



FOXCAST

2035

Ten Forces Shaping the Future of
Consumer Goods

ANNUAL FLAGSHIP REPORT · 2026 EDITION

A FORESIGHT REPORT FOR CPG EXECUTIVES AND STRATEGY, CATEGORY,
SUPPLY-CHAIN & INNOVATION LEADERS · HORIZON 2026-2035

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Executive Summary

The biggest risks to consumer-goods growth and margin over the next decade will not arrive first as consumer trends. They will arrive earlier in the chain — as an input cost, a port delay, an equipment lead time, an insurance renewal, a water permit, or a tighter line of credit — and reach the shopper last. The useful question is not whether the world is volatile. It is which of these forces reaches your P&L, your supplier base, your shelf, or your consumer before your planning cycle is ready for it.

This report tracks ten forces from 2026 to 2035. They are not separate themes. They feed each other. A drought becomes a feed-cost problem, then a protein-mix problem, then a retailer negotiation, and finally a margin problem. A tariff becomes a packaging-equipment cost. A mining constraint becomes a delayed line install.

The reason to read these together is that volatility has become connected in a specific, traceable way. A mineral constraint starts in a mine, moves through a refinery, surfaces as a longer lead time at an equipment vendor, and lands as a warehouse upgrade that slips two quarters. A policy change starts as a tariff, moves through customs and supplier qualification, and lands as a packaging line that cannot be installed on schedule. The headline is rarely the business impact. The impact shows up later, somewhere downstream, when the signal finally reaches cost, supply, demand, compliance, risk, or capital.

The ten forces:

1. Food input volatility becomes a permanent planning condition.
2. Water stress moves from weather story to operating constraint.
3. Resource nationalism raises industrial-input and packaging risk.
4. Critical minerals shift from energy story to consumer-goods cost story.
5. Supply chains regionalize around resilience, not only cost.
6. Consumer trade-down becomes more selective and category-specific.
7. Wellness and metabolic health reshape food, beverage, and supplement strategy.
8. AI commerce changes discovery, loyalty, private label, and consumer targeting.
9. Automation and industrial AI move from labor story to throughput story.
10. Climate adaptation becomes a capex, sourcing, and insurance issue.

The ten are not equally mature, and that is deliberate. Four are already in or near the P&L for exposed categories: food input volatility, water stress, resource nationalism, and selective trade-down — the last already reshaping pricing and private-label strategy. Three are forming into planning decisions but still depend on execution and adoption: regionalized supply chains, wellness and metabolic health, and AI commerce. Three are structural capital-cycle forces that move slower but bite harder once they enter capex, insurance, or supplier qualification: critical minerals, automation and industrial AI, and climate adaptation.

Three of these need to be kept apart because the planning response differs. Resource nationalism is the access problem — who is allowed to buy, move, process, or qualify a strategic input. Critical minerals are the physical-base problem — what the modern operating system is made of, with or without a new policy shock.

Automation is the adoption problem — where a company turns those inputs into throughput, quality, and service. They interact constantly. They are not the same force, and a plan that blurs them will mis-price the risk.

Two tools carry the report from analysis into action, and they appear in the Strategic Agenda. The first is a **cost-stack pressure map**: a category-level view of which signals can hit ingredients, packaging, manufacturing, freight, price, and demand in the same window. The second is a **marginal-dollar rule**: when pressure is already in the P&L, fund the immediate constraint; when it is forming, buy options and qualification paths; when it is structural, screen facilities, water, energy, automation, insurance, and industrial inputs before approving capital.

A word on confidence. The evidence is strongest where the data is hard and public: agriculture and Brazilian food-and-logistics exposure, China's critical-material concentration and product mix, U.S. consumer pressure, India's digital-payment scale, and Saudi water and food-security capital. Company filings now reinforce those reads from the operator's side — across protein, beverages, packaging, refrigeration, logistics, automation, and supplier assurance. Where the evidence is thinner, the report says so inside the relevant force rather than papering over it. The standard throughout is disciplined interpretation, not certainty.

Four conclusions hold the report together.

Plan food and industrial inputs in the same room. Most companies separate agricultural procurement, packaging, manufacturing capex, logistics, and demand into different lanes with different owners. The next decade punishes that separation. You can manage sugar perfectly and still get caught by ethanol, freight, refrigeration parts, or a consumer who trades down. The more connected the cost stack, the less a single procurement line tells you.

Rank countries by leverage, not size. China, India, and the U.S. matter on scale. Brazil matters because it can move food inputs and logistics at once. Indonesia matters because it sits on palm oil, nickel, consumer growth, and land-use rules simultaneously. Saudi Arabia matters because water scarcity plus strategic capital reshapes food-security and infrastructure flows beyond its borders. Zambia and the DRC matter because underweighted mineral systems quietly set the terms for electrification, automation, and equipment.

Make foresight practical. The job is not to name futuristic themes. It is to spot what could change a sourcing plan, a roadmap, a price ladder, a market-entry call, a supplier qualification, or a capex decision before the change is obvious to everyone.

Keep evidence close to the argument. A flagship cannot ask the reader to take a trend on faith. This report carries enough hard numbers to show scale, enough company language to show the pressure is already reaching corporate planning, and enough disconfirming evidence to show where each read could be wrong.

How to Read This Report

This is a foresight report, not a news digest. It is built around forces that change what consumers buy, what companies can make, where products are sourced, how

goods move, and what margins can absorb. The value is not speed. It is disciplined synthesis — connecting public signals, operator language, hard data, and scoreable forecasts to decisions leaders have to make.

The report keeps three kinds of judgment separate:

- **Observed signals:** public facts, filings, source data, policy moves, company language, market behavior.
- **Foresight implications:** what those signals suggest about categories, operating pressure, or market formation over 2026–2035.
- **Scoreable forecasts:** specific probability questions with a deadline and a resolution rule. Those live in the forecast record, not inside every section.

Countries appear when a country changes a force, not as a global handbook. China, India, the United States, Brazil, Indonesia, Vietnam, Mexico, Zambia, the DRC, and Saudi Arabia earn their place because each can disproportionately move supply, cost, demand, manufacturing, regulation, logistics, ingredients, infrastructure, capital, or market access.

Evidence does two jobs here. Hard numbers anchor scale where the data is strong. Qualitative signposts explain mechanism where the issue is behavior, policy direction, or market design. A country can matter because of a commodity volume. It can also matter because its government or its capital allocators change how everyone else behaves. Long-range foresight cannot be built from last month's numeric table alone; it has to read incentives, constraints, and posture. The standard is disciplined interpretation, not certainty.

The Core Read

The decade's organizing shift is from efficiency-first planning to constraint-aware planning.

Efficiency still matters. Cost still matters. But the old assumption — that the cheapest supplier, the leanest inventory, the most distant manufacturing base, and the most stable consumer mix can all hold at once — is weaker than it was. The harder question now is where the system breaks first, and how fast that break reaches the business.

In consumer goods, the break usually shows up somewhere ordinary. A supplier quote that expires in days instead of weeks. A freight term that moves the wrong way. A resin bid that comes in high. A delivery window that slips. A retailer that wants value packs. A water permit that stalls. A line upgrade that waits on a part. A wellness claim that suddenly needs more substantiation.

So read the report as a map of pressure transmission. Some forces start in the field, some in mines, some in policy, some in consumer wallets, some inside a software interface. The common question is when a signal stops being background noise and starts changing a decision — a new supplier, a new pack size, a new plant location, a price move, a formulation change, a channel shift, a forecast update, a product claim,

a retailer negotiation, a capital project. The report is strongest when it keeps returning to that level.

How to Use This Report

This report is built to be used inside the planning calendar, not read once and shelved. Four entry points:

- **Annual planning.** Read the ten forces and the Cross-Impact Matrix together to pressure-test next year's assumptions about cost, supply, demand, and capital.
- **Sourcing and supplier reviews.** Use Forces 1–5 and the country lenses to map where ingredients, packaging, equipment, and logistics carry concentration, policy, or water risk — and where qualification should start now.
- **Capex and risk reviews.** Use Forces 4, 9, and 10 with the marginal-dollar rule to separate growth bets from resilience bets before capital is approved.
- **Category and brand strategy.** Use Forces 6, 7, and 8 to plan the price ladder, the wellness claim set, and how products show up to AI-mediated discovery.

Each force ends with what would strengthen or weaken the read, so a team can track whether a signal is moving toward its P&L. The Indicator Dashboard and the forecast record turn that tracking into a standing routine.

Force 1: Food Input Volatility Becomes a Permanent Planning Condition

THE READ

Food input volatility is no longer a crop-price story. It is a system — fuel, fertilizer, feed, water, logistics, disease, credit, currency, and consumer substitution, often moving together. The danger is the cluster: several inputs move at once while the consumer has less room to absorb price, and procurement, pricing, pack architecture, and retailer negotiation collide in the same window.

WHY IT MATTERS

Brazil is the clearest place to see the system work as a system. For 2026/27, USDA projects Brazil soybean production at 186.0 million metric tons with exports at 117.5 million, and corn at 139.0 million with exports at 44.0 million. FAS PSD data adds the category layer: sugar at 42.5 million metric tons, green coffee at 63.0 million 60-kg bags, beef and veal at 12.37 million metric tons carcass-weight equivalent, chicken at 15.8 million, and pork at 4.9 million. [1] [2] Those volumes sit behind animal feed, edible oils, sweeteners, beverages, foodservice, private label, retail promotions, and the substitutions households make when money is tight.

The crop is only half of it. A harvest is not globally available until it can move, and Brazil's corridors set that timing. Santos handled 59.3 million metric tons in the first

four months of 2026. For full-year 2025, Itaqui handled 36.9 million metric tons — 16.0 million of soybeans, 4.6 million of fertilizers — and Paranaguá and Antonina together handled 73.5 million. [5] [6] [7] (Those periods are not directly comparable; together they show corridor scale, not a trend line.) And ethanol ties the whole thing back to fuel: Brazil produced roughly 35.94 million cubic meters in 2025, which links cane allocation, freight, and pump prices to the same sugar and logistics the food side depends on. [3]

The product layer is now clearer. Portos do Paraná reported May 2026 movement of 6.12 million tons, with exports up 28.8% year over year; soybeans rose from 831.8 thousand tons in May 2025 to 1.58 million in May 2026, soybean meal rose 27%, containerized export cargo reached 824.3 thousand tons, and the year-to-date meat export flow was about 1.5 million tons to markets including China, South Africa, the United Arab Emirates, the Philippines, and Japan. [6] Santos reported April 2026 movement of 16.5 million tons and first-four-month movement of 59.3 million; within that, solid bulk rose 8.2%, with soybeans up 54.8%, sugar up 16%, and soybean pellets up 12%, while liquid bulk rose 10.1% with diesel, fuel oil, and gasoline all higher. [5] Itaqui's operating page identifies its core chains as grain outflow — mainly soy and corn — and petroleum-product and fertilizer reception, with 2022 data showing 11.2 million tons of soy, 6.6 million tons of corn, and 1.7 million tons of pulp. [52] The product detail matters because Brazil is not a single input; it is feed, sweeteners, proteins, fuel, fertilizer, and containers moving through the same operating map.

Here is how it reaches a desk. A category manager rarely learns about a drought from a weather map. They learn about it from a renewal quote on a coffee or sugar contract that comes back higher than the model assumed, in a month when the freight line also moved and the currency went the wrong way. The invoice does not itemize whether the pressure began as weather, fertilizer, fuel, or port flow. It arrives as cost and timing.

The operator language now supports the same mechanism. General Mills' Q3 FY2026 filing tied its priorities to returning North America Retail to volume growth and investing in consumer value, while naming input-cost inflation, tariffs, supply-chain disruption, pricing actions, promotion, consumer behavior, raw materials, packaging, energy, and transportation as factors that can affect results. Tyson makes the protein mechanism concrete. In fiscal Q2 2026, cost of sales rose to \$12.691 billion from \$12.474 billion. Lower sales volume reduced cost of sales by \$288 million, but higher input cost per pound added \$505 million, led by roughly \$600 million of higher beef cattle costs, roughly \$50 million of higher Prepared Foods input costs, and roughly \$40 million of higher freight and transportation costs, partly offset by derivative gains, lower plant-closure and disposal charges, and other lower costs. One protein's input shock moved the whole cost line. [37] [38]

Raízen adds the sugar, ethanol, fuel, and capital-discipline layer from Brazil itself. In its Q3 2025'26 release, management tied results to weak agricultural yields and weather damage, softer sugar and ethanol prices and volumes, growth in Brazil fuel distribution, and a deliberately lower capex plan. The Q3 operational preview put sugarcane crushed at 70.3 million tons over the first nine months of the 2025'26 crop year, against a full 2024'25 harvest of 77.5 million tons; crop-year-to-date, own ethanol sales were about 2.1 million cubic meters, own sugar sales about 3.8 million

tons, and E2G production about 105 thousand cubic meters. [53] What makes Raízen useful here is range: a single operator shows weather, sugar, ethanol, bioenergy, fuel distribution, logistics, capex, and balance-sheet pressure inside one reporting cycle.

WHAT IT MEANS FOR CPG

The first discipline is to stop treating food inflation as one number. Coffee, sugar, soy, beef, poultry, feed, and fertilizer move through different contracts, different consumer behaviors, and different pricing windows. The useful question is narrower: which inputs move faster than your pricing, reformulation, or promotion can respond?

Timing is the second discipline, because the same shock hits players at different moments. A farmer feels diesel before a packaged-food company feels freight. A processor feels feed before a retailer sees shelf inflation. A co-op feels working-capital strain before a shopper changes baskets. Some companies are hedged, some buy spot, some sell through retailers that resist price, some can shrink a pack and some cannot. That unevenness is why this is a planning condition and not a headline: the question is which link absorbs the move first and which link has the pricing power to pass it on.

The consumer side turns one shock into many outcomes. A premium snack loses frequency. A center-store staple holds volume but moves to private label. Beef cedes share to chicken. A beverage protects volume with promotion and loses margin. A foodservice supplier sees the menu simplify. One event upstream; many commercial results downstream.

WHAT WOULD CHANGE THIS READ

The force gets stronger if crop revisions, fertilizer and fuel prices, livestock margins, drought maps, and retailer trade-down signals start pointing the same way, and if company filings keep naming commodity, currency, feed, logistics, or affordability pressure in the same quarters. It gets weaker if crop estimates stabilize or improve, export flows stay normal, corridor data shows no congestion, land-use pressure eases, and filings stop citing food-input or logistics pressure.

COUNTRIES THAT MATTER MOST

COUNTRY	ROLE IN THE FORCE	WHY CPG LEADERS SHOULD CARE
Brazil	Food, feed, sugar, coffee, beef, poultry, pork, ethanol, logistics, land-use assurance.	Brazil can move ingredient costs, protein economics, biofuel competition, and buyer assurance at the same time.
United States	Demand, retail behavior, protein substitution, food-at-home pressure, farm input exposure.	U.S. consumer behavior sets how much pricing the market can absorb.
China	Demand pull for soy, meat, feed, and food imports.	A shift in China demand reshapes Brazil's export flows and global feed economics.

COUNTRY	ROLE IN THE FORCE	WHY CPG LEADERS SHOULD CARE
India	Food demand, edible oils, consumer growth, digital commerce.	India can change incremental food demand and route-to-market assumptions.

EXECUTIVE QUESTIONS

- Which ingredients are exposed to Brazil, fuel, fertilizer, water, and currency at the same time?
- Which pack sizes protect margin without damaging brand trust?
- Which exposures belong in the same planning meeting even though they live in different procurement categories?

FOR 2026–2035 PLANNING

Move food-input planning from the annual commodity review to a standing category-level exposure map. Each major product line should know its exposure to crop, protein, fertilizer, fuel, currency, and corridor pressure — not to forecast every crop, but to know which decisions turn urgent when several inputs move together. A beverage team needs sugar, coffee, water, packaging, energy, and refrigeration in one view. A pet-care team needs protein meals, grains, fats, and the premium-to-value line. The deliverable is a cost-stack map per strategic category showing the input, the source region, the contract timing, the pass-through mechanism, the consumer sensitivity, and the owner.

Force 2: Water Stress Moves from Weather Story to Operating Constraint

THE READ

Water is becoming an operating variable, not a sustainability footnote. It sets ingredient sourcing, plant siting, sanitation, reuse capex, and — the part most plans miss — permission to operate. The business question is narrow: where does water scarcity change cost, capacity, risk, or the right to run a facility?

WHY IT MATTERS

Saudi Arabia shows the shape of the problem, with one caveat about vintage. MEWA's National Water Strategy used a 2015 baseline of 24.8 billion cubic meters of water requirements, growing 7% a year, with agriculture at 84% of requirements and 90% of agricultural water drawn from non-renewable sources; desalination supplied 60% of urban supply in that material. [12] The dated baseline still matters because it shows the structure of the constraint.

The current project layer is now visible through SWPC's portfolio. Its site lists projects across service, construction, planning, and tender status, and the named projects show the scale of the water buildout: Rabigh 3 at 600,000 cubic meters per day, Jubail 3A at 600,000, Shuaibah 3 conversion at 600,000, Jubail 3B at 570,000,

Yanbu 4 at 450,000 plus a transmission line, Riyadh–Qassim transmission at 685,000 cubic meters per day across 859 km, and strategic storage projects such as Al-Ahsa at 1.389 million cubic meters and the Eastern region at 3.13 million cubic meters. [49] That does not replace the older MEWA baseline; it shows how the constraint is turning into infrastructure, procurement, financing, and project-execution risk.

What makes Saudi Arabia instructive is that the water problem does not stay a water problem. Scarcity pushes agriculture toward imports; imports invite food-security capital; that capital reaches into global commodity infrastructure. SALIC raising its Olam Agri stake to 80.01% for \$1.88 billion — Olam Agri's footprint spans more than 30 countries — is a domestic water constraint expressed as a position in the global food supply chain. [13] Desalination and reuse add a technology and infrastructure layer on top.

For a CPG operator, the same logic localizes fast. A plant can clear on labor, tax, and logistics and still become a worse bet if discharge rules tighten or a community decides industrial use is competing with households and farms. A company can buy water, treat it, reuse it, and report clean metrics, and still lose the permit. That is the move that catches teams off guard: water stops being an engineering line and becomes an operating risk that lives in permitting, insurance, and community relations.

PepsiCo's Q1 2026 filing is useful because it places water scarcity, climate-change and sustainability measures, commodity-price exposure, supply-chain disruption, packaging, transportation, labor, and other input costs inside the same risk frame. That does not prove every plant faces the same water constraint. It does show that a global food-and-beverage operator treats water and climate as business risks sitting near cost, supply, and operating continuity, not as a separate communications lane. [39]

WHAT IT MEANS FOR CPG

Water-intensive categories — beverages, dairy, meat, coffee, sugar, personal care, household products — should carry water as a real planning constraint, and the exposure runs further upstream than the plant. Irrigated ingredients, livestock feed, cane, coffee, fruit, palm oil, and some nutraceutical inputs all carry embedded water risk that never appears on a utility bill. The same drought that raises an ingredient cost can also decide whether a key supplier is allowed to expand. Heat reduces labor productivity and raises cooling load. Flooding takes out a route. In practice, water arrives under different department names — sourcing, permitting, insurance, capex, labor, logistics — so it often gets under-managed.

WHAT WOULD CHANGE THIS READ

Watch for drought persisting in major crop regions, reuse projects accelerating, water restrictions reaching industrial users, permitting and insurance language becoming more prominent in filings, and food-security capital moving into infrastructure and sourcing. The read softens if reservoirs recover, irrigation efficiency rises without cost pressure, water projects come online faster than

expected, and companies treat water as routine compliance rather than operating risk.

COUNTRIES THAT MATTER MOST

COUNTRY	ROLE IN THE FORCE	WHY CPG LEADERS SHOULD CARE
Saudi Arabia	Water scarcity, desalination, food-security capital, strategic imports.	Saudi capital can shape food logistics, water technology, and commodity infrastructure beyond its borders.
United States	Regional drought, groundwater, crop insurance, food production, industrial siting.	Water stress can hit agriculture and manufacturing in the same planning cycle.
Brazil	Agriculture, land use, drought, crop output, corridors.	Water pressure can reach both the crops and the logistics that feed global consumer goods.
India	Consumer growth, agriculture, manufacturing, water demand.	India pairs demand growth with water and infrastructure strain.

EXECUTIVE QUESTIONS

- Which ingredients carry hidden water exposure?
- Which facilities depend on water access that could become politically or physically constrained?
- Which sites would be hardest to replace if water tightened?

FOR 2026–2035 PLANNING

Put water into siting, sourcing, and capital decisions, not just the sustainability report. Every high-water category needs a view of direct facility exposure, upstream ingredient exposure, and local permission risk. The test is blunt: would water pressure change a plant expansion, a supplier approval, an ingredient origin, an insurance assumption, or a public claim? If yes, it belongs in strategy. If it only shows up in an ESG paragraph, the risk is being under-read.

Force 3: Resource Nationalism Raises Industrial-Input and Packaging Risk

THE READ

Governments are using tariffs, export controls, quotas, investment screens, sanctions, and strategic capital to shape who gets access to materials. For consumer goods, the usual result isn't an outright shortage — it's friction: supply that costs more, moves slower, and comes wrapped in more documentation and qualification. This is the access problem, and it is distinct from the physical-exposure problem in Force 4.

WHY IT MATTERS

The sector is more exposed than it admits, because so much of the risk sits inside equipment rather than the bill of materials. Packaging lines, refrigeration, automation, sensors, and batteries all depend on materials that policy can touch — as do warehouse systems, motors, coatings, fertilizers, phosphates, and potash.

China is the central case in the current evidence. U.S. Census data puts 2025 U.S. goods imports from China at about \$308.7 billion and exports to China at about \$106.0 billion. [8] [9] The aggregate now has a product-mix layer. An OEC/BACI China-to-U.S. HS4 table for 2024 totals about \$449.8 billion; the gap from the \$308.7 billion figure is mostly year and basis — this is 2024 rather than 2025, BACI mirror-flow data runs above the Census customs-basis figure, and China-to-U.S. goods imports fell sharply into 2025 as tariffs took hold. At HS2, electrical machinery and electronics plus machinery and mechanical appliances account for about \$210.7 billion, or roughly 46.8% of the table. At HS4, the largest exposures concentrate in the equipment categories CPG plants and cold chains actually run on:

HS4 CATEGORY	CHINA-TO-U.S., 2024
Broadcasting equipment	\$52.2 billion
Computers	\$42.9 billion
Electric batteries	\$18.1 billion
Motor-vehicle parts	\$10.2 billion
Other plastic products	\$7.1 billion
Plastic housewares	\$6.8 billion
Electrical transformers	\$4.0 billion
Air pumps	\$3.8 billion
Other electrical machinery	\$3.8 billion
Insulated wire	\$3.7 billion
Air conditioners	\$3.1 billion
Refrigerators	\$2.9 billion

Source: OEC/BACI HS4 China-to-U.S. trade data, 2024. [54] The 2024 mirror-flow basis runs above the 2025 customs figure, but the product mix is enough to stop treating China exposure as an aggregate number.

The first effect is rarely dramatic. It is friction. A supplier changes terms. A quote expires faster. A buyer has to qualify an alternate source on short notice. Customs slows. A bank or insurer gets cautious. A procurement team discovers that the low-cost supplier is less useful once documentation and origin rules make the shipment hard to actually use.

Coca-Cola's Q1 2026 filing gives a clean beverage example without overstating the case. The company describes global trade dynamics as capable of affecting parts of its own cost structure as well as the cost structures of bottlers and customers, and separately discloses commodity hedging tied to forecasted purchases of materials used in manufacturing. For this force, the important point is not the hedge itself; it

is that trade, bottler economics, customer cost structures, and manufacturing inputs are already connected in public operator language. [40]

Industrial suppliers now show the same transmission path from the equipment side. Carrier named updated Section 232 tariffs on steel, aluminum, and copper in its Q1 2026 filing and said it expected to use supply-chain changes, operational cost reduction, and pricing actions to mitigate 2026 impacts. Rockwell Automation tied expected second-half cost pressure to data-center demand and Middle East geopolitical tension, with pressure in commodities, memory-related electronic components, energy, and freight. [41] [42] That matters because refrigeration, controls, sensors, and automation are not abstract industrial categories for CPG. They sit inside plants, warehouses, cold chains, and line upgrades.

WHAT IT MEANS FOR CPG

The companies most exposed are often the ones buying second- and third-order goods — packaging lines, control electronics, forklifts, motors, safety materials, energy systems — not minerals directly. That raises the bar on supplier qualification past "is the machine available." The real questions are whether the replacement parts, embedded electronics, magnets, batteries, and controls carry policy exposure, and whether a given input can be swapped quickly or needs testing, regulatory approval, and customer acceptance before the substitute is real. The strategic move is supplier design: separating suppliers that are cheap because they are efficient from suppliers that are cheap because the risk has not been priced yet.

WHAT WOULD CHANGE THIS READ

Two signals would confirm the tightening: companies citing qualification delays rather than price, and supplier language shifting from cost to access and compliance — with wider export controls and harder project financing behind them. The case fades if substitution, recycling, alternate refining, and non-China processing scale faster than expected, with no real cost or lead-time penalty.

COUNTRIES THAT MATTER MOST

COUNTRY	ROLE IN THE FORCE	WHY CPG LEADERS SHOULD CARE
China	Materials, manufacturing, trade policy, export controls, downstream processing.	Policy moves can shift cost and availability across equipment, packaging, refrigeration, and electronics.
Indonesia	Nickel, palm oil, resource policy, downstream processing.	Indonesia can affect food ingredients and industrial materials at once.
DRC	Cobalt and copper, due diligence, governance, transport and power risk.	Battery and electrification chains can be exposed to policy and compliance pressure.
Saudi Arabia	Strategic capital, mining, phosphates, industrial diversification.	Saudi investment can shape food, water, fertilizer, logistics, and industrial inputs.

EXECUTIVE QUESTIONS

- Which critical inputs sit inside equipment rather than in a procurement category?
- Which suppliers depend on restricted materials or concentrated processing?
- Which parts of the chain require qualification before substitution is even possible?

FOR 2026–2035 PLANNING

Build resource nationalism into supplier qualification and capex approval. A review that asks only price and availability is incomplete; it also has to ask origin, policy exposure, substitution path, qualification time, and whether the input is hiding inside equipment. This matters most for companies modernizing plants, warehouses, refrigeration, vehicles, and data systems — because the more sophisticated the operating base, the more ways policy risk enters through components, controls, sensors, software, and batteries.

Force 4: Critical Minerals Shift from Energy Story to Consumer-Goods Cost Story

THE READ

Minerals get framed as an energy-transition issue. For consumer goods that frame is too narrow. Copper, rare earths, graphite, cobalt, nickel, gallium, germanium, antimony, phosphates, and potash sit behind factories, packaging systems, refrigeration, automation, sensors, logistics equipment, and fertilizer. Where Force 3 asks how policy changes access, this force asks where the operating base is materially exposed even with no new policy shock at all. And the mine is only the first layer — processing, qualification, and equipment integration are usually where cost and delay actually reach the business.

WHY IT MATTERS

Two facts anchor it. First, concentration. China rare-earth mine production is estimated at 270,000 metric tons REO equivalent in 2025, and China holds an estimated 99% of worldwide primary low-purity gallium production and 82% of world natural graphite production. [10] Those matter because the consumer-goods operating system increasingly runs on equipment full of electronics, motors, sensors, batteries, controls, and cold-chain hardware — exposure that hides inside the machine, not the ingredient list.

Second, the underweighted copper and cobalt base. USGS estimates Zambia copper mine production at 940,000 metric tons in 2025 (up from 823,000 in 2024) and refinery production at 270,000 (up from 189,000); it estimates DRC copper mine production at 3.2 million metric tons and refinery production at 2.8 million, and reports the DRC as the leading mined cobalt source at an estimated 73% of world

total. [10] Those numbers make Zambia and the DRC operating-base countries, not mining footnotes.

Copper is the cleanest example precisely because it is not exotic. It is in wiring, motors, grid expansion, buildings, vehicles, refrigeration, and factory upgrades. If copper gets more expensive or harder to deliver at scale, the result is not one product shortage; it is a higher cost base for the entire physical operating system. Rare earths bite differently, through magnets, motors, and sensors. Graphite bites through batteries. Phosphates and potash bite through fertilizer and food inputs. The list is technical, but the implication is plain: a modern consumer-goods company is an industrial company that happens to sell everyday products.

The supplier language is now more than directional. Carrier gives the refrigeration and climate-equipment read-through because it explicitly names steel, aluminum, and copper tariff exposure and mitigation through supply chain, cost, and pricing actions. Rockwell gives the automation read-through because it names commodities, memory-related components, energy, and freight as cost categories under pressure. Crown gives the packaging-machinery and materials read-through because it describes aluminum and steel as basic raw materials, warns that tariffs and trade restrictions could raise raw-material costs, and says mitigation through pass-through provisions and commodity contracts varies by region. [41] [42] [44] The OEC/BACI product-mix table reinforces the same operating-base point: batteries, transformers, insulated wire, air conditioners, refrigerators, air pumps, valves, office-machine parts, and other electrical machinery all appear in the China-to-U.S. HS4 exposure set. [54] No single filing or table proves a decade; together they show the operating base already buying, using, and disclosing around the very inputs this force tracks.

WHAT IT MEANS FOR CPG

The shift is from commodity awareness to operating-base mapping. Take one company and follow copper through it: a beverage maker meets copper in plant electrical systems, vehicles, and packaging equipment; the same beverage maker meets graphite and rare earths in the sensors and motors on its lines, and cobalt in the backup-power and logistics equipment behind the warehouse. The practical question is never "is this mineral strategic." It is where a disruption becomes a procurement rewrite, a capex delay, a higher invoice, or a maintenance problem you cannot schedule around.

WHAT WOULD CHANGE THIS READ

The read firms up as more suppliers — refrigeration, automation, packaging, logistics, infrastructure — tie lead-time, material, tariff, or qualification pressure to specific minerals. It loses force if filings show low exposure, if substitutes scale quickly, or if equipment vendors absorb the input pressure without passing it through. The open proof gap is specificity: connecting named minerals to named CPG equipment without overstating the link.

COUNTRIES THAT MATTER MOST

COUNTRY	ROLE IN THE FORCE	WHY CPG LEADERS SHOULD CARE
China	Rare earths, gallium, graphite, processing, electronics, equipment.	China-linked material pressure can reach automation, refrigeration, batteries, sensors, and machinery.
Zambia	Copper, grid expansion, infrastructure.	Copper availability and power constraints can shape industrial capacity and long-term capex.
DRC	Cobalt, copper, governance and due diligence.	Battery and electrification chains depend on material access and compliance.
Indonesia	Nickel and downstream processing.	Nickel policy can affect battery and stainless-linked supply chains.
Saudi Arabia	Phosphates, mining ambitions, strategic capital.	Saudi mining and phosphate strategy can matter for fertilizer and industrial inputs.

EXECUTIVE QUESTIONS

- Which capex plans depend on copper, electronics, motors, batteries, sensors, or refrigeration?
- Which suppliers can document material exposure, alternate sourcing, and qualification timing?
- Which capex memos should carry a mineral-and-component risk line before approval?

FOR 2026–2035 PLANNING

Put an industrial-input risk screen on every major plant, warehouse, refrigeration, and automation investment. It need not be elaborate: equipment categories, exposed materials, source concentration, qualification timelines, spare-parts exposure, and available alternatives. The reason this is a strategy issue and not a procurement chore is that a delayed equipment upgrade changes capacity, quality, productivity, and service levels — and minerals matter when they change the timing or economics of those decisions.

Force 5: Supply Chains Regionalize Around Resilience, Not Only Cost

THE READ

Supply chains are regionalizing because reliability, compliance, financing, shipping, and market access have become part of cost. The old question was where production is cheapest. The better one is where production stays usable when tariffs, customs, sanctions, shipping insurance, political pressure, and qualification all move at once. For CPG leaders this is not ideology. It is operating design — and it does not automatically lower cost. It can raise redundancy, working capital, and complexity before it buys any resilience.

WHY IT MATTERS

China remains the baseline; diversification starts from it because so much product, equipment, materials, and supplier capability is still tied there. What has changed is that the alternatives now have evidence behind them rather than slogans.

Mexico has crossed from generic nearshoring reference into a real North American platform. USTR reports 2025 U.S. goods trade with Mexico at \$872.8 billion, with imports from Mexico at \$534.9 billion and exports at \$338.0 billion, and notes that more than 80% of Mexican goods exports go to the U.S. and more than 40% of its goods imports come from the U.S. ITA puts manufacturing at about 20% of Mexican GDP, calls Mexico a Latin American advanced-manufacturing leader, and records 5,868 robot installations in 2023, 70% of them in automotive. [33] None of that makes Mexico an automatic China substitute. It makes Mexico a genuine operating platform with its own infrastructure and policy questions.

Vietnam is on the same trajectory. USTR reports 2025 U.S. goods trade with Vietnam at \$209.5 billion, with imports from Vietnam at \$193.8 billion, up 42.0% from 2024, and ITA frames Vietnam as central to diversified U.S. supply chains on location, labor cost, FDI openness, and free-trade agreements. [34] That supports Vietnam as a China-plus-one platform, not a universal replacement.

PepsiCo adds the operator layer from the other direction: its filing names disruption to manufacturing operations or supply chain, commodity and energy exposure, packaging and transportation costs, and the risk that price increases may not fully pass through to customers without affecting volume, revenue, margins, or operating results. Regionalization is one response to that stack, but the filing language is a reminder that moving a footprint does not make cost pressure disappear; it changes which risks must be managed together. [39]

Packaging suppliers show why regionalization cannot be treated as a clean footprint exercise. Ball's Q1 2026 filing puts availability and cost of raw materials, equipment, logistics, power interruptions, supply-chain interruptions, manufacturing footprint changes, geopolitical events, sanctions, tariffs, trade actions, packaging laws, climate, labor, and inflation in the same risk frame. Crown adds the pass-through problem: it says tariffs and trade restrictions could raise raw-material costs and affect consumer and industrial activity, while its ability to mitigate inflation through price-index provisions and commodity contracts varies by region. [43] [44] For CPG, that is regionalization in practical terms: even when production moves, packaging, equipment, energy, logistics, and pass-through mechanics still have to move with it.

WHAT IT MEANS FOR CPG

The trap is assuming a regional chain is automatically safer. It only works if suppliers are qualified, logistics are reliable, documentation is clean, and the local cost structure is understood. The second trap is underpricing the transition: new suppliers need qualification, new plants need labor, water, power, permits, and transport, and a chain that shortens shipping distance can lengthen complexity if it still leans on imported components and machinery.

The real decision is not "global or local." It is which parts of the system need global scale and which need regional control. A company can centralize formulation, regionalize manufacturing for key markets, keep global sourcing for a few inputs,

and localize claims and packaging. The cost of that flexibility is that a single global formulation can fracture into several regional ones, and a regional supplier that buys resilience can also cut your purchasing leverage.

WHAT WOULD CHANGE THIS READ

The filings tell the story: diversification language, local-for-local production, tariff avoidance, customs complexity, or capex tied to Mexico, Vietnam, India, or North America all push this along. It reverses if China's cost advantage widens, if regional alternatives stumble on scale or quality, or if companies unwind diversification once redundancy costs outrun the resilience it buys.

COUNTRIES THAT MATTER MOST

COUNTRY	ROLE IN THE FORCE	WHY CPG LEADERS SHOULD CARE
China	Existing manufacturing scale, materials, electronics, policy risk.	Diversification still starts from a China baseline.
Vietnam	China-plus-one manufacturing, export platform, consumer growth.	Vietnam can absorb some movement but not every capability.
Mexico	Nearshoring, North American manufacturing, food, logistics.	Mexico shortens routes into the U.S. while raising its own capacity and infrastructure questions.
India	Demand growth, manufacturing optionality, digital commerce.	India can be both a market and an operating platform.

EXECUTIVE QUESTIONS

- Which product families need regional sourcing because compliance, market access, lead time, or service would break under a single-region model?
- Which suppliers are regional in name but still dependent on China-linked inputs, components, or machinery?
- Which regional moves buy enough resilience to justify higher working capital, added qualification cost, or lost purchasing leverage?

FOR 2026–2035 PLANNING

Review regionalization by product family, not by company slogan. You can regionalize packaging but not active ingredients; assembly but not components; manufacturing but not the machinery. The output is a regionalization map that separates four questions usually treated as one: what is sourced, what is manufactured, what is regulated, and what is sold locally.

Force 6: Consumer Trade-Down Becomes More Selective and Category-Specific

THE READ

Consumer weakness will probably not arrive as one clean spending collapse. It arrives as mix shift — premium to value, national brand to private label, a delayed durable replacement, a smaller basket, a meal moved from restaurant to home. That is what makes it hard: you can be right about the consumer in aggregate and wrong about your category.

WHY IT MATTERS

The current U.S. evidence reads as selective pressure, not collapse. BLS reported average hourly earnings up 3.4% year over year in May 2026. BEA reported April disposable personal income down 0.1%, real disposable income down 0.5%, personal consumption up 0.5%, and a 2.6% saving rate. The Federal Reserve reported April consumer credit rising at a 4.8% annual rate, with revolving credit at 10.4%. The New York Fed reported total household debt of \$18.8 trillion in Q1 2026, with aggregate delinquency little changed. [14] [15] [16] [17] Wages are still growing; the cushion underneath spending is thinner.

The protein case makes it concrete. USDA ERS May 2026 data showed retail Choice beef at 1,034.7 cents per pound, all-fresh beef at 951.9, pork at 494.1, and broilers at 243.9. Year-over-year CPI showed beef and veal up 12.9%, pork up 2.6%, poultry up 1.3%, dairy down 1.0%, and eggs down 35.2% — the eggs number coming off an elevated avian-flu base, not signaling broad deflation. [19] That spread does not prove substitution on its own. It gives a pressured household a visible, specific reason to reconsider the protein basket: beef is expensive in a way chicken is not.

And private label is now a structural lever, not a niche. AP, citing Circana, reported private brands at 23.9% of U.S. packaged food and beverage products sold in 2025, up from 23.7% in 2024, while Walmart said its store-label brands account for about a quarter of U.S. merchandise sales and is redesigning Great Value across roughly 10,000 products. [20] When the largest U.S. retailer reworks 10,000 own-brand items, that is a price-ladder and loyalty decision aimed straight at the trading-down shopper. Retailer language across Walmart, Costco, Kroger, Target, Dollar General, Dollar Tree, and BJ's points the same way: consumers are not stopping their spending so much as operators are redesigning the price ladder, pack architecture, promo calendar, and private-label mix around a more selective consumer. [18]

WHAT IT MEANS FOR CPG

The discipline is to stop trusting averages. A stable revenue line can hide weaker unit volume; private-label growth can hide national-brand erosion; club-channel strength can mask weakness elsewhere. Often the consumer does not leave the category — they stay and change the basket, which is worse, because revenue holds while equity quietly drains. A shopper keeps buying coffee but trades down in format. A family keeps buying protein but switches species and wastes less. The

same household that absorbs a higher cereal price trades down in meat, or protects the kids' products and moves adult categories to value.

So read trade-down as a portfolio problem, not a panic. Which brands are permissioned to hold price? Which categories need an opening price point? Which packs protect trial? Which promotions are quietly teaching the consumer to wait? Which private-label threats are structural rather than cyclical? A company with strong premium and strong value but no credible middle can lose shoppers in both directions at once.

WHAT WOULD CHANGE THIS READ

The signs to track: retailer traffic and ticket diverging, private label gaining share, protein substitution surfacing in the data, rising credit stress, and brands citing mix pressure rather than clean volume growth. The read softens if real income recovers, savings rebuild, credit stress eases, premium holds, and retailer data shows broad demand rather than selective substitution.

COUNTRIES THAT MATTER MOST

COUNTRY	ROLE IN THE FORCE	WHY CPG LEADERS SHOULD CARE
United States	Profit pool, consumer spending, private label, protein substitution, credit pressure.	U.S. behavior reveals margin and mix stress before global reports do.
India	Incremental consumer growth and affordability tiers.	India shows how digital commerce and price tiers interact in a growth market.
China	Consumer demand, confidence, youth employment, platform commerce.	China demand shifts move both local CPG growth and global commodity flows.
Brazil	Food input and protein supply.	Brazil drives the cost side of trade-down through protein and feed.

EXECUTIVE QUESTIONS

- Which categories are vulnerable to substitution, not just volume loss?
- Where does private label turn into a margin problem rather than a shelf one?
- Which pack sizes protect accessibility without training the consumer away from the brand?

FOR 2026–2035 PLANNING

Plan trade-down as a ladder. The strongest brands will know which shoppers need a smaller pack, which need a lower price point, which need private-label defense, and which still pay for premium. This is where finance, category, brand, and sales have to share one view — finance sees margin, category sees mix, brand sees trust, sales sees the retailer — and connect them before a weak consumer becomes a messy portfolio reaction.

Force 7: Wellness and Metabolic Health Reshape Food, Beverage, and Supplement Strategy

THE READ

Wellness is moving from lifestyle language to specific product architecture: metabolic health, satiety, protein, digestive health, glucose response, evidence-backed ingredients, and claims discipline. The shift reaches well past GLP-1 drugs — it changes how consumers reinterpret food, portions, functional claims, and routines — but it rewards a narrower kind of product than the broad "wellness" framing suggests.

WHY IT MATTERS

Start with the burden, not the trend. CDC/NCHS estimated U.S. adult obesity prevalence at 40.3% over August 2021–August 2023 and severe obesity at 9.4%; in age-adjusted trend terms, severe obesity rose from 7.7% in 2013–2014 to 9.7% in 2021–2023. [21] That keeps metabolic health commercially relevant even in periods when overall prevalence is roughly flat.

The medical pathway is moving too. FDA approved tirzepatide for chronic weight management in 2023, and in 2024 approved an expanded Wegovy indication to reduce the risk of serious cardiovascular events in adults with cardiovascular disease and obesity or overweight. [22] [23] Food demand does not vanish in that world. What shifts is the design brief: appetite, portion size, protein, digestive tolerance, and metabolic-support positioning move from marketing language to first-order product variables.

And the claims environment sets the ceiling. FDA holds dietary-supplement firms responsible for evaluating safety and labeling before marketing and can act against adulterated or misbranded products after entry; FTC guidance requires health and safety claims to be truthful and backed by competent, reliable scientific evidence. [24] [25] That is why the opportunity is narrower than the category's enthusiasm: the gate is evidence.

WHAT IT MEANS FOR CPG

The honest version of this force is that convergence is hard. A compound can look promising in research and still fail as a product because the effective dose is impractical, the taste is poor, the claim is too narrow, the supply chain is thin, the margin is unattractive, or the regulatory path is unclear. The consumer does not buy evidence. They buy a format, a promise, a price, and a habit — and the product has to clear all of those at once.

Treat GLP-1 as the worked example. Its effect on the category is not confined to prescriptions; it reshapes portion expectations, protein demand, snack frequency, indulgence, and digestive-health positioning. A company that files it under "pharma" misses the food and supplement implications sitting right next to it. Apply the same discipline to the emerging-ingredient pipeline — botanicals, postbiotics,

microbiome products, light-based tools: each is commercially relevant only if it can become a real category with a buyer, a defensible claim, a supply chain, and a repeat-use case. Until specific examples clear that bar, this remains a measured scouting lane rather than a proof point.

WHAT WOULD CHANGE THIS READ

Conviction grows when the pieces move together — clinical evidence, consumer adherence, shelf expansion, ingredient-supplier investment, and supportive regulatory language. It erodes if claims enforcement outpaces the evidence, if consumers drop expensive routines, if GLP-1's category effects stay narrow, or if ingredient supply proves unreliable.

COUNTRIES THAT MATTER MOST

COUNTRY	ROLE IN THE FORCE	WHY CPG LEADERS SHOULD CARE
United States	Innovation, claims scrutiny, GLP-1 behavior, premium wellness, retail health.	U.S. adoption defines category economics and claims boundaries.
India	Consumer growth, Ayurveda-adjacent behavior, digital commerce, wellness demand.	India shapes high-volume wellness and digital-channel behavior.
China	Functional wellness, e-commerce, consumer demand, regulatory complexity.	China can scale or redirect wellness categories quickly.
Brazil, Vietnam, Indonesia, Malaysia-region supply lenses	Biodiversity, botanicals, ingredients, supply origins.	Emerging ingredients may come from underweighted regions with sourcing and claims complexity.

EXECUTIVE QUESTIONS

- Which wellness claims can actually be defended with evidence?
- Which formats fit how consumers really behave, not how they say they will?
- Which categories are exposed if appetite, portioning, or metabolic-health behavior shifts?

FOR 2026–2035 PLANNING

Build wellness strategy around one question: what job is the product doing, and what evidence makes the claim credible? Broad wellness language will not carry the next cycle. The products that win will connect benefit, evidence, format, routine, taste, safety, and claims discipline — a higher bar than trend participation, and one that favors companies able to combine science, supply chain, consumer insight, and regulatory judgment in the same product.

Force 8: AI Commerce Changes Discovery, Loyalty, Private Label, and Consumer Targeting

THE READ

AI commerce changes how products are found, compared, recommended, and bought. The shelf is becoming a search result, a recommendation layer, a retail-media placement, a shopping assistant, and a data relationship at the same time. The near-term risk for brands is losing visibility before losing share. The evidence is still early, so this belongs in the forming tier, not the in-the-P&L tier — but the direction is clear enough to plan against.

WHY IT MATTERS

Retailers and platforms are gaining influence over the decision path. If an AI system summarizes options, ranks products, recommends substitutions, or personalizes offers, the brand's question changes from "who sees the ad" to "what does the buying system say when a shopper asks for an option like mine."

The platform moves are directional but real. Amazon launched a generative AI shopping assistant built to answer product questions, compare products, and recommend inside its store. Google introduced AI Mode in Search, pushing upstream discovery toward answer-and-task workflows. Instacart's Ads and Enterprise Platform pages show sponsored products, shoppable display and video, keyword targeting, smart carts, loyalty integration, and personalized recommendations stitching online and physical grocery together. [26] [27] [28] None of that yet proves durable share shift or private-label steering at scale. It does prove the discovery layer is being rebuilt around guided answers and product data.

India is the clearest quantitative anchor for where this scales fastest. ITA projects India's e-commerce market reaching \$325 billion by 2030 and finds online preference already meaningful across personal care, household supplies, consumer electronics, apparel, and more, with price, discount, delivery time, ratings, reviews, expiration dates, and country of origin all weighing on the purchase. [11] That is precisely the environment where guided discovery and AI-mediated comparison matter most.

NPCI's official UPI statistics now give the payment layer direct scale. For May 2026, NPCI reports about 23.2 billion UPI transactions and about Rs 29.90 lakh crore in value, with 720 banks live on UPI; its monthly table also shows partial June 2026 data through 16 June. [47] [51] India's mobile-first commerce environment is where product discovery, price comparison, payment habit, and AI-guided shopping can converge fastest.

The operator layer now supports that read. Swiggy reported Instamart gross order value up 68.8% year over year to Rs 7,881 crore in Q4 FY2026, across 1,143 dark stores, with average order value up 32.8% to Rs 700 — and management framing the next phase of quick commerce as anticipating consumer needs, not only fulfilling them. [55] Reliance Retail reported 387 million registered customers, 1.93 billion

annual transactions, and Q4 hyper-local daily orders up more than 300% year over year, now spanning grocery and non-grocery on a two-hour delivery promise. [56] For CPG, the lesson runs past the interface: quick commerce is rewriting network design, assortment, basket architecture, and the delivery promise — and teaching platforms how consumer demand actually behaves.

WHAT IT MEANS FOR CPG

AI commerce changes the economics of being understood. A product with weak content, vague claims, thin reviews, patchy availability, or unclear differentiation can be summarized badly or skipped entirely. A product with structured content and a clear use case travels better through search, recommendation, and assistants. Picture two near-identical products: when a shopper asks for "a cheaper alternative," the system steers toward private label or the legible value option; when a shopper asks for a specific feature, the system surfaces the clearest data, not the best story. The brand that leans on vague premium language is the one most exposed.

So physical shelf, retail media, and price still matter — and machine-readable claims, comparison logic, substitution paths, and availability data join them. A brand increasingly has to manage how it is described by a retailer, a marketplace, a search engine, and an assistant at once.

WHAT WOULD CHANGE THIS READ

It strengthens if retailers expand AI shopping tools, retail-media revenue grows, brands disclose AI-commerce investment, and private label gains visibility through recommendation systems. It weakens if consumers distrust AI shopping, if retailers cannot convert these tools into sales, or if brands hold discovery through direct loyalty and physical presence.

COUNTRIES THAT MATTER MOST

COUNTRY	ROLE IN THE FORCE	WHY CPG LEADERS SHOULD CARE
United States	Retail media, platform commerce, AI adoption, brand economics.	U.S. retailers set commercial models that spread globally.
India	Digital payments, e-commerce growth, mobile-first commerce.	India shows how AI commerce scales in a high-frequency mobile market.
China	Platform commerce, social commerce, recommendation systems.	China remains a leading test bed for platform-shaped behavior.

EXECUTIVE QUESTIONS

- How does the brand appear when a shopper asks for a substitute?
- Which claims are clear enough for AI and retail systems to summarize accurately?
- Where can private label use AI to close the trust gap?

FOR 2026–2035 PLANNING

Treat product content as infrastructure. Claims, attributes, certifications, reviews, availability, price, and use cases need to be structured well enough to survive comparison by platforms and assistants. The near-term risk is not that AI replaces shopping; it is that AI changes the order in which options are considered. A brand that is hard to understand gets skipped. A private label with clear value gets surfaced. A vague middle brand loses.

Force 9: Automation and Industrial AI Move from Labor Story to Throughput Story

THE READ

Automation matters less as a way to cut labor and more as a way to hold throughput, reliability, quality, and resilience. For CPG it earns its keep on uptime, inspection, cold-chain reliability, warehouse flow, safety, and scheduling. And it carries a built-in catch: the same material and qualification constraints from Forces 3 and 4 can slow the automation a company is counting on to manage everything else.

WHY IT MATTERS

The evidence base has moved from logic to operators. Walmart's automation reporting describes next-generation distribution centers that use store-level data and robotics to build more useful pallets, cutting truck-unloading from hours to minutes, with management expecting 16 such centers by the end of 2026; separate reporting describes a 725,000-square-foot fresh-food center in Wellford, South Carolina, serving 180 stores at a high degree of automation across frozen, dairy, deli, and perishables. [35] That reframes automation as a food-availability, spoilage, service-level, and labor-flow issue, not a warehouse-technology story. Instacart's Enterprise Platform adds the retail-execution layer — AI assistant support, smart carts, loyalty, recommendations, online-to-store workflows. [28]

Signals outside pure CPG point the same way: HII's HYPR program in heavy fabrication, Pronto's autonomous haulage expansion across Heidelberg Materials sites, Cognex's OneVision vision-AI adoption, and the iSEE/TICO autonomous yard-truck partnership all show automation moving first where the operating problem is measurable, repeatable, and expensive. [29] [30] [31] [32] These remain directional because they are not all CPG operators, and none of them prove broad CPG ROI yet. They support the narrower claim: automation lands first at yards, warehouses, factories, cold-chain nodes, grocery operations, and controlled industrial sites.

PepsiCo is helpful here because the language is less flashy and more operational. Its filing describes a multi-year productivity plan that includes business transformation, enterprise resource planning implementation, process automation, and manufacturing and supply-chain efficiency efforts. That is the CPG version of

this force: automation as process discipline, footprint discipline, and execution reliability, not a robot headline. [39]

Two more operator filings make the throughput point cleaner. UPS says its Network of the Future initiative is meant to improve network efficiency through automation and operational sort consolidation, while its related Network Reconfiguration can reduce facilities, vehicles, aircraft, and workforce and redesign processes. C.H. Robinson describes itself as one of the largest global logistics providers and as a leader in Lean AI supply chains, and its filing ties rising cost conditions to dynamic pricing and costing capabilities that help it respond faster to spot-market pressure. [45] [46] Read together, the two describe automation and industrial AI as network design and operating response — a throughput and resilience play, not a headcount one.

WHAT IT MEANS FOR CPG

Assess automation as an operating system, not a line item — uptime, serviceability, spare parts, data rights, cyber exposure, vendor concentration, and material exposure all in one view. Cold chain is the sharpest case: food safety, frozen, pharma, supplements, and grocery all ride on refrigeration and monitoring, so when equipment cost rises or a part gets hard to qualify, the consequence is service levels and product availability, not just a higher capex number.

Two things the labor framing misses. First, quality: automation reduces variation, improves inspection, and documents compliance, which in tight safety, freshness, dosage, or claims categories can matter more than the labor savings. Second, finance: higher rates can delay a project even when the operating case is strong, opening a gap between strategic need and what actually gets built. And the circularity is real — the more automated the base, the more it depends on sensors, motors, controls, electricity, software, cyber controls, and qualified service. Solving the labor constraint can deepen the mineral and supplier constraint.

WHAT WOULD CHANGE THIS READ

What would confirm it: operators in CPG, logistics, and retail disclosing multi-site deployments, uptime gains, lower shrink, better quality control, or capex tied explicitly to throughput. What would undercut it: ROI that stays narrow, labor that loosens, equipment lead times that stretch too far, or capex deferred while financing stays expensive.

COUNTRIES THAT MATTER MOST

COUNTRY	ROLE IN THE FORCE	WHY CPG LEADERS SHOULD CARE
China	Electronics, components, sensors, rare-earth-linked equipment.	China exposure can sit inside automation and controls.
United States	Innovation, plant modernization, warehouse automation, retail logistics.	U.S. operators set adoption patterns and vendor expectations.
Mexico	Nearshoring and industrial expansion.	Automation may decide whether regional manufacturing scales efficiently.

COUNTRY	ROLE IN THE FORCE	WHY CPG LEADERS SHOULD CARE
Vietnam and India	Manufacturing diversification.	Both may need automation to support scale, quality, and reliability.

EXECUTIVE QUESTIONS

- Which sites should be automated first because throughput, spoilage, quality, safety, or service is the binding constraint?
- Which systems are hard to service if parts, software access, sensors, controls, or vendor support tighten?
- Which projects reduce operating risk rather than only improving labor productivity?

FOR 2026–2035 PLANNING

Pair every automation plan with an exposure map covering equipment vendor, critical components, software and service access, spare parts, energy load, cybersecurity, and qualification timelines. And split the business case in two: labor savings on one side, resilience on the other. A project that improves uptime, quality, safety, or cold-chain reliability can be worth doing even when the labor-only payback looks ordinary.

Force 10: Climate Adaptation Becomes a Capex, Sourcing, and Insurance Issue

THE READ

Climate adaptation is moving out of sustainability language and into operating budgets — facilities, crops, routes, insurance, worker safety, water, supplier reliability, resilience capex. The useful question for an operator is narrow: which facilities, routes, and suppliers need hardening before the next loss event reprices them?

WHY IT MATTERS

Brazil shows the agriculture-to-assurance chain, and the detailed production and corridor numbers live in Force 1; here Brazil is an adaptation lens, because traceability, supplier assurance, water, deforestation exposure, and market access increasingly overlap. The 2024/25 land-use record — a Legal Amazon PRODES rate of 5,731 square kilometers and Cerrado state totals of about 7,235 square kilometers — matters because buyer standards and land-use scrutiny can decide market access, not just reputation. [4] The same adaptation logic reaches the U.S. through drought, heat, crop insurance, freight, and facility exposure; Indonesia through palm oil, nickel, and land-use rules; and Saudi Arabia through water, food security, and capital. [12] [13]

The insurance layer is now strong enough to lead with. Aon's 2026 Climate and Catastrophe Insight reported 2025 global disaster economic losses of about \$260 billion, with \$127 billion insured; the Palisades and Eaton fires alone accounted for \$41 billion of insured losses, severe convective storms caused \$61 billion of insured losses globally, and the protection gap held at 51%. [36] The CPG implication is not that facilities become uninsurable. It is that deductibles, exclusions, risk engineering, and resilience capex move into the facility-economics conversation — the renewal quote starts shaping the siting decision.

The logistics layer shows how quickly this moves from macro risk to operating cost. C.H. Robinson's Q1 2026 filing described conflict-related ocean rerouting, fuel-cost effects, capacity management through blank sailings, airspace restrictions in the Middle East that lengthened flight times and raised fuel use, and higher diesel-driven transportation costs and complexity for shippers and carriers. [45] That is not climate adaptation by itself, but it is the same planning muscle: routes, fuel, insurance, timing, and contingency capacity belong in one operating view.

The company-language layer points in the same direction. PepsiCo's Q1 2026 filing keeps climate-change and sustainability measures, water scarcity, manufacturing or supply-chain disruption, packaging, transportation, labor, commodity, and energy costs in the same risk discussion. That is the translation this force is tracking: climate and water stop being abstract exposures when they sit next to manufacturing continuity, supply chain, and input-cost pressure. [39]

WHAT IT MEANS FOR CPG

Adaptation spending competes with growth spending, and it usually looks defensive — more redundancy, more storage, water reuse, supplier audits, stronger buildings, alternate routes, backup power, different insurance. In practice it protects revenue, service levels, and retailer confidence. The burden is uneven: a company with concentrated sourcing in one exposed region carries a different problem than one with flexible sourcing; a high cold-chain operator carries a different problem than a shelf-stable one; a brand built on sustainability claims carries a different problem than a low-visibility private-label manufacturer. The recurring failure mode is the gap between a polished sustainability report and an operation that is underprepared for drought, heat, flood, an insurance withdrawal, or a supplier outage. The test is what would fail, not what sounds responsible.

WHAT WOULD CHANGE THIS READ

This builds if insurance costs keep rising, facilities disclose disruption, suppliers invest in resilience, crop regions face repeated stress, and companies start naming adaptation capex. It recedes if insurance availability improves, weather volatility eases in key sourcing regions, disruptions stay isolated, and adaptation costs never reach the capex plan.

COUNTRIES THAT MATTER MOST

COUNTRY	ROLE IN THE FORCE	WHY CPG LEADERS SHOULD CARE
Brazil	Agriculture, land use, logistics, water, buyer assurance.	Brazil climate and land-use pressure can reach ingredients, proteins, and compliance.
United States	Facilities, crop regions, insurance, water, consumer demand.	Climate and consumer pressure can hit supply and demand together.
Indonesia	Palm oil, nickel, land-use and climate exposure.	Indonesia links food ingredients and industrial materials.
Saudi Arabia	Water scarcity and strategic adaptation capital.	Saudi adaptation investment can shape water, food, and infrastructure markets.

EXECUTIVE QUESTIONS

- Which facilities and suppliers are most exposed to water, heat, flood, drought, wildfire, storm, or insurance pressure?
- Which adaptation investments protect revenue, service, or market access rather than only reputation?
- Which routes, facilities, or suppliers need redundancy before insurance pricing or a weather event forces it?

FOR 2026–2035 PLANNING

Tie adaptation to capital allocation. Identify where the spend protects revenue, margin, service, safety, compliance, or market access. The line to hold is between climate language written for communications and adaptation built into operations — the second is what decides whether the company can still source, make, move, insure, and sell the product under stress.

Exhibit 1: Cross-Impact Matrix

High means the force can plausibly change major decisions, costs, timing, or risk controls for many CPG companies before 2035. Medium means it is material but depends on category, geography, or company exposure. Low means the effect is usually indirect. These ratings describe potential impact for exposed companies, not probability: a thinly exposed company may feel a "High" force as background noise, while a heavily exposed one may feel a "Medium" force as a board-level decision. The matrix is deliberately narrowed to the four places the report most directly asks leaders to act — where to source, how to price, where to allocate capital, and where margin is won or lost.

FORCE	SOURCING	PRICING	CAPEX	MARGIN
Food input volatility	High	High	Medium	High
Water stress	High	Medium	High	High

FORCE	SOURCING	PRICING	CAPEX	MARGIN
Resource nationalism	High	High	High	High
Critical minerals	Medium	High	High	High
Regionalized supply chains	High	Medium	High	Medium
Selective trade-down	Medium	High	Low	High
Wellness and metabolic health	Medium	Medium	Medium	High
AI commerce	Low	Medium	Medium	Medium
Automation and industrial AI	Medium	Medium	High	High
Climate adaptation	High	High	High	High

Priority Country Lenses

CHINA

China sits across demand, manufacturing, materials, equipment, platform commerce, and policy at once, which is why it cannot be reduced to a single risk. The current evidence supports three layers: 2025 aggregate U.S. goods-trade exposure, critical-material concentration, and a 2024 OEC/BACI product-mix table showing heavy China-to-U.S. exposure in electronics, machinery, batteries, plastics, vehicle parts, transformers, insulated wire, air conditioners, refrigerators, and adjacent equipment categories. [8] [9] [10] [54] Taken together, the machinery-and-equipment exposure is now supported by more than mechanism alone.

The strategic point is layering. A finished-goods supplier can be outside China while its equipment, components, magnets, sensors, controls, batteries, or packaging machinery are not — so a supplier-origin map alone misses the exposure. China also matters as a demand market: a shift in Chinese demand for soybeans, meat, dairy, infant nutrition, beauty, wellness, or premium goods reaches Brazil, U.S. agriculture, European brands, and Asian suppliers. In some categories China is a growth market; in others a source of volatility. It is best treated as both, and it carries the most weight in resource nationalism, critical minerals, regionalized supply chains, AI commerce, automation, and global demand.

INDIA

India matters as an incremental consumer market, a digital-commerce and payments market, a food-demand market, and a manufacturing alternative — the upside is the combination, not population alone. The evidence supports the direction of e-commerce and mobile-first behavior, and NPCI's official UPI table gives a current scale anchor: about 23.2 billion UPI transactions and about Rs 29.90 lakh crore in value in May 2026, with partial June 2026 data published through 16

June. [47] [51] The operator layer is stronger too: Swiggy's Instamart and Reliance Retail's JioMart/hyper-local disclosures show fast-delivery commerce being built into dark stores, store networks, non-grocery assortment, order frequency, basket size, and city/pin-code coverage. [55] [56]

Treat India as one of the report's most important upside markets, but not a frictionless one. The constraint set — affordability, infrastructure, water, regional diversity, regulation, quality, logistics — is as real as the opportunity. For CPG leaders, India reshapes thinking on pack size, price ladder, local sourcing, digital discovery, fast delivery, and claims: a premium-channel architecture from the U.S. often has to be rebuilt for India, and a traditional-retail approach in one region may need a digital-first one in another. India is a major strategic option for manufacturing when quality, suppliers, logistics, compliance, and unit economics work — a real alternative, not a universal China substitute.

UNITED STATES

The U.S. is a profit pool and a signal market at the same time. It is where global pressure becomes commercially legible: a commodity move becomes a grocery bill, a freight move becomes a fuel surcharge, a confidence problem becomes private-label share, a wellness trend becomes a claims-and-retail-health question, and an AI-commerce tool becomes a new retail-media model. It matters across trade-down, AI commerce, wellness, automation, water, regulation, and food-input pass-through, and it is where margin pressure surfaces first through retailer commentary, private label, credit stress, protein substitution, and pack architecture. Read U.S. consumer pressure as connected, not purely domestic — fuel, fertilizer, shipping, tariffs, credit, and global commodity flows all reach the household through different doors.

BRAZIL

Brazil earns flagship status because it touches soybeans, corn, sugar, coffee, beef, poultry, pork, ethanol, water, land-use assurance, and export corridors — and because it makes the report concrete. It is not "agriculture matters." It is those crops and proteins, plus fertilizer, fuel, ports, China demand, and buyer compliance, all interacting. Brazil also shows why logistics is part of food strategy: a crop is not globally available until Santos, Paranaguá, Itaquí, and the northern corridors move it, and a constraint on ports, freight, fuel, or storage reaches feed, sweeteners, beverages, proteins, retail prices, and foodservice.

The port evidence now supports the claim with product-level color. Santos gives the national-scale corridor view: first-four-month 2026 movement of 59.3 million tons, with soybeans, sugar, soybean pellets, diesel, fuel oil, and gasoline all contributing to the movement mix. [5] Portos do Paraná gives the ingredient and protein view: May 2026 soybean exports up 91%, soybean meal up 27%, vegetable oils up 53%, containerized exports heavily tied to frozen animal proteins, and about 1.5 million tons of meat exported year to date. [6] Itaquí gives the northern-corridor and input view: grain outflow, soy and corn, petroleum products, and fertilizers sit together in the same operating geography. [52] A CPG team does not need every port table to understand the strategic point; it needs to know that sweeteners, feed, proteins, oils, fuel, and fertilizer can all move through logistics systems that set timing and cost.

The operator layer is now stronger. JBS's 2024 Sustainability Report Executive Summary describes operations across 25 countries, more than 250 production facilities and commercial offices, more than 320,000 customers, and more than 180 countries served. It reports 2024 net revenue by product origin at 51% USA and 26% Brazil, and describes a protein platform spanning beef, pork, poultry, lamb, fish, plant-based options, cultured protein, and prepared foods. [50] For the Brazil lens, the most relevant language is not only scale. JBS describes land stewardship, water regulation, waste management and packaging, supplier partners, and a deforestation-free sourcing policy for Brazil that reaches Amazon and Cerrado risk through monitoring, producer support, Green Offices, and its Transparent Livestock Farming Platform. [50] That turns Brazil from a commodity-volume story into a buyer-assurance story: land-use, traceability, water, packaging, and supplier verification can decide market access as much as crop size or protein volume.

Raízen adds the sugar-ethanol-fuel side of the same Brazil lens. Its Q3 2025'26 materials report lower crushing volumes and weaker agricultural yields, weather damage, softer ethanol and sugar prices and volumes, fuel-distribution growth, and a capex plan focused on sugarcane field renewal, industrial asset integrity, E2G plants, refinery modernization, and distributed solar. [53] Read alongside Force 1, it shows weather and crop pressure turning into fuel, energy, logistics, capex, and financing questions — well beyond a commodity-price note.

INDONESIA

Indonesia matters because it links palm oil, nickel, population growth, food consumption, downstream processing, land-use rules, and climate exposure — and because it crosses categories executives usually separate. Palm oil sits in food, personal care, household products, and ingredients; nickel sits in batteries, stainless-linked systems, industrial policy, and downstream processing. The risk is treating Indonesia as a palm-oil note in one section and a nickel note in another. The better read is a single resource-policy and consumer-growth country with exposure to climate, land-use rules, and downstream industrial ambition, relevant to sourcing, compliance, packaging, industrial inputs, and regional demand.

VIETNAM

Vietnam is a China-plus-one manufacturing platform and a consumer-growth market — a regionalization lens, not a full China replacement. Put plainly, it is a capability story rather than a slogan: the useful question is which capabilities are actually moving, which stay tied to China, and which still require imported components, machinery, or materials. For CPG it can matter through packaging, apparel-adjacent categories, consumer-goods assembly, regional sourcing, and Southeast Asian demand — and the real test is where it changes the economics of regional supply-chain design.

MEXICO

Mexico matters through nearshoring, North American manufacturing, food production, logistics, labor, water, and USMCA exposure. It is not just a lower-distance supplier; it is a regional operating model with its own infrastructure and

policy constraints. It pays off most where speed, proximity, trade rules, and North American integration are valuable — but proximity does not erase water, power, labor availability, security, border throughput, or rule-of-origin compliance. It belongs in regional supply chains, automation, food inputs, and footprint strategy.

ZAMBIA

Zambia is a copper and grid-expansion story, included precisely because it is not an obvious CPG country. USGS estimates Zambia copper mine production at 940,000 metric tons in 2025 and refinery production at 270,000, with listed reserves of 21 million metric tons. [10] Many executives know copper matters; fewer connect Zambia to their own operating constraints. The chain is long but real: mine and grid constraints affect copper supply, copper affects electrical and industrial systems, and those systems sit behind plants, warehouses, refrigeration, and logistics. If copper availability, grid expansion, or project execution moves electrification and equipment costs, it reaches consumer goods indirectly — which is the point of including it.

DEMOCRATIC REPUBLIC OF THE CONGO

The DRC matters through cobalt, copper, governance, due diligence, transport, and power — a critical-minerals lens and a compliance lens at once. USGS estimates DRC copper mine production at 3.2 million metric tons in 2025 and refinery production at 2.8 million, and reports the DRC as the leading mined cobalt source at an estimated 73% of world total, followed by Indonesia at 14%. [10] The CPG connection is indirect but real — batteries, electrification, automation, logistics equipment, supplier assurance — and the operating constraint is often due diligence itself: not whether material exists, but whether it can be financed, insured, certified, accepted, and used by companies with public commitments and regulatory exposure. The DRC is the reminder that the clean-energy and automation transition carries complicated upstream dependencies even for companies far from any mine.

SAUDI ARABIA

Saudi Arabia matters as a strategic capital allocator, energy actor, food-security investor, water-technology sponsor, and industrial-diversification market. The evidence now supports more than the water and food-security capital lens. Ma'aden's 2025 Integrated Report describes the company as a diversified producer across phosphate, aluminum, gold, industrial minerals, and base minerals, with 13 and rising mines and sites, around 8,000 direct employees, and exports to more than 55 countries. It also describes an integrated aluminum chain centered at Ras Al-Khair and one of the world's largest integrated phosphate fertilizer operations serving more than 45 countries, with phosphates, aluminum, and base metals/new minerals as the core operating segments. [48] SWPC adds the current water-infrastructure layer, with named desalination, wastewater, transmission, and storage capacities detailed in Force 2. [49] The logic chain is what to watch: water scarcity creates a food-security imperative, food security drives investment in global agriculture and commodity infrastructure, and diversification pulls capital toward mining, phosphates, aluminum, water, logistics, and infrastructure — often faster than operating companies expect.

Four Scenarios for Consumer Goods, 2026–2035

SCENARIO A: RESILIENT REWIRING

Companies absorb volatility through regional sourcing, better data, inventory discipline, flexible manufacturing, supplier qualification, and stronger category-level pricing. The decade is difficult but manageable; margins stay pressured, but the best operators use sensing and design to stay ahead of the worst shocks. The winners do not eliminate volatility — they shorten the time between signal and decision. They already know which ingredients have alternate suppliers, which factories can shift production, which packaging specs can change, which products tolerate reformulation, and which retailers will accept which price actions. This scenario rewards clean data, strong procurement, disciplined category management, and teams that mapped their second-order dependencies — refrigeration components, automation parts, water, packaging machinery, logistics bottlenecks — before they had to. The signal is not that costs disappear; it is that some companies show visibly better operating control than peers under identical pressure.

SCENARIO B: MARGIN COMPRESSION DECADE

Input costs, climate risk, water stress, resource controls, and trade-down keep grinding on gross and operating margin. The business does not collapse; it gets squeezed, and the squeeze is cumulative. One year of high freight is manageable. One ingredient spike is negotiable. One weak consumer quarter is explainable. The problem is the stack: higher input volatility, more expensive redundancy, tighter consumers, harder claims scrutiny, more complex sourcing, and rising capex all at once. This scenario punishes companies that lean on repeated price increases without product, pack, or channel change, and companies whose premium is not strong enough to hold share while their value offer is not credible enough to defend volume. The decision that defines it is capital allocation — resilience, automation, marketing, innovation, price support, acquisition, or debt — where the wrong answer protects the quarter and weakens the decade.

SCENARIO C: FRAGMENTED CONSUMER MARKETS

Regions diverge sharply on regulation, affordability, trust, platform behavior, sourcing rules, and market access. This favors companies that can run different playbooks by region and hurts those built around one global consumer, one supplier base, and one pricing logic. Global scale still matters but stops being enough: a product that works in the U.S. may need a different price ladder in India, different claims discipline in Europe, a different platform strategy in China, different sourcing assurance in Brazil, and different packaging economics in Mexico or Vietnam. Fragmentation raises management complexity and creates room for companies with strong local insight to build what global averages miss. The risk is mistaking fragmentation for chaos — it is not chaos if a company knows which regional differences matter and which do not.

SCENARIO D: TECHNOLOGY-LED RESET

AI, automation, new materials, better measurement, water reuse, and evidence-backed wellness relieve some pressure while creating new dependencies. This is the most optimistic path and the least simple. AI improves planning, discovery, demand sensing, and operations; automation improves throughput and quality; water reuse eases local constraints; new ingredients and evidence open wellness categories; new materials cut some packaging and input exposure. The catch is dependency: better systems need power, chips, sensors, software, data rights, maintenance, cyber controls, and qualified suppliers, and new ingredients need evidence, safety, supply, and claims discipline. The right posture is neither hype nor dismissal — the question is which technologies relieve a real constraint and which only add complexity.

Strategic Agenda for CPG Leaders

1. REBUILD THE COST STACK AROUND MECHANISMS

Most planning still separates ingredients, packaging, freight, manufacturing, marketing, and demand. That separation is good for accountability and dangerous for foresight. The next model should show how pressure moves: fuel into freight and farm economics, fertilizer into crop costs, crop into feed, feed into proteins, proteins into substitution, substitution into retailer negotiation, and that negotiation into price, pack, promotion, and margin. The same map exists on the industrial side: copper into electrical systems, equipment, buildings, refrigeration, vehicles, and automation; rare earths into motors and sensors; graphite into batteries; water into plants and suppliers; tariffs into sourcing and capex. These are not abstract risks. They are cost-stack mechanics.

Exhibit 2: Cost-Stack Pressure Map (illustrative)

A filled-in example shows how the framework becomes a decision tool. The rows below are illustrative planning logic, not a claim about any one company's SKU.

CATEGORY EXAMPLE	PRESSURE LAYER	SIGNAL	BUSINESS MECHANISM	EXECUTIVE QUESTION
Ready-to-drink coffee	Ingredient	Coffee, sugar, dairy, sweetener, or flavor input moves faster than price-list timing.	Gross margin compresses before pricing, promotion, or pack changes catch up.	Can the brand protect margin through pack architecture without damaging velocity?
Ready-to-drink coffee	Packaging and refrigeration	Aluminum, resin, labels, cold-chain energy, and refrigeration parts move together.	A beverage margin issue becomes an industrial-input and service-level issue.	Which packaging or cold-chain assumptions belong in the same margin review as coffee costs?

CATEGORY EXAMPLE	PRESSURE LAYER	SIGNAL	BUSINESS MECHANISM	EXECUTIVE QUESTION
Ready-to-drink coffee	Consumer demand	Households protect staples but trade down on premium beverage formats.	Revenue may hold while mix and frequency deteriorate.	Which value offer defends the household without teaching the consumer to wait for discounts?
Ready-to-drink coffee	Regional exposure	Brazil coffee or sugar pressure meets U.S. consumer affordability pressure.	A sourcing issue becomes a retailer negotiation and price-ladder issue.	Which region, supplier, and retailer signals should trigger the same meeting?

The point of the exhibit is not precision for its own sake. It is to force the planning team to connect signals that normally live in separate functions. Built for a specific category, the same table would carry company-specific cost shares, contract timing, volume sensitivity, and named decision owners.

2. TREAT COUNTRY EXPOSURE AS A BUSINESS FUNCTION

Country exposure should not live only in government affairs or supply chain. It should be visible to category, procurement, finance, strategy, legal, and innovation. Brazil is a category exposure. China is a materials and manufacturing exposure. India is a demand and channel exposure. Mexico is a regional operating exposure. Saudi Arabia is a capital and water exposure. Zambia and the DRC are industrial-input exposures. Indonesia is both food and minerals. The output is a short country-by-force view per major category: if a category leans on Brazil for ingredients, China for equipment, Mexico for manufacturing, and U.S. consumers for margin, the team should see those four dependencies on one page.

3. SEPARATE GROWTH BETS FROM RESILIENCE BETS

Some investments create growth, some protect the right to operate, and some do both. The distinction matters because resilience bets look unattractive when judged only on near-term growth. Water reuse, supplier redundancy, alternate packaging approval, cold-chain monitoring, cybersecurity, local sourcing, backup power, and route flexibility rarely show obvious growth — and they can still prevent margin damage, service failure, regulatory trouble, or reputational risk. The best plans name which resilience bets protect the core and which growth bets open new revenue. Make the marginal-dollar rule explicit:

Exhibit 3: The Marginal-Dollar Rule

SITUATION	FIRST DOLLAR GOES TO	SECOND DOLLAR GOES TO	WHAT TO AVOID
Pressure already in the P&L	Pricing architecture, supplier terms, pack economics, service-level protection.	Targeted resilience where the bottleneck is known.	Broad transformation spend that does not relieve the current constraint.

SITUATION	FIRST DOLLAR GOES TO	SECOND DOLLAR GOES TO	WHAT TO AVOID
Pressure forming but not yet urgent	Supplier qualification, alternate specs, monitoring, pilots, option-building.	Customer and retailer tests that protect future flexibility.	Waiting for perfect proof, then paying emergency prices later.
Structural capital-cycle pressure	Facility, water, energy, automation, insurance, and industrial-input screens before approval.	Resilience capex where failure would damage revenue or market access.	Treating defensive capex as optional because it does not look like growth.

4. BUILD A BETTER WEAK-SIGNAL REVIEW

A patent, a research paper, a policy notice, an earnings comment, a port release, a drought map, a retailer quote, or a mineral report is worth nothing on its own. It becomes worth something when it helps a leader see what could change. Run every signal through four questions: What decision would this affect if it continued? Which part of the business feels it first? What evidence would confirm movement toward impact? What evidence would weaken the read? That last question is the discipline that keeps foresight from collapsing into trend collecting.

5. MAKE FORECAST ACCOUNTABILITY VISIBLE

Long-range foresight and scoreable forecasts are different products that should reinforce each other. The report carries a concise forecast record so readers can see judgment tracked over time. Keep it simple: what was forecast, when, at what probability, what happened, and what was learned. Lower Brier scores are better; the discipline is public accountability over time.

Indicator Dashboard

The dashboard follows the operating lanes used for ongoing monitoring. Several forces appear in more than one lane because that is how the pressure actually reaches companies: water is an agriculture issue and a capex issue, minerals are an industrial-input issue and a global-risk issue, trade-down is a consumer issue and a margin issue.

Agriculture and food inputs: Brazil crop revisions; drought and water stress in major crop regions; fertilizer pricing and port flow; livestock margins and feed costs; protein substitution; food-at-home pressure; fuel and freight pass-through.

Critical minerals and industrial inputs: copper pricing and project milestones; rare-earth processing and magnet capacity; graphite and battery-material controls; potash and phosphate pressure; packaging-input cost pressure; equipment supplier lead times.

Global risk: tariffs and trade restrictions; sanctions and payment friction; shipping insurance and routing; customs throughput; regional market-access rules; currency and financing stress.

Consumer foresight: wellness category formation; evidence-backed ingredient movement; GLP-1 behavior and food-category effects; AI shopping interfaces; retail media and private-label placement; premium-to-value trade-down.

INDICATOR INTERPRETATION

The dashboard is not a generic watchlist; each indicator needs a reason to exist. Agriculture indicators matter when they change ingredient cost, feed cost, protein mix, freight, or consumer food pressure. Mineral indicators matter when they change equipment cost, capex timing, packaging systems, refrigeration, automation, or infrastructure. Global-risk indicators matter when they reach shipping, insurance, financing, customs, tariffs, or supplier behavior. Consumer indicators matter when they point to categories, claims, channels, or behavior a company can act on.

The strongest indicators are rarely the loudest. A port-authority release can matter more than a dramatic headline if it changes flow. A company filing can matter more than a conference speech if it shows capex behavior. A retailer comment can matter more than a macro forecast if it reveals basket substitution. A regulatory table can matter more than a trend piece if it changes what companies are allowed to claim. The test for inclusion is simple: if an indicator does not change a read, a question, a sourcing plan, a pricing view, or a forecast track, it does not belong here.

Exhibit 4: Forecast Record (Opening Edition)

This is the opening edition of the forecast record, so it publishes the questions the scorecard will track rather than a set of resolved results. Probability forecasts are scored after resolution, and lower Brier is better; because this is the first 2035 flagship, none of the 2035-linked questions have resolved yet. The record does two jobs: it commits the report to accountability over time, and it separates measurable forecasts from broader foresight judgments. Not every section should be forced into a probability; some describe structural forces, some early formation, some operating mechanisms. A forecast earns its place only when the question is specific, dated, and resolvable.

FORECAST QUESTIONS

These are the questions the scorecard will track. A probability is recorded for each as it opens; this edition publishes the questions, and the resolved record below begins empty by design.

FORECAST QUESTION	PUBLICATION WINDOW	DEADLINE	RESOLUTION ARTIFACT	WHY IT MATTERS
Will food-at-home CPI remain above 2.5% year over year in the September 2026 CPI release?	2026-Q3	2026-09 CPI release	BLS CPI	Tests whether household food pressure persists into fall planning.

FORECAST QUESTION	PUBLICATION WINDOW	DEADLINE	RESOLUTION ARTIFACT	WHY IT MATTERS
Will at least three major retailers mention value, affordability, private label, selective price cuts, or trade-down in their next quarterly earnings materials?	2026-Q3	2026-Q3 earnings cycle	Filings, releases, transcripts	Tests whether consumer pressure is spreading through operator language.
Will at least five large food, beverage, retail, supplement, or consumer-health companies cite GLP-1, satiety, protein, appetite, or metabolic-health portfolio changes before 2027-06-30?	2026-H2	2027-06-30	Filings, releases, investor materials	Tests whether metabolic health has entered company planning language.
Will at least five major U.S. retailers or marketplaces publicly offer a shopping assistant or AI-guided discovery feature before 2027-06-30?	2026-H2	2027-06-30	Official product pages and announcements	Tests whether AI commerce moves beyond a few platform experiments.
Will at least five large food, retail, logistics, packaging, or CPG operators cite automation or industrial AI as material to throughput, quality, safety, fulfillment, shrink, or capex before 2027-06-30?	2026-H2	2027-06-30	Filings, earnings materials, investor decks	Tests whether automation has become operator language, not only supplier language.
Will at least three large CPG, retail, foodservice, logistics, or packaging companies cite water availability, insurance cost, climate loss, or facility resilience as material to sourcing or capex before 2027-06-30?	2026-H2	2027-06-30	Filings, earnings materials, sustainability reports	Tests whether water and climate adaptation are moving from context into capital planning.

FORECAST QUESTION	PUBLICATION WINDOW	DEADLINE	RESOLUTION ARTIFACT	WHY IT MATTERS
Will at least three major CPG-adjacent equipment, packaging, refrigeration, automation, logistics, or industrial suppliers cite export controls, tariffs, critical minerals, or component lead times as material to customer delivery or capex timing before 2027-06-30?	2026-H2	2027-06-30	Filings, releases, investor materials	Tests whether resource nationalism and mineral exposure are reaching operating equipment, not only commodity headlines.

RESOLVED RECORD

This table will populate as forecasts resolve. At first publication, none of the 2035-linked questions have resolved yet.

FORECAST	PUBLISHED PROBABILITY	DEADLINE	OUTCOME	BRIER SCORE	LESSON
No resolved 2035-linked forecasts yet.					

Closing

The advantage in the next decade goes to the company that connects a weak signal to a business consequence before the consequence is obvious — and then changes the decision while there is still room to change it. None of these ten forces will arrive labeled. They reach you as a quote that expires faster, a permit that stalls, a part that slips, a basket that quietly shifts to value. The work is to recognize the signal early, trace where it lands in your own cost stack, and act before the renewal, the shelf, or the capital committee forces the call. Food, water, minerals, policy, logistics, technology, consumer pressure, and capital are not arriving as separate stories. They are arriving as one operating system forming under the headlines — and the better map is the durable edge.

Sources

Sources fall into five types: **hard data** (trade, production, port, commodity, payment, and mineral statistics); **company language** (filings, releases, sustainability reports, investor decks, and transcripts); **policy and regulation** (notices, strategies, tariffs, export controls, and water plans); **market behavior** (retailer commentary, consumer mix, channel shifts, price architecture, and adoption); and **foresight signals** (early evidence of future categories, technologies, ingredients, or capabilities). A few entries —

notably trade-press reporting on automation deployments (Business Insider) and the iSEE/TICO partnership announcement — are used as directional signposts, not primary anchors; the report's load-bearing figures rest on government data, port-authority releases, company filings, and official disclosures. Entries follow MLA style.

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