

# “Disruption Is Now the Default. Distribution Has to Be Built Around That.”

May 14, 2026

**Q & A with Md Shahab Uddin :** With global hunger at 673 million, container traffic through Bab el-Mandeb still at half its pre-crisis level, and the WHO’s vulnerable-medicines list expanding, we spoke with the researcher and FMCG distribution owner about the five-layer framework behind a 177-citation peer-reviewed portfolio, and about what the next four years are designed to deliver. In a field that usually divides cleanly between academic researchers and operating distributors, Md Shahab Uddin sits at an unusual intersection. His five peer-reviewed papers carry 177 independent citations on Google Scholar (h-index 4, i10-index 4, April 2026) and span simulation-based forecasting, stochastic resilience modeling, AI-driven distribution planning, mixed-integer programming optimization, and predictive safety analytics. Behind the publications sits more than fifteen years of continuously licensed fast-moving-consumer-goods distribution ownership: in Malaysia, as a director of ERB Trade International Sdn. Bhd. (SSM No. 1200037-K) from August 2016, and in Bangladesh, as the owner of Messrs Solaiman Traders (Sonaimuri Municipality Trade Licence No. 000385) from August 2022 to the present, partnered with City Group, Akij Group, and ACI Limited, three of South Asia’s largest FMCG manufacturