

Ayurveda Unfiltered

A critical insider's perspective on Ayurvedic research, education, and practice

June 2026 | drkembhavi-s.github.io

To:

Authorities, Regulatory Bodies, and Institutional Leaders in Ayurveda

Faculty Members, Researchers, and Academic Scholars

Practitioners, Manufacturers, and Industry Stakeholders

Postgraduate Scholars and Students of Ayurvedic Medicine

— across India and globally

Dear Colleagues and Fellow Travellers in the Tradition,

"When the Strait of Hormuz closes, it does not merely halt oil tankers — it silently disrupts the ghritha that lubricates Ayurvedic tablet presses, the sulphur that purifies Gandhaka Rasayana, the copper that carries electricity to the bhavana chamber, the fertiliser that feeds the herb farm, and the sesame oil that is Tila Taila itself."

I am writing to bring to your attention an article I have recently published on *Ayurveda Unfiltered* that I believe addresses a dimension of our tradition's vulnerability that has, to my knowledge, never been examined in a sustained and systematic way before.

The article is titled ***When Hormuz Bleeds, Ayurveda Hurts***. It was prompted by the ongoing conflict in the Persian Gulf following the closure of the Strait of Hormuz on 28 February 2026 — an event that most in our profession have treated as a geopolitical matter unrelated to clinical practice. This article is a sustained argument that this perception is wrong, and that the consequences of this crisis are already reaching our pharmacy shelves, our formulation costs, and our patients' bills.

The article examines, for the first time as a unified analysis, the following supply chain dependencies that Ayurvedic manufacturing has never publicly reckoned with:

- ▶ India's crude oil import dependence has reached an all-time record of 88.6–89.4% — and over 40% of supply has been disrupted since the Strait closed.
- ▶ Every GMP-compliant Ayurvedic tablet, ointment, and liquid preparation depends on petroleum-derived excipients — paraffin, PEG, petrolatum, plastic packaging — all of which are rising in cost.
- ▶ The sulphur in Gandhaka Rasayana comes, in the overwhelming majority of cases, from a petroleum refinery — and Iran, one of the world's largest sulphur producers, is at the epicentre of this conflict.
- ▶ Gold (Suvarna), silver (Rajata), and copper (Tamra) — the metals of Rasashastra — are now in direct resource competition with the global AI semiconductor industry,

which consumed a record 465.6 million ounces of silver and 326 tonnes of gold in technology applications in 2024 alone.

- ▶ The fertiliser disruption — 70% of India's urea and 73% of its DAP come from Gulf nations — is raising the cost of cultivating Ashwagandha, Shatavari, and Guduchi, while simultaneously driving up cattle feed prices, milk costs, ghee prices, and therefore the cost of every Ghrita Kalpana formulation.
- ▶ India is the world's largest vegetable oil importer, and the edible oil price architecture that determines the cost of Tila Taila — Ayurveda's primary therapeutic base oil — is indexed to imported palm oil, now under structural pressure.
- ▶ Most cultivated medicinal plants in India are grown with synthetic fertilisers and pesticides, yet the tradition continues to represent itself as naturally grounded — a gap between self-representation and material reality that this crisis is widening.

The article is supported by over 40 sourced statistics, four interactive data visualisations including a nine-step cascade diagram tracing the path from a closed strait to the pharmacy shelf, and a full statistical appendix. It concludes with seven specific strategic imperatives for the profession — from transparent supply chain labelling to domestic sulphur processing infrastructure to strategic raw material reserves for Rasashastra institutions.

When Hormuz Bleeds, Ayurveda Hurts

The Strait Nobody in Our Tradition Is Talking About — and Why Every Vaidya, Manufacturer, and Student Must Pay Urgent Attention Right Now

🔗 <https://drkembhavi-s.github.io/2026/06/05/When-Hormuz-Bleeds-Ayurveda-Hurts>

I want to be candid about one thing: **this is an extremely long read**. It is the longest and most data-intensive article I have published on this platform. I have not written it to be skimmed. I have written it to be read carefully, in one sitting if possible, with the willingness to sit with the discomfort that comes from seeing the tradition as it actually is — rather than as we might prefer it to be.

To the best of my knowledge, no systematic analysis of this kind — examining Ayurvedic manufacturing's petrochemical dependency, its fertiliser chain vulnerability, its metals competition with the AI industry, and its edible oil exposure, all through the lens of a single geopolitical event — has been published anywhere in Ayurvedic discourse before. I do not make that claim to seek credit. I make it to underscore that this is a conversation our profession urgently needs to begin, and has not yet begun.

I invite you to read it, share it with colleagues and students, and respond — including with disagreement. The tradition's capacity for honest self-examination is, I believe, one of its most underused strengths.

With respect and in the spirit of honest inquiry,

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This article was researched and drafted with the assistance of Claude (Anthropic), an AI language model, in accordance with the author's standing commitment to transparent AI collaboration disclosure. All analysis, framing, and interpretive judgments reflect the author's intellectual position. The views expressed are personal and do not represent the official position of any institution the author serves.

When Hormuz Bleeds, Ayurveda Hurts

The Strait Nobody in Our Tradition Is Talking About — and Why Every Vaidya, Manufacturer, and Student of Ayurveda Must Pay Urgent Attention Right Now

Dr. Aakash Kembhavi | Academician, Clinician & Researcher | Director, Astanga Wellness Pvt. Ltd. | Chief Editor, International Journal of Ayurveda | June 2026

"When the Strait of Hormuz closes, it does not merely halt oil tankers — it silently disrupts the ghrita that lubricates Ayurvedic tablet presses, the sulphur that purifies Gandhaka Rasayana, the copper that carries electricity to the bhavana chamber, the fertiliser that feeds the herb farm, and the sesame oil that is Tila Taila itself. The war in the Persian Gulf is not happening to someone else. It is happening to us."

Section 1 — The Blindspot: What Ayurvedic Practitioners Don't See

Ask any Ayurvedic physician what threatens the future of the tradition, and you will receive a familiar litany. Deforestation. Adulteration of raw drugs. The decline of classical scholarship. The encroachment of biomedicine. Regulatory overreach. These are real concerns, and they deserve the sustained attention they receive. But there is a category of threat that almost nobody in Ayurvedic circles discusses — not in journals, not in conferences, not in the corridors of our teaching hospitals — and it may be the most consequential of all.

That threat is the petrochemical and industrial metal dependency of Ayurvedic manufacturing.

Every single Ayurvedic tablet that leaves a GMP-certified facility, every ointment dispensed from an Ayurvedic hospital pharmacy, every Arishta bottled and labelled for retail is, at multiple points in its production, touched by petroleum derivatives. The capsule shell, the tablet lubricant, the ointment base, the bottle, the blister pack, the transport fuel — these are not incidental features of modern manufacturing. They are structural necessities. And they are sourced, ultimately, from crude oil.

Similarly, three metals that Rasashastra regards as the pinnacle of therapeutic possibility — gold (Suvarna), silver (Rajata), and copper (Tamra) — are today the subject of a fierce global competition that Rasashastra texts could not have anticipated. That competition comes not from rival healing traditions but from the artificial intelligence industry, the electric vehicle sector, and the semiconductor manufacturing complex.

And then there is sulphur — Gandhaka — which Rasashastra regards as an Uparasa of singular importance. Almost no practitioner who prescribes Gandhaka Rasayana knows where the sulphur came from. The answer, in nearly every case, is a petroleum refinery. And the largest regional source of pharmaceutical-grade sulphur in Asia is now at the epicentre of an active military conflict.

The war between the United States, Israel, and Iran that began on 28 February 2026 is disrupting Ayurveda's supply chain right now. It is raising the cost of your formulations, threatening the purity of your mineral preparations, and exposing a structural vulnerability in the tradition's modern commercial form that two decades of GMP compliance and AYUSH policy documents have done nothing to address.

Section 2 — Oil and Its Hidden Footprint in Ayurvedic Manufacturing

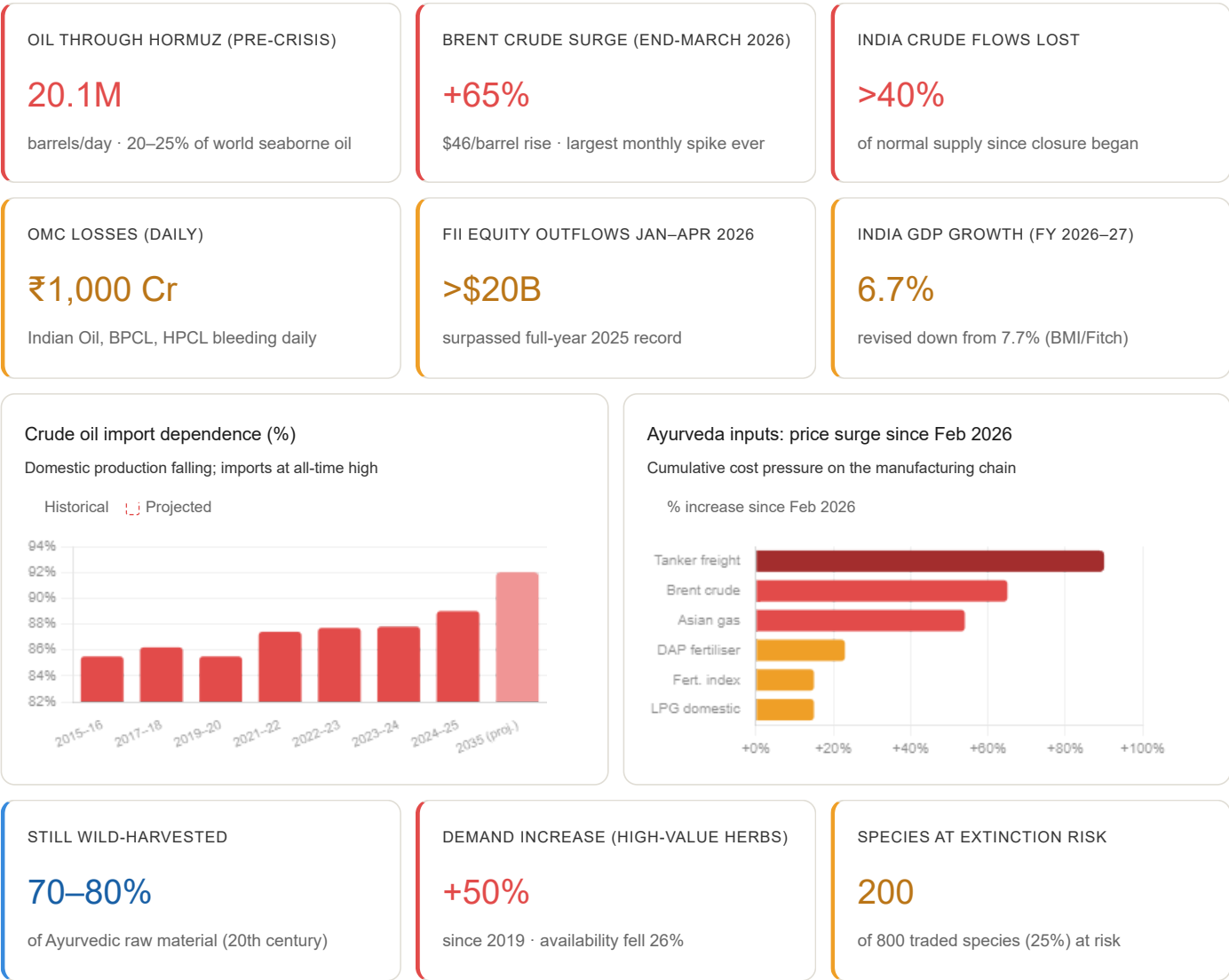
India's crude oil import dependence reached 88.6 to 89.4 percent of total consumption in financial year 2024–25 — an all-time record. Domestic crude oil production fell 22.3 percent over the same period. India now imports approximately 243 million metric tonnes annually, making it the world's third-largest crude importer and, as of 2024, the single largest driver of new global oil demand.

VISUALISATION 1 — THE HORMUZ CRISIS & AYURVEDA'S SUPPLY CHAIN DASHBOARD

The Hormuz Crisis & Ayurveda's Supply Chain

Live crisis · June 2026

US–Israel–Iran conflict began 28 Feb 2026 · Strait of Hormuz effectively closed · Impact on India's energy, fertiliser, metals, and Ayurvedic manufacturing chains



The Petroleum Footprint: From Bhavana to Blister Pack

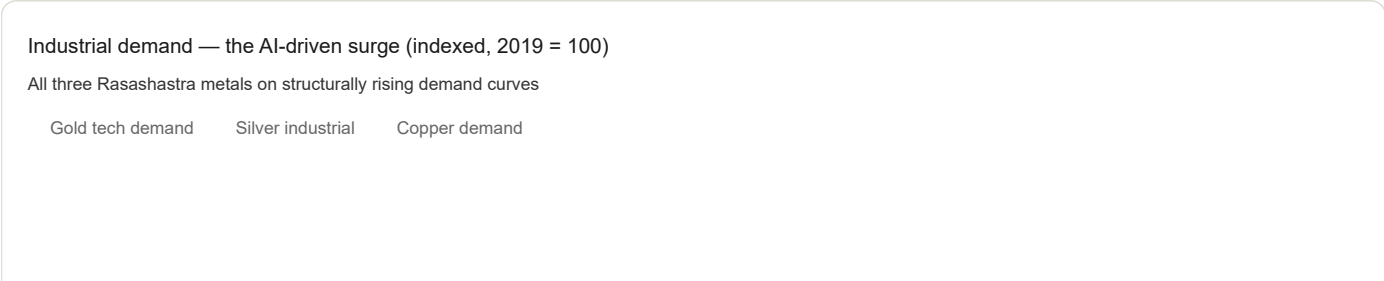
Petrolatum and Vaseline are the standard bases for external Ayurvedic preparations. **Paraffin wax** is used in tablet coating and capsule sealing. **Liquid paraffin** functions as a lubricant in tablet pressing and in oral laxative preparations. **Polyethylene glycol (PEG)**, derived from petroleum-sourced ethylene, is used as binder and lubricant in tablet formulation. **Propylene glycol** functions as a solvent for herbal extracts and humectant in creams. **Plastic packaging** — HDPE, PET, PVC — constitutes virtually every bottle, strip, sachet, and blister in the Ayurvedic retail chain. **LPG and piped gas** power the Bhavana, Paka, Asava-Arishta fermentation, and Avaleha processes. Even the **electricity** powering every GMP facility remains profoundly fossil-fuel dependent.

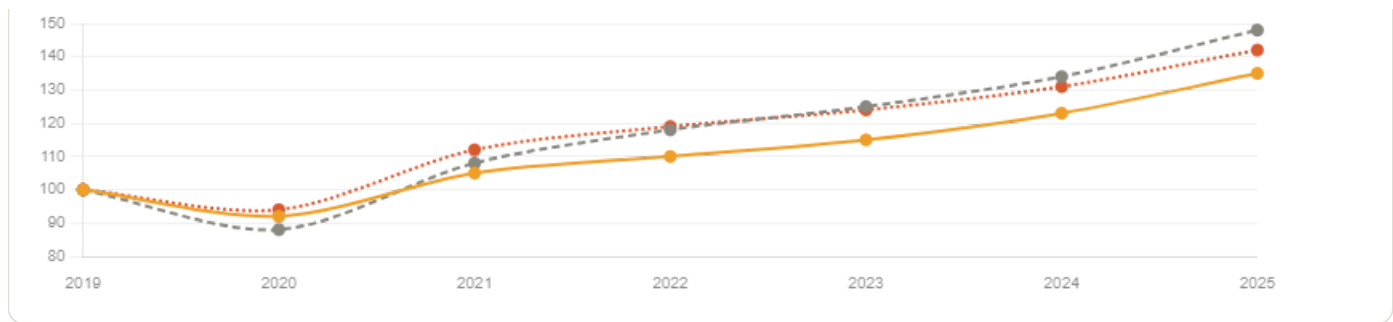
Section 3 — The Three Metals: Copper, Silver, Gold — and the Geopolitical Squeeze

Rasashastra's engagement with metals is, in many respects, its most technically sophisticated expression. Tamra Bhasma is indicated in liver disorders, anaemia, and skin diseases. Rajata Bhasma is prescribed in neurological conditions and cardiac debility. Suvarna Bhasma is the crown of Rasashastra: Mahayogavahi, the supreme Rasayana. All three metals are now under resource pressure of a kind the tradition has never previously encountered.

VISUALISATION 2 — THE THREE METALS: RASASHASTRA VS. THE AI INDUSTRY

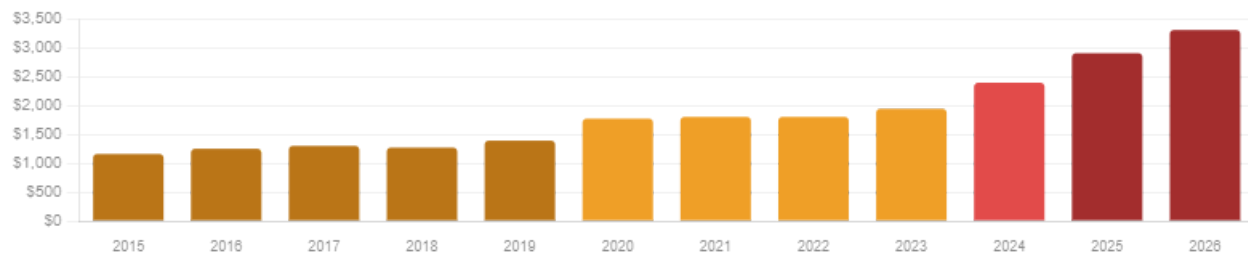
Au Gold · Suvarna ~\$3,300 / troy oz +38% over 24 months · all-time high Rasashastra Suvarna Bhasma Supreme Rasayana · Mahayogavahi Suvarna Prashan Paediatric immunomodulation Hiranyagarbha Pottali Complex compound formulation vs. AI & semiconductors Chip bonding wire GPU, CPU, AI accelerator packages 7–34 mg per smartphone 1.4 billion units/yr Tech demand 2024326 t (+7% YoY) AI hardware outlookDouble-digit growth	Ag Silver · Rajata ~\$33 / troy oz Record 465.6 M oz demand (2024) Rasashastra Rajata Bhasma Neurological · cardiac · Kshaya Rajata Jala Antimicrobial stored water therapy Silver Vark Coating on premium formulations vs. AI & semiconductors Circuit breakers & switchgear AI racks: 60–130 kW vs. 10–15 kW GPU/TPU connections 429 W/m-K — highest thermal conductivity Industrial demand growth 2024+7% Supply trend (decade)Stagnant · structural deficit	Cu Copper · Tamra ~\$10,200 / tonne +12–20% forecast 2025 Rasashastra Tamra Bhasma Liver disorders · anaemia · skin Copper vessels · Jala Dharana Global wellness trend Tuttha (copper sulphate) Eye preparations · antiseptics vs. AI & semiconductors Data centre wiring AI infra uses far more Cu per sq ft EV motors & batteries 83 kg/EV vs. 23 kg/ICE vehicle Price forecast 2025+12–20% over 2024 New mine lead time10–15 years
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Gold price trajectory — the Rasashastra affordability squeeze (USD/troy oz)

Nearly tripled over a decade — Suvama Bhasma priced out of reach for most patients



The competition nobody anticipated: For the first time in history, the pharmaceutical metals of Rasashastra are in direct resource competition with the AI industry. The price consequence falls entirely on Bhasma manufacturers, and ultimately on the patient.

Section 4 — Sulphur: The Element Ayurveda Reveres and Industry Monopolises

Gandhaka (sulphur) is one of the foundational Uparasa in Rasashastra. Gandhaka Rasayana is among the most commonly prescribed Rasashastra formulations — indicated in Kushtha, Kandu, Jirnajvara, Viryakshaya, Agnimandya, Grahani, and Shula, and functioning as a Rasayana. Gandhaka Shodhana employs cow's milk or ghee to transform elemental sulphur into a pharmacochemically superior therapeutic form.

Here is the irony that demands plain statement: global sulphur supply is almost entirely a byproduct of petroleum refining and natural gas processing. The Gandhaka that a Rasashastra pharmacist purchases came, in the overwhelming majority of cases, from an oil refinery. Iran is one of the world's largest sulphur producers. The same conflict disrupting India's crude oil imports is simultaneously disrupting pharmaceutical-grade sulphur supply. If the Hormuz Strait were fully closed, global sulphur supply would fall by an estimated 44 percent annually.

The agricultural fertiliser industry competes intensely for this supply. Pharmaceutical-grade sulphur for Ayurvedic use sits lower in the procurement hierarchy. When supply tightens, the incentive to substitute with lower-grade material rises — and impure Gandhaka, the classical texts are explicit, is toxic.

Section 5 — The Current Crisis: What the War in the Persian Gulf Means for Ayurveda Right Now

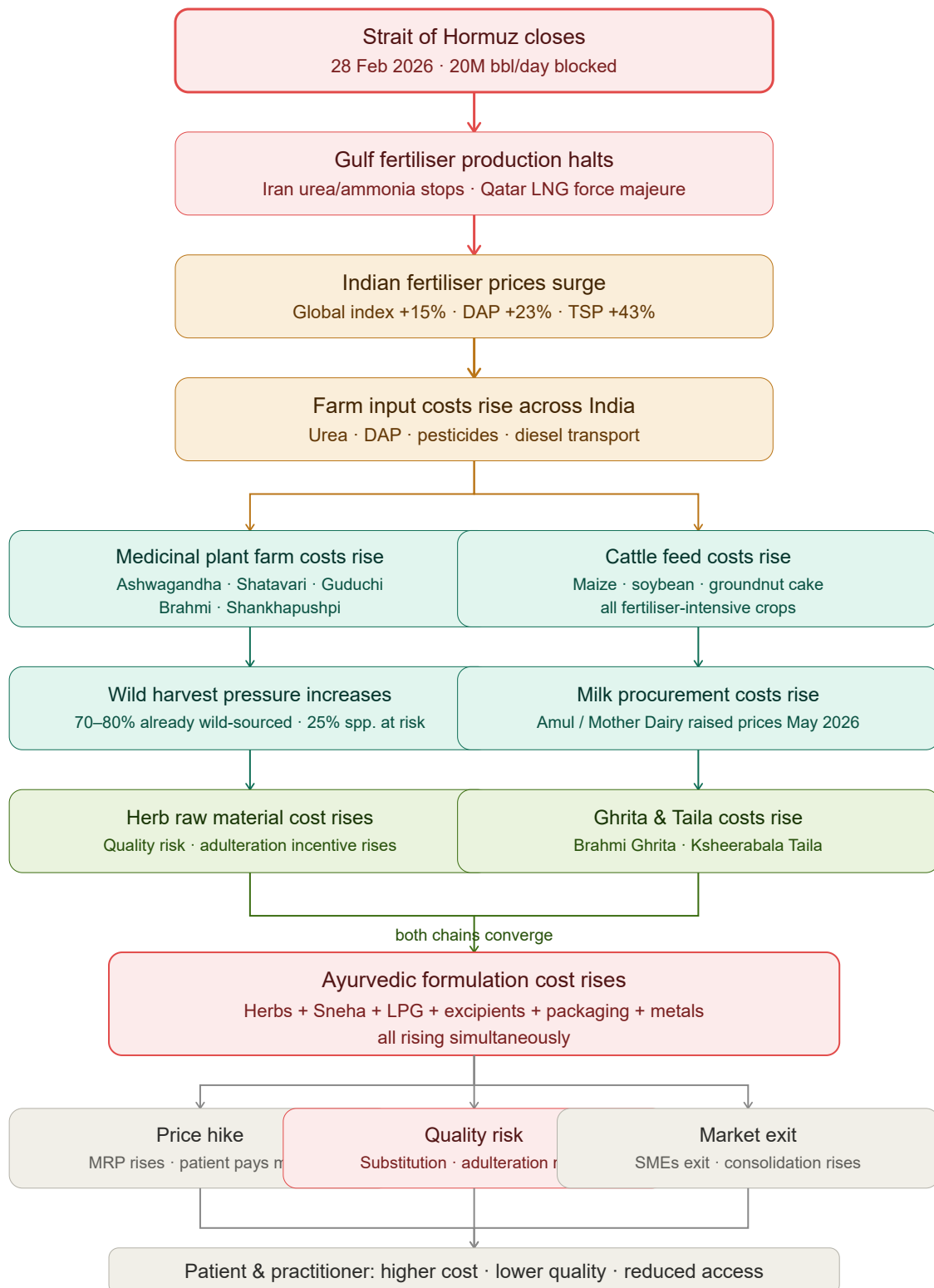
The Strait of Hormuz is 21 nautical miles wide at its narrowest point. In Q1 2025, approximately 20.1 million barrels per day transited it daily — 20 to 25 percent of the world's entire seaborne oil trade. On 28 February 2026, the US

and Israel began military strikes against Iran. Iran declared the Strait closed. By March 9, Brent crude surged past \$115 per barrel. By end-March, prices had risen 65 percent — the largest single monthly price rise in global oil market history.

India lost over 40 percent of its crude oil flows. Oil marketing companies began bleeding losses of up to ₹1,000 crore per day. The rupee hit new all-time lows. Foreign investors pulled more than \$20 billion from Indian equities in the first four months of 2026. GDP growth was revised down to 6.7 percent from 7.7 percent.

VISUALISATION 3 — THE FERTILISER-TO-FORMULATION CASCADE

From a closed strait to the pharmacy shelf — nine steps, operating right now
How the Hormuz disruption reaches every Ayurvedic formulation through two parallel chains



Section 5B — The Edible Oil Crisis: When Taila and Ghrita Become Unaffordable

India is the world's largest importer of vegetable oils, meeting approximately 55 to 60 percent of its annual demand through imports totalling 16.3 million tonnes in FY 2024–25, at a cost of \$19.2 billion. Palm oil dominates at 57 to 60 percent of import volumes. When palm oil prices rise — as they did approximately 30 percent in 2025 — the reference price for all edible oils in India rises, including sesame oil (Tila Taila), which is the canonical pharmaceutical base oil for hundreds of named Ayurvedic Taila formulations.

