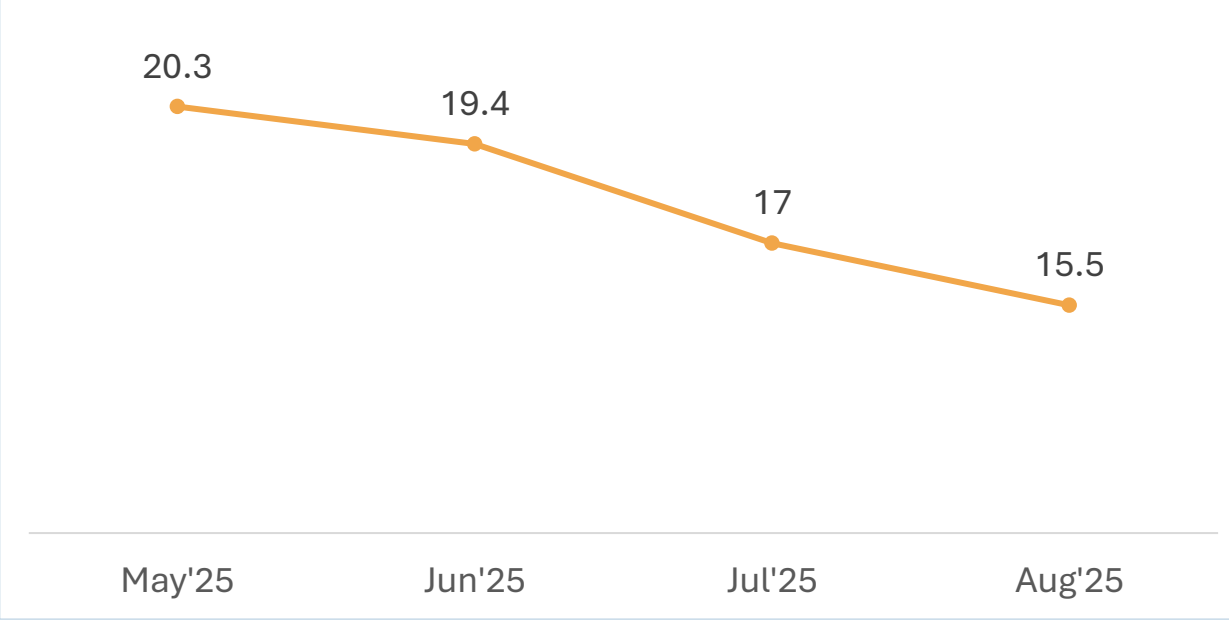
- The major importers of Indian Makhana are highly concentrated, with the US (40%), Canada (20%), and UAE (17%) together accounting for 77% of total imports. However, these high-volume markets pay comparatively lower prices (US: \$19.5/kg, Canada: \$15.8/kg, UAE: \$13.3/kg).
- On the other hand, smaller 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.

Domestic and export prices trends

Average price in India (INR/Kg)



India's exports price FOB (USD/kg)



- Domestic Makhana prices have risen sharply from ₹500/kg in 2020–2022 to ₹1,250/kg in 2025, reflecting a strong shift toward health-focused snacking, premium positioning by brands, and supply limitations that failed to keep pace with demand. This trend signals a lucrative domestic market that is becoming more attractive for processors than exports.
- In contrast, export prices have shown a declining trend in recent months, dropping from USD 20.3/kg in May to USD 15.5/kg in August. This fall is mainly due to the 50% tariff imposed by the US (India’s largest Makhana importer with a 40% share). This policy shock has reduced the export demand to US forcing exporters to absorb costs or offer discounts.
- The contrasting trends highlight a structural shift: India’s Makhana trade is becoming more domestic-driven, while export growth now depends on diversifying beyond the US, entering tariff-free markets, and leveraging organic/premium positioning to maintain margins.

Thank You