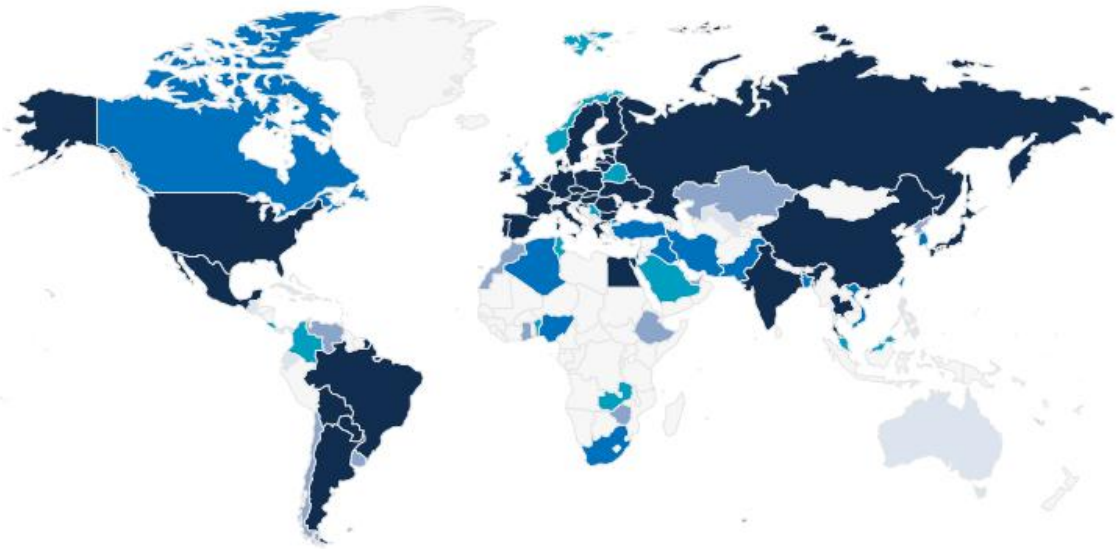
Oils of Discord – The weaponization of Trade, Territory and Temperature in Global Edible Oil markets

Introduction

The edible oil market — once a story of agriculture and trade — has become a **battleground of geopolitics, climate, and economics.**
Today, **soybean, sunflower, and palm oils** are not just commodities — they are **strategic levers** shaping food security, inflation, and diplomacy.

Why "Oils of Discord"?
Because global edible oil flows now hinge on:

- **Trade wars** redefining supply chains and tarif maps,
- **Territorial conflicts** disrupting production an logistics, and
- **Temperature rise** altering crop yields, ecosystems, and policy priorities.



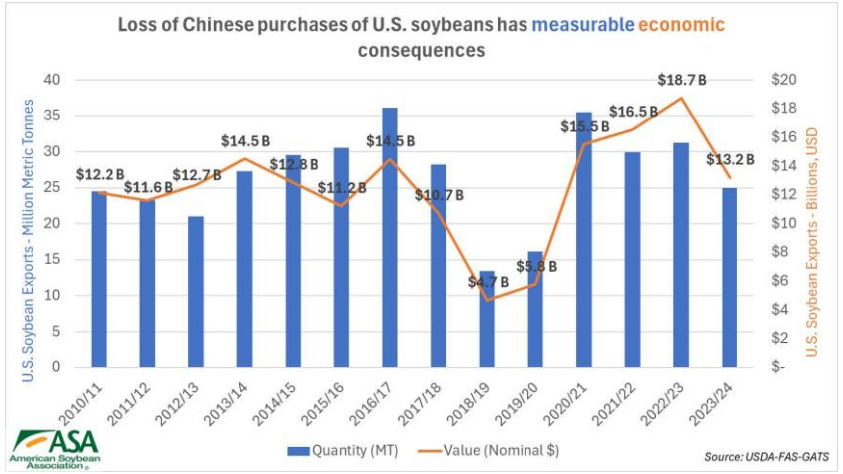
India's Position

- The world's **largest edible oil importer**, facing the heat from all three fronts.
- Needs a **strategic "War Room"** — integrating trade intelligence, geopolitical foresight, and climate adaptation.
- Time for India to **shift from being a price taker to a policy shaper.**

TRADE

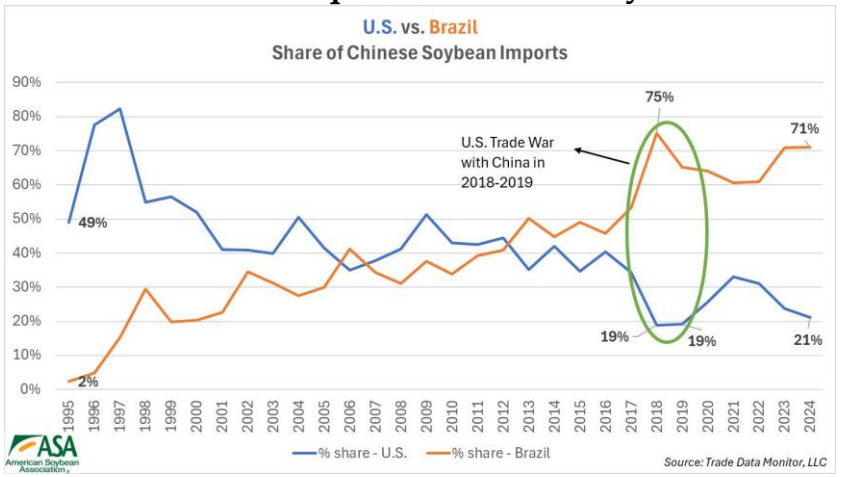
US Tariff war and Implications for Soybean markets

Impact: Trade War Fallout (2018 – 20)



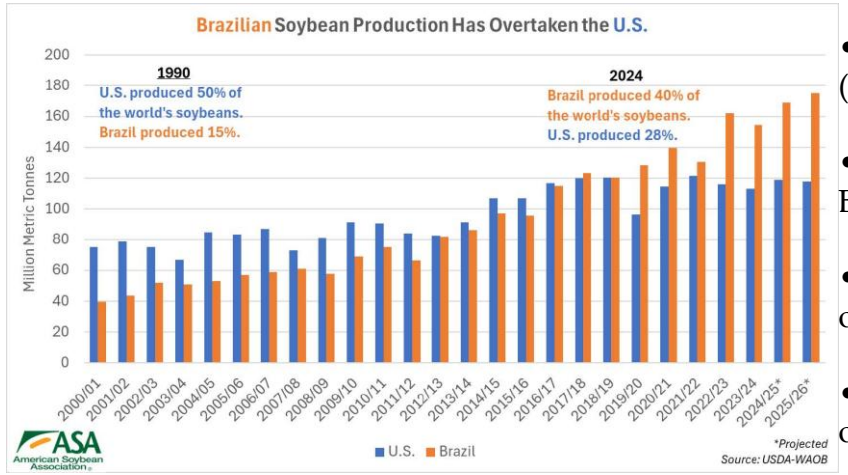
- **Pre-Trade War:** ~ $12.8 B soybeans/year to China (≈ 60 % of U.S. exports).
- **Retaliatory Tariff:** China +25 % (+3 % MFN + VAT) → U.S. soy priced out.
- **Exports fell 63 %** to $4.7 B (2018/19).
- **$9.4 B annual loss** = 71 % of total U.S. farm export losses.
- **Post-pandemic rebound in value, not volume** — only 22 % of output now goes to China.
- **Structural shift:** long-term market realignment away from U.S. supply.

Consequence: Shift of Buyer

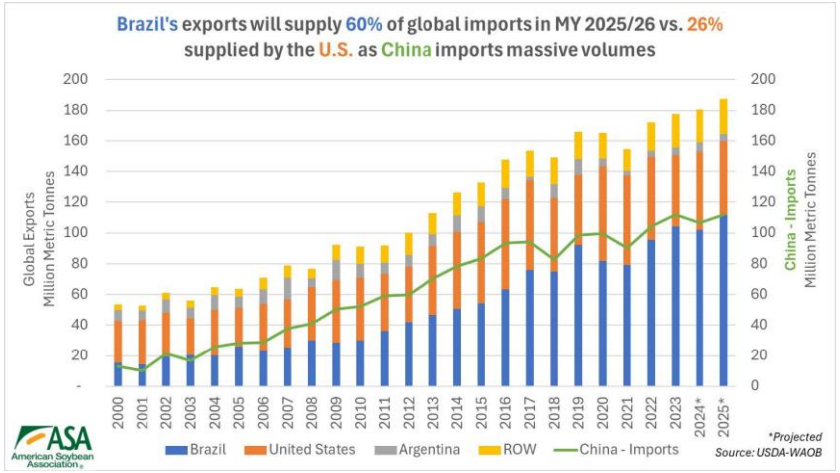


China's sourcing flipped — Brazil's share rose to ≈ 71 %, U.S. fell to ≈ 21 % by 2024.

Result: Brazil's Dominance

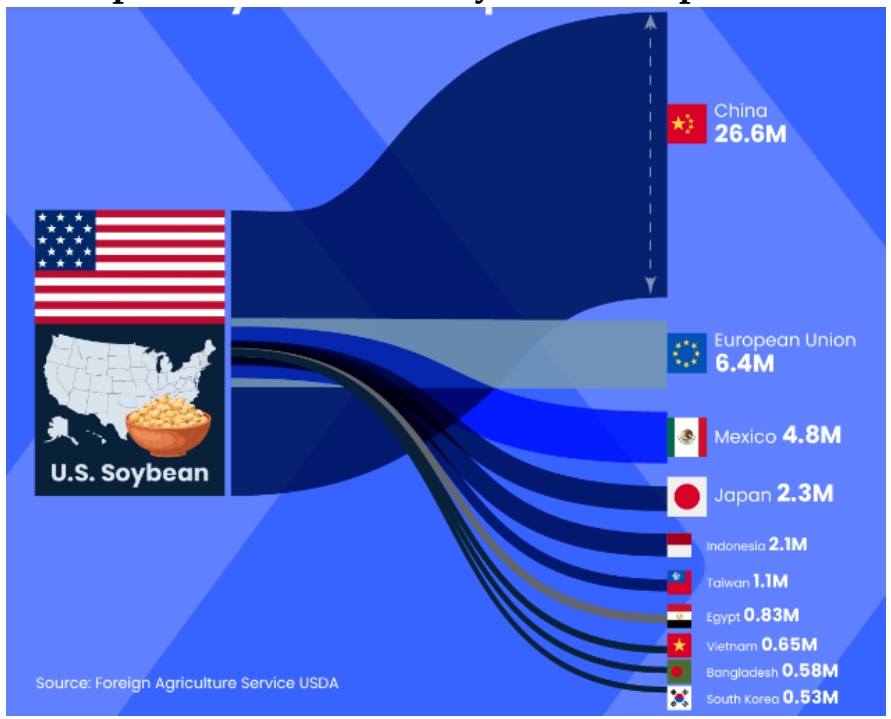


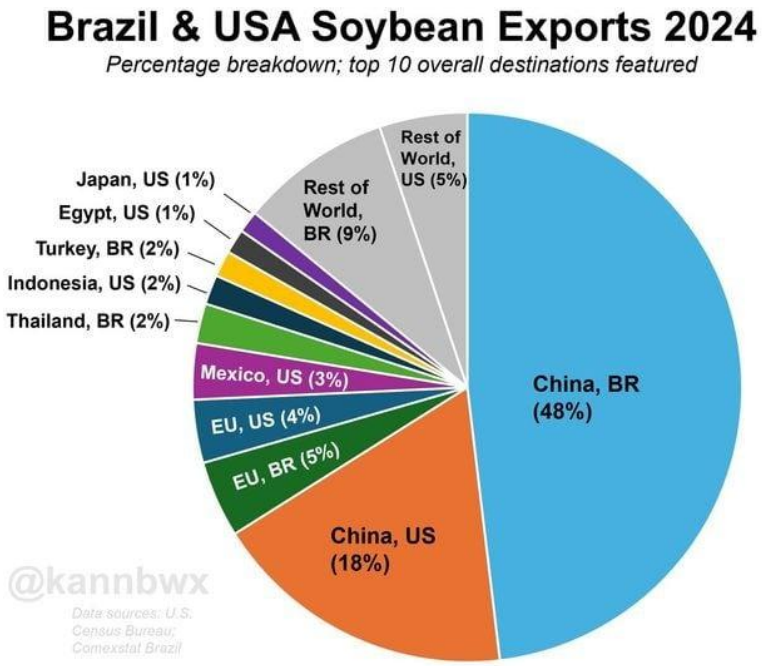
- 🌎 Brazil = 40 % of world soy output (2024); U.S. = 28 %
- 🚢 China sources ≈ 70 % from Brazil, ≈ 20 % from U.S.
- 🕒 U.S. export window: Sept–Feb only (before Brazil harvest)
- 📊 2025/26 projection → Brazil 60 % of global exports; U.S. 26 %



Where will the US Soybean go this time?

US exports 45.8 MMT of soybeans to top 10 countries





Global Export Snapshot (2024)

- **China** remains top buyer – **26.6 M t from U.S., 48 % from Brazil**.
- **EU (6.4 M t)** and **Mexico (4.8 M t)** are key secondary markets.
- Together, **U.S. & Brazil supply > 80 %** of world soybean exports.

Market Shifts & Outlook

- **China slowdown:** imports dip as domestic crushing & self-sufficiency rise.
- **EU & Mexico** increasing purchases to offset South American crop volatility.
- **U.S. biofuel boom:** Renewable Diesel & SAF increase local soy oil demand (food vs fuel).
- **Logistics strain:** Mississippi drought raises export costs ~30 %, rerouting via Gulf ports.

Implications of China's Economic Slowdown

Scale & Context

- China = world's **largest edible oil consumer** (~30% of global demand).
- Imports rose from **5.5 MT (2016) → 9.8 MT (2020)**.
- Per capita consumption ~**10.9 kg (2023)**

Global Ripple Effects

- Weaker Chinese imports = **lower global prices**.
- Exporters (Brazil, Indonesia, Malaysia) face **oversupply pressure**.

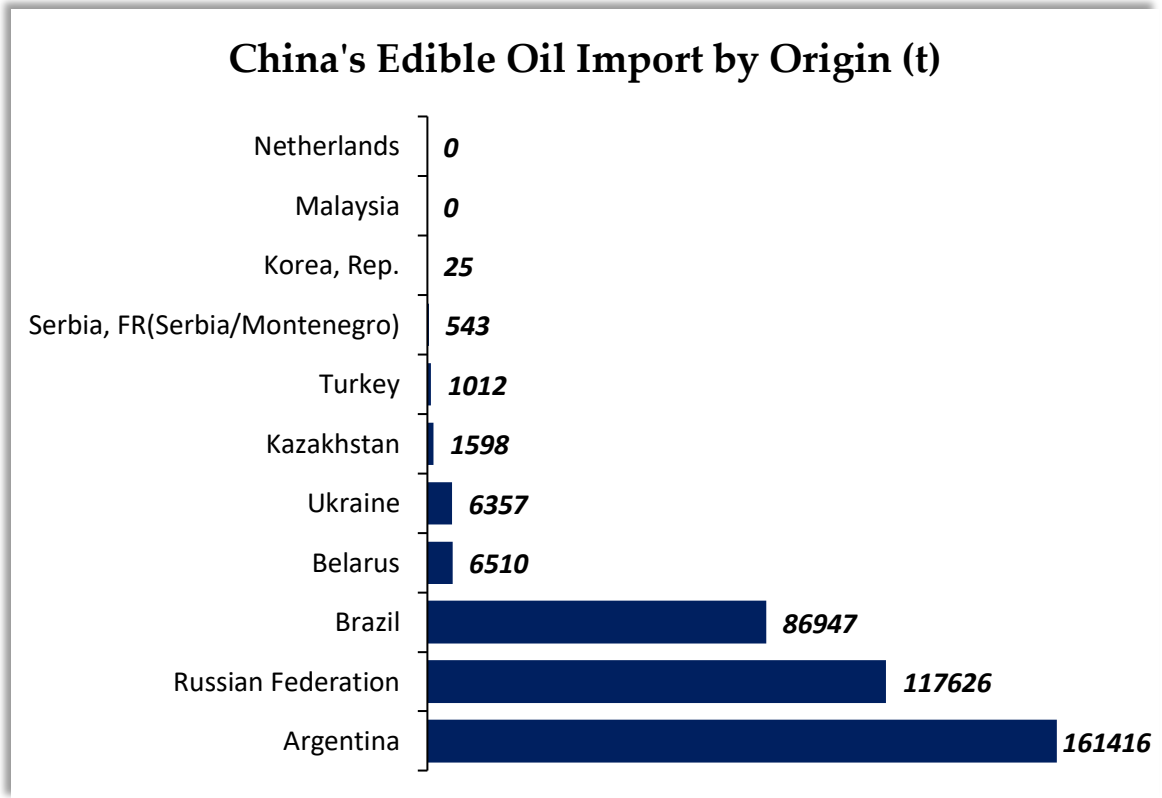
Shifting origin mix — Soybean oil imports

- ❑ Consumers moving to **cheaper oils** – palm replacing soy/sunflower.
- ❑ Soybean oil ~43% of domestic oil supply; rapeseed ~22%.
- ❑ In 2023, China's crude soybean oil imports:
  - From Argentina: (~161,416 tonnes)
  - From Russia: (~117,626 tonnes)
  - From Brazil: (~86,947 tonnes)

Thus, Argentina and Russia are gaining share relative to Brazil in some periods.

Demand Decline – Food & Feed

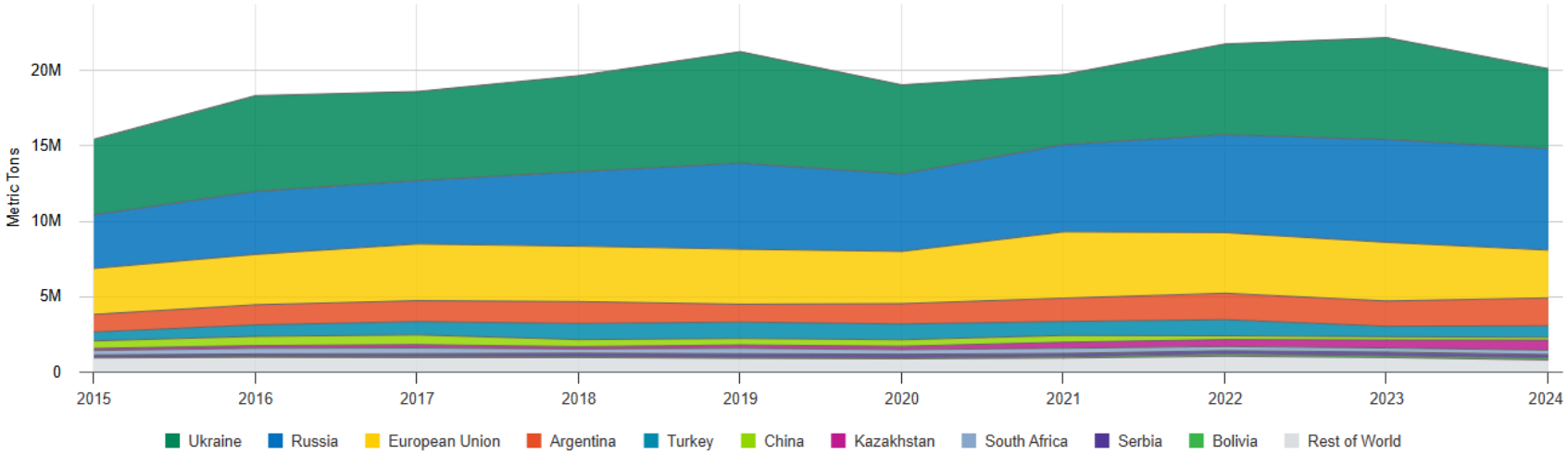
- Lower restaurant activity, reduced consumer spending.
- Shrinking livestock → less soybean meal crushing.
- **Soybean imports fell ~5% in 2021**, remain soft



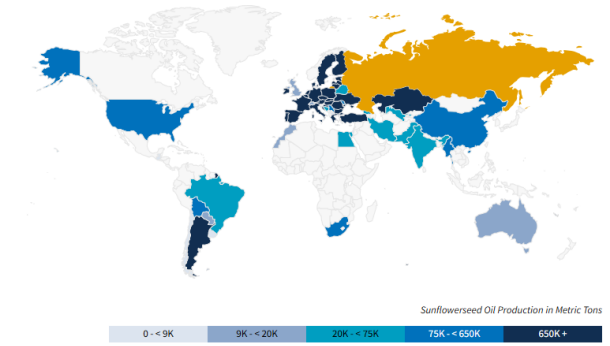
Territory – Ukraine Russia War

Sunflower Oil Production

10 Year Average MY 2015-2024	10-Year Compound Average Growth	2023/2024 Production	2024/2025 Production	Year over Year % Change
19.57 Million *Metric Tons*	**3%** *MY 2015-2024*	**22.13 Million** *Metric Tons*	**20.07 Million** *Metric Tons*	**-9%**

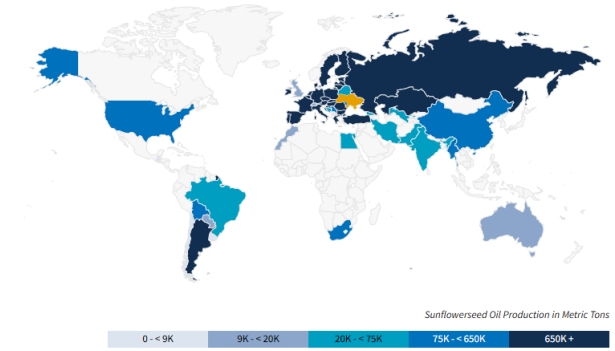


- **Global Output (2024/25):**
  ~20 MMT, down 9 % YoY due to Black Sea disruptions.
- **Ukraine & Russia Dominance:**
  Together supply ~54 % of global production — Ukraine 5.3 MMT, Russia 6.7 MMT.
- **Pre-War Role:**
  The two nations historically accounted for 75–80 % of global exports — critical to EU, India & MENA food supply.
- **War Disruption:**
  Blocked ports, damaged processing, and input shortages slashed Ukraine's crush capacity by ~40 % (2022–23).
- **Shifts in Production:**
  EU (3.2 MMT) and Argentina (1.8 MMT) increased output; others (Turkey, Kazakhstan) added marginal capacity.
- **Global Implication:**
  The supply gap pushed edible-oil prices to record highs, driving substitution with palm and soy oils.



Russia ranks #1 in Sunflowerseed Oil Production | 6,732,000 Metric Tons | 33.5% of Global Production

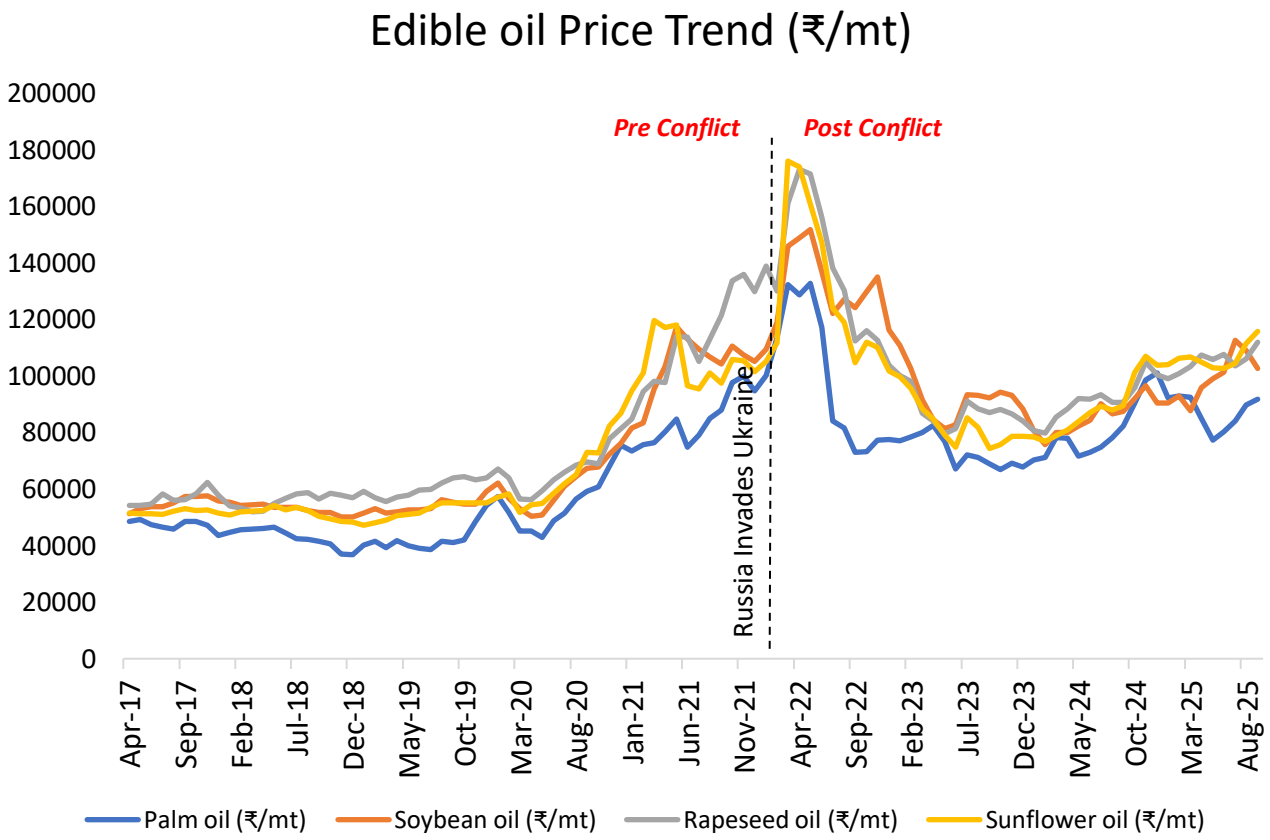
Marketing Year 2024 from September - August



Ukraine ranks #2 in Sunflowerseed Oil Production | 5,290,000 Metric Tons | 26.4% of Global Production

Marketing Year 2024 from September - August

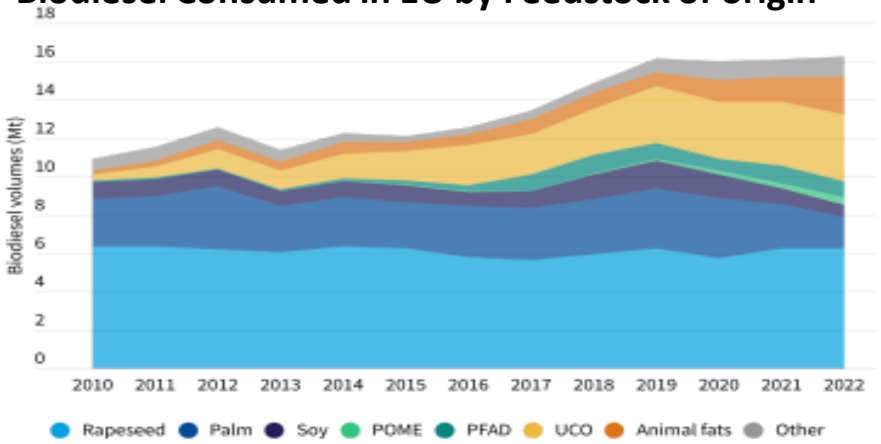
Impact on Vegetable Oil Prices (Pre and Post Ukraine War)



- **Pre-War Stability (2019–2021):**
  Prices steady around **₹70K–95K/MT**, supported by consistent sunflower and palm oil supply.
- **Conflict Disruption (Early 2022):**
  Black Sea blockade slashed **Ukraine's 47 % share** of global sunflower oil exports.
- **Price Spike (Mid-2022):**
  Global substitution pushed **palm, soy, and rapeseed oil above ₹180K/MT**, nearly doubling from 2021.
- **Correction Phase (2023–2024):**
  Partial reopening of routes and bumper crops in **Brazil & Southeast Asia** eased prices to **₹110K–120K/MT** — still ~30 % above pre-war levels.
- **Ongoing Volatility:**
  Energy costs, El Niño weather, and biofuel demand continue to drive uncertainty in edible-oil markets.

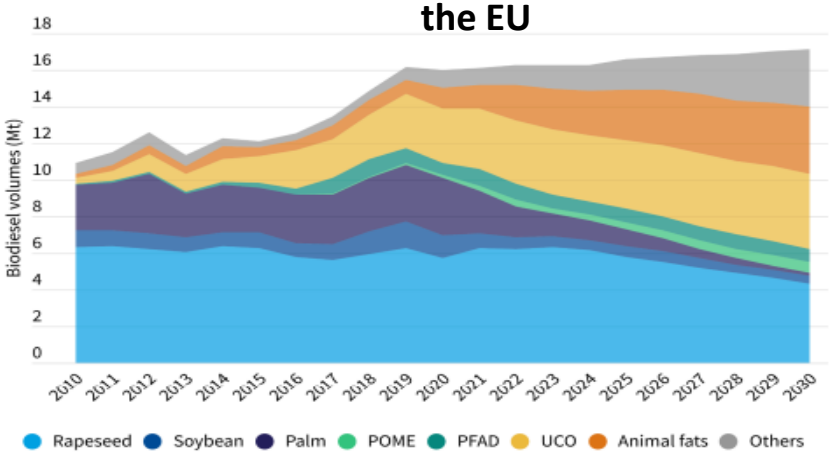
Mitigation of Climate Change – Food vs Fuel

Biodiesel Consumed in EU by Feedstock of origin



Source: Transport & Environment, based on data from Stratas Advisors (2023)

Forecasted feedstocks use in biodiesel consumption in the EU



Source: Transport & Environment, based on data from Stratas Advisors (2023)

Biofuel Mandates – (US, EU, India):

- **US – Renewable Fuel Standard (RFS):**
  Requires blending of biofuels into transport fuel; boosted **corn ethanol** and **soy biodiesel** use.
- **EU – Renewable Energy Directive (RED II):**
  Targets **14% renewable energy in transport by 2030**; drives demand for **rapeseed, palm, and soy oils** for biodiesel.
- **India Biofuel Policy (2022):**
  Targets **5% biodiesel blending** by 2030, boosting edible oil imports.
- Result: **~18% of global vegetable oil** diverted from food to fuel.

Scale of Diversion:

- **~18 %** of global vegetable-oil output → biodiesel
- **EU:** burns **17 000 t/day**; uses **58 % rapeseed oil** & **9 % sunflower oil** for transport fuel.
- **Half of EU palm oil** & **⅓ soy oil** consumed → fuel.

Climate Trade-Offs:

- Biodiesel cuts tailpipe CO_2, but **deforestation for feedstocks adds emissions** (ICCT).
- Peat/forest clearing can make biofuels **more carbon-intensive than diesel**.

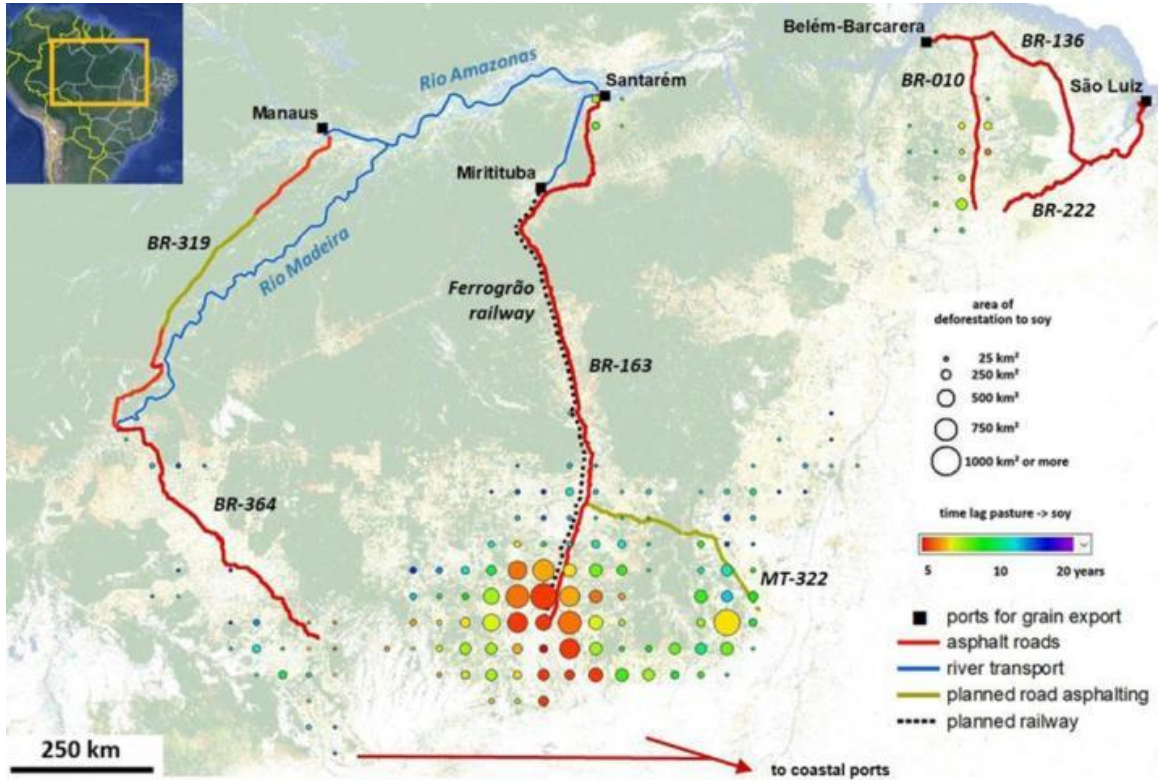
RSPO & Sustainability Certifications:

- **RSPO (Roundtable on Sustainable Palm Oil)** & **ISCC/REDcert (EU)** ensure supply-chain compliance with **ESG standards**.
- Aim: Reduce **deforestation**, **child labor**, and **carbon footprint** in biofuel feedstocks.

Temperature (Climate Change)

The expanding deforestation of amazon

Deforestation and soy production in the Brazilian Amazon



Deforestation areas due to soy and avg. time lags between deforestation and soy planting within 50kmX50km grid cells. Main existing grain transport network to the ports of international trade and new infrastructure projects (roads, train lines).
Source: JRC data

❑ Soy as a Driver of Forest:

- Before Brazil's **2006 Soy Moratorium**, **~30%** of soy expansion replaced forest.
- After 2014, deforestation fell to **~1%** but shifted to the **Cerrado** and **secondary forests**.

❑ Recent Resurgence (2025 Data)

- Soy on **virgin forest tripled** to **~250,000 ha** (**≈3.4%** of Amazon soy area)
- **16%** of Amazon soy (**≈1.04 Mha**) planted on land cleared since **2008**.

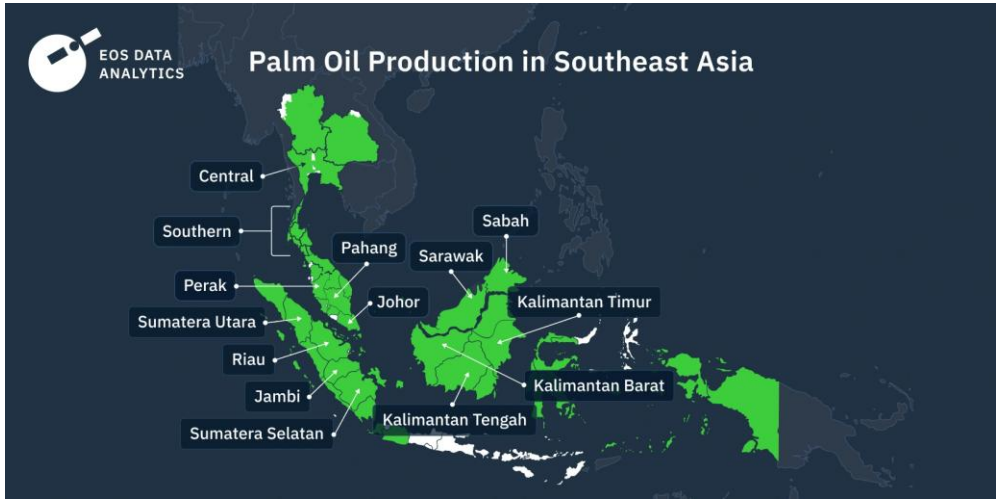
❑ Broader Implications

- Ongoing forest loss weakens Amazon's **carbon sink** and raises **drought risk**.
- **Leakage effect:** restrictions shift deforestation to other biomes like the **Cerrado**.

❑ Global Demand & Trade:

- Brazil's soy expansion is **fueled by global demand** and **high prices**.
- The **EU** is the **2nd largest soy importer** after **China**, driving **embedded deforestation** through imports.
- **Tropical deforestation = ~1/6** of an average **European citizen's dietary carbon footprint**.

Palm Cultivation & Rainforests of Malaysia & Indonesia



Palm Oil Production in Southeast Asia

- **Indonesia**: produces over 45 million tonnes annually; leads the global market.
- **Malaysia**: about 18–20 million tonnes per year.
- **Thailand**: third largest producer; rising output to meet domestic demand.

Environmental Impacts of Palm Cultivation

Deforestation:

- Plantations absorb only **~20% of the CO_2** that rainforests can
- Many are developed on **carbon-rich peatlands**, worsening carbon release.

Forest Fires:

- Caused by **slash-and-burn clearing** and **drained peatlands**.
- Palm-related operations account for **~20% of regional fires**
- Burning peat releases vast CO_2 and reduces **soil organic carbon by ~42%** over time.

Water Pollution:

- **Palm Oil Mill Effluent (POME)** contaminates rivers and lakes.
- Produces **~2.5 tonnes of waste** per tonne of palm oil.

Soil Erosion:

- Deforestation and steep-slope planting cause **7.7–14 t/ha/yr** of soil loss.
- Leads to **nutrient depletion**, **higher fertilizer use**, and **land degradation**.

Peatland Carbon Loss:

- About **one-third** of plantations in Indonesia & Malaysia are on peat soils
- Peat drainage emits **~2% of global CO_2**, causes **subsidence** and **saltwater intrusion**

The Perfect War-room

Coordinating Trade, Territory & Temperature in Edible Oils

Trade Intelligence & Strategy

- Track **tariffs, freight & FX trends** (U.S.–China, Black Sea, palm flows).
- Use **data dashboards** for imports, crushing margins, stocks.
- Set up **early-warning alerts** for policy or export shocks.

Territory – Geopolitical Mapping

- Monitor **Ukraine–Russia flows & port risks**.
- **Diversify sourcing** via Africa, LATAM, and SEA.
- Maintain **strategic oil reserves** for stability.

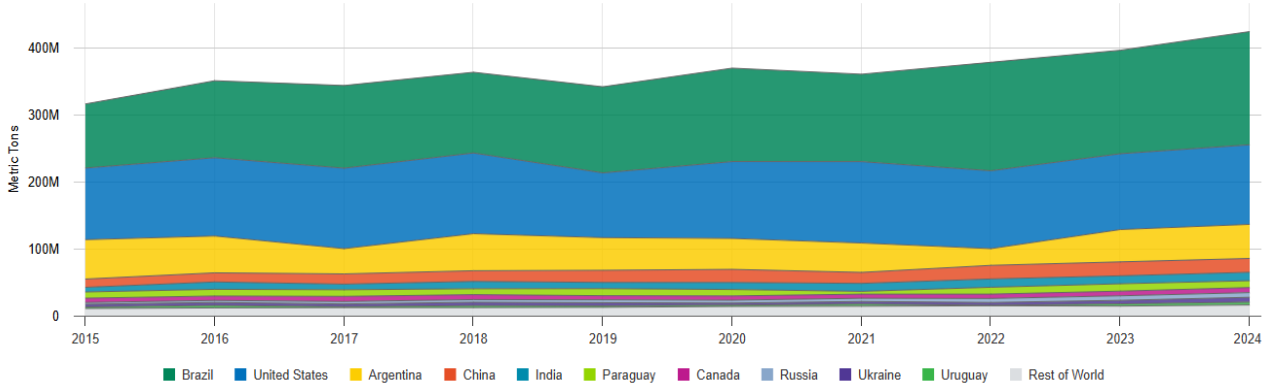
Temperature – Climate & Sustainability

- Use satellite data for deforestation and crop stress.
- Promote climate-smart, regenerative oilseed farming.

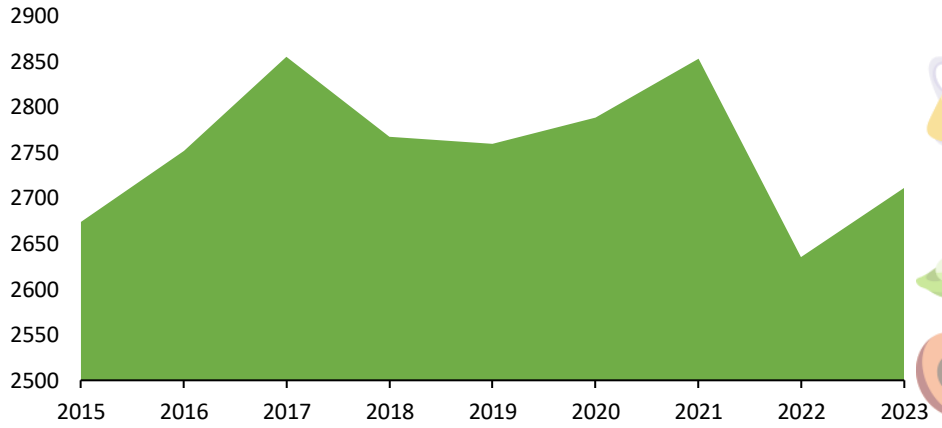
Production & Productivity (India vs. World)

Soybean Production (Global vs India)

10 Year Average MY 2015-2024	10-Year Compound Average Growth	2023/2024 Production	2024/2025 Production	Year over Year % Change
364.48 Million *Metric Tons*	**3%** *MY 2015-2024*	**396.36 Million** *Metric Tons*	**424.2 Million** *Metric Tons*	**7%**

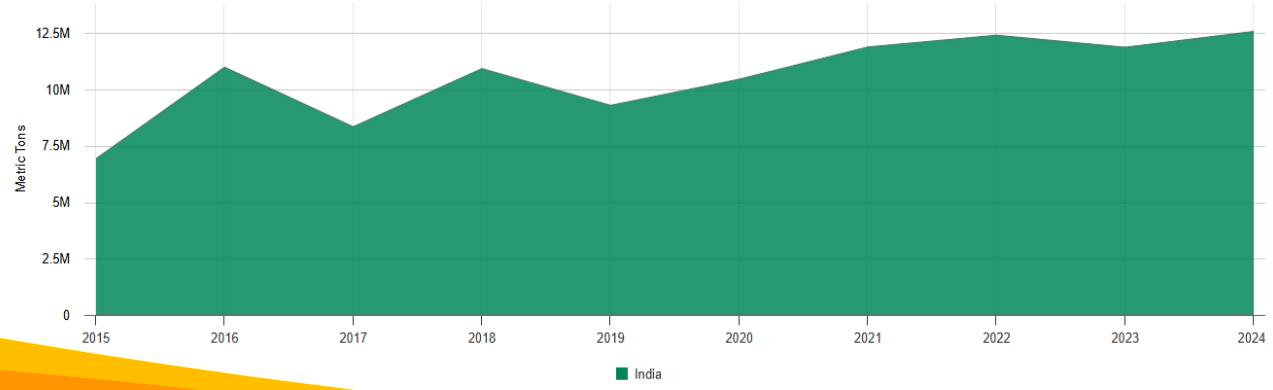


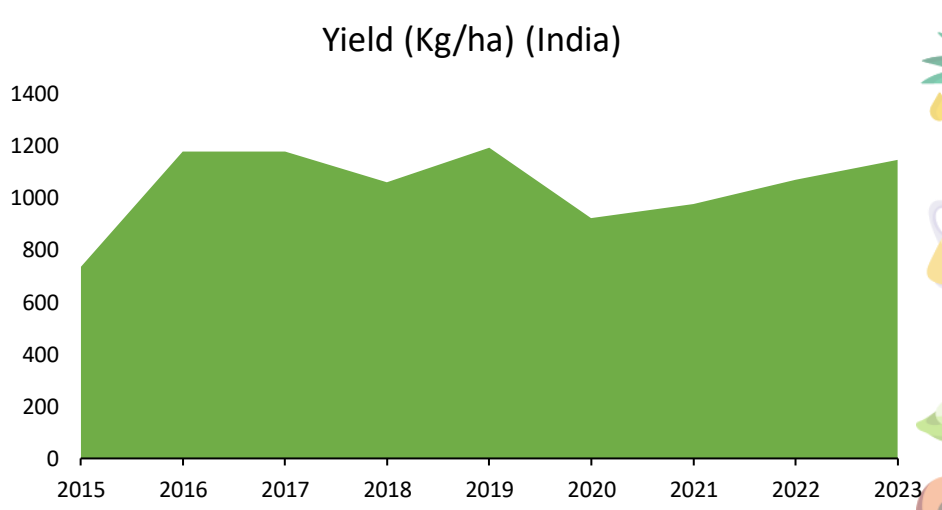
Soybean Yield (Global vs India)



India ranks #5

10 Year Average MY 2015-2024	10-Year Compound Average Growth	2023/2024 Production	2024/2025 Production	Year over Year % Change
10.57 Million *Metric Tons*	**6%** *MY 2015-2024*	**11.88 Million** *Metric Tons*	**12.58 Million** *Metric Tons*	**6%**

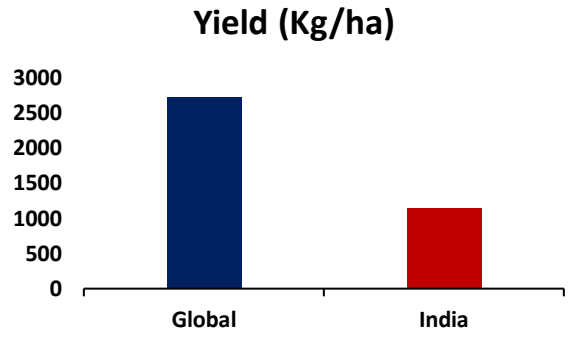


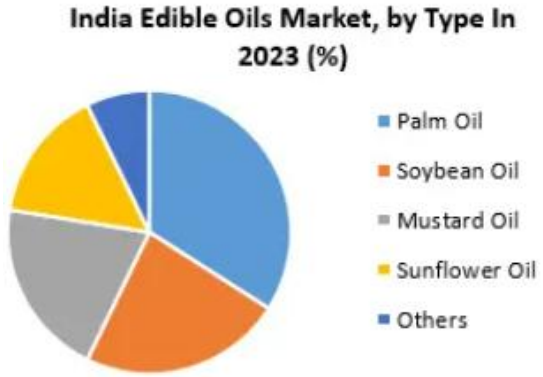


The DDGS challenge for Soy meal

- **What is DDGS?**
  Distillers Dried GrainsDDGS, a **byproduct of ethanol**, has become a **low-cost substitute** for soybean meal in India's poultry and livestock feed.
- **The Challenge:**
  Rising DDGS output from ethanol plants is **substituting soybean meal** in feed, especially poultry — **reducing soymeal demand** and pressuring prices.
- **Key Impacts:**
  - **Demand erosion:** DDGS replaces part of soymeal in livestock feed.
  - **Price pressure:** Surplus DDGS lowers feed prices, squeezing crushers.
  - **Nutritional gap:** Variable amino acid quality limits complete substitution.
  - **India focus:** Ethanol expansion has lifted DDGS supply to ~3–4 MMT, cutting soymeal feed use by ~3 lakh tonnes (SOPA, 2025).
- **Way Forward:**
  - Promote **soymeal quality differentiation** (digestibility, amino acids).
  - Encourage **balanced feed blends** (DDGS + soymeal).
  - Ensure quality checks (mycotoxins, amino acid digestibility).

What India Should do?





Boost Productivity & Yields

- India's soybean yield ~1.2 t/ha, far below global avg ~2.7 t/ha (USDA 2025)
- Production gap: India produces ~12 MT vs Brazil ~160 MT (2024).
- **Actions:**
  - Promote high-oil, climate-resilient varieties.
  - Invest in precision irrigation, soil testing, and digital agronomy.

Give Soybean Oil an Identity

- **Challenge:** Sold as "refined vegetable oil," lacking brand and health recognition.
- **Action:**
  - Promote traceability, GI-based labeling, and awareness campaigns.
  - Develop premium segments (cold-pressed, fortified soy oils).

Balance DDGS & Soy Meal

- DDGS from ethanol plants substitutes up to 20–30% of soymeal in feed.
- SOPA 2025: Soymeal demand may drop ~5% as DDGS use rises.
- **Action:**
  - Encourage soy + DDGS balanced formulations.
  - Incentivize soymeal exports and high-protein crushing efficiency.

Thank You

-V. Shunmugam (Partner, MCQube)