For ghee, the cascade is more complex: fertiliser price disruption → higher farm input costs for fodder crops → higher cattle feed prices → higher milk procurement costs → higher ghee production costs → higher Ghrita Kalpana formulation costs. In May 2026, both Amul and Mother Dairy raised milk prices by ₹2 per litre, explicitly citing cattle feed costs, fuel costs, and packaging inflation as drivers.

Section 5C — The Fertiliser Crisis and the Herb Farm

Approximately 70 to 80 percent of India's medicinal plant raw material was wild-harvested through most of the twentieth century. The All India Trade Survey of Prioritised Medicinal Plants (2019) documented a 50 percent increase in demand alongside a 26 percent decline in availability. Of the 800 commercially significant species, approximately 200 face overharvest-driven extinction risk.

The cultivated fraction — now approximately 50 percent of the market — is grown in the overwhelming majority of cases using conventional, chemically-fertilised, pesticide-treated agriculture. The fertiliser price escalation driven by the Hormuz crisis feeds directly into medicinal plant cultivation costs. DAP prices rose 23 percent in H1 2025; urea prices rose 15 percent. For a farmer growing Ashwagandha in Rajasthan or Shatavari in Karnataka, these are direct reductions in margin — creating pressure to reduce fertilisation or pass costs on.

The honest conclusion: most Ayurvedic formulations sold in India today are made from raw materials produced with synthetic fertilisers and pesticides, processed with petroleum-derived excipients, packaged in petrochemical containers, and transported in diesel-powered vehicles. The gap between the tradition's self-representation and its actual material reality is wider than the profession has been willing to acknowledge.

Section 6 — The Deeper Structural Problem: Ayurveda's Industrial Contradiction

The modern, commercial, AYUSH-promoted, GMP-compliant Ayurveda that presents itself as a natural alternative to industrial pharmaceutical medicine is, in its manufacturing infrastructure, a creature of the petroleum industry. It exists on a petrochemical scaffold. The tablet cannot be pressed without mineral oil lubricant. The ointment cannot be formulated without a petrolatum base. The product cannot reach the consumer without a plastic bottle. The production facility cannot operate without LPG.

The competition between Rasashastra and the semiconductor industry for gold, silver, and copper is not a metaphor. The global semiconductor industry's revenues are projected at \$800 billion in 2025, growing at 17.6 percent year-on-year. The financial resources available to TSMC, Nvidia, Samsung, and Intel for metals procurement are unlimited relative to those available to any Ayurvedic pharmaceutical manufacturer. The price consequence falls on the Ayurvedic sector and, ultimately, on the patient.

Section 7 — What Lies Ahead: Scenarios and Strategic Imperatives

Scenario A — Short conflict: The Strait reopens within six to nine months; oil prices stabilise at \$80–90/barrel. Ayurvedic manufacturers absorb cost spikes. Metal prices remain structurally elevated. The crisis passes as a warning shot, and institutional lessons are not drawn.

Scenario B — Prolonged disruption: The Strait remains effectively closed through 2026 and into 2027. LPG rationed. Small GMP manufacturers exit the market. Adulteration in Rasashastra formulations increases silently. The tradition's quality base erodes.

Scenario C — Structural transformation. What the profession must do:

1. Acknowledge the dependency — Ayurvedic bodies must stop pretending the tradition operates outside industrial supply chains. **2. Demand transparent supply chain labelling** — which excipients are petroleum-derived? **3. Invest in domestic sulphur processing infrastructure** — India's refineries produce sulphur in quantities that could supply the entire Ayurvedic sector; the missing link is a pharmaceutical-grade certification infrastructure. **4. Develop biodegradable packaging alternatives.** **5. Reconsider the mythology of scale** — hospital pharmacy-level production is paradoxically more resilient than a GMP facility running on LPG and PET bottles. **6. Monitor commodity markets** — Brent crude, silver spot prices, copper LME, sulphur indices should be routine business intelligence inputs. **7. Establish strategic raw material reserves** — six to twelve months of gold, silver, copper, and pharmaceutical-grade sulphur buffer stock.

Section 8 — A Reflection for the Vaidya: Systemic Thinking as Dharma

The classical Vaidya was not merely a clinician. The tradition's texts describe the ideal physician as a figure of broad knowledge — familiar with the seasons, the geography, the social conditions, and the material realities of the world in which healing takes place. The ideal Vaidya, in other words, was a systemic thinker.

If Nidana — the investigation of causation — is a core clinical discipline, then the same investigative commitment should apply to the conditions of practice itself. What are the upstream causes of a patient's inability to access Suvarna Bhasma? What are the upstream causes of Gandhaka Rasayana prepared from substandard sulphur reaching a prescription? These are questions with answers — answers that lead, if followed honestly, to a petroleum refinery in the Persian Gulf, an AI data centre in Arizona, and a military conflict over a 21-mile-wide strait.

The Strait of Hormuz and the bhavana kund are not separate worlds. The oil tanker that cannot pass through a 21-mile chokepoint in the Persian Gulf is connected, by an invisible but structurally real thread of industrial modernity, to the Gandhaka Rasayana bottle on the Ayurvedic physician's shelf. The GPU cluster consuming silver in a data centre in Oregon is connected, by the same logic of global commodity markets, to the silver foil on a Rajata Bhasma preparation in a Kottakkal pharmacy.

Seeing these connections is not pessimism. It is the beginning of genuine strategic thought. And genuine strategic thought, applied with the tradition's own epistemological rigour, is what the moment requires.

Statistical Appendix

Category	Data Point	Figure	Source
PETROLEUM & ENERGY			
	India crude import dependence, FY 2024–25	88.6–89.4% (all-time record)	PPAC / OilPrice.com, Feb 2026
	India domestic crude production decline (decade)	–22.3%	Dataful.in, April 2026
	India annual crude imports	243.22 MT	Provisional FY 2024–25
	India crude import dependence projection, 2035	92%	IEA / CFR
HORMUZ CRISIS			
	Hormuz daily oil flow (pre-crisis, Q1 2025)	20.1 million barrels/day	US EIA
	Brent crude surge by end-March 2026	+65% (\$46/barrel); largest monthly rise ever	World Bank, April 2026
	India crude flows lost since closure	>40%	OilPrice.com, May 2026
	India OMC losses (daily)	Up to ₹1,000 crore/day	OilPrice.com, May 2026
	FII equity outflows India, Jan–Apr 2026	>\$20 billion	Government of India data
	India GDP growth forecast, FY 2026–27	6.7% (revised from 7.7%)	BMI/Fitch
	Freight rates for oil tankers since Feb 2026	+90%	UNCTAD, April 2026
	Asia natural gas price increase post-conflict	+54%	CRS, March 2026
METALS & AI			
	Silver electronics/electrical demand, 2024	Record 465.6 million oz	Silver Institute, World Silver Survey 2025
	Industrial silver demand growth, 2024	+7%	International Silver Institute
	Technology demand for gold, 2024	~326 tonnes (+7% YoY)	World Gold Council
	Copper price forecast increase, 2025	+12–20% over 2024	Market analysis
	Worldwide semiconductor revenue, 2025	\$800 billion (+17.6% YoY)	IDC
	AI rack power draw vs. standard rack	60–130 kW vs. 10–15 kW	Dell'Oro Group / Nlyte, 2024–25
EDIBLE OILS & GHRITA			
	India total vegetable oil imports, FY 2024–25	16.3 million tonnes	SEA of India
	India vegetable oil import bill, FY 2024	\$19.2 billion (~₹1.6 lakh crore)	DYPD, 2024
	India edible oil import dependence	~55–60% of annual consumption	NITI Aayog / SEA
	Amul / Mother Dairy milk price hike, May 2026	₹2/litre	GCMMF / media reports
FERTILISERS & HERB FARMING			

India total fertiliser requirement, 2024–25	649.43 lakh MT	Ministry of Chemicals & Fertilisers
India urea imports from Gulf countries	~70% of total urea imports	Ministry data
Global fertiliser price index rise, H1 2025	+15% (DAP +23%; TSP +43%)	World Bank
Hormuz disruption: global sulphur supply impact	–44% annually if fully closed	Kpler analysis
Hormuz disruption: global urea supply impact	–30% annually if fully closed	Kpler analysis
MEDICINAL PLANTS & SOURCING		
Wild-harvested fraction (historical)	70–80% of total raw material	IBEF / Medwin Publishers
Demand increase for high-value herbs (since 2019)	+50%	All India Trade Survey, 2019
Decline in medicinal plant availability (since 2019)	–26%	All India Trade Survey, 2019
Species at overharvest-driven extinction risk	200 of 800 traded species (25%)	Medwin Publishers, 2024
India organic agricultural land	7.3 million hectares (2nd globally)	APEDA, 2024

This article was researched and drafted with the assistance of Claude (Anthropic), an AI language model, in accordance with the author’s standing commitment to transparent AI collaboration disclosure. All analysis, framing, and interpretive judgments reflect the author’s intellectual position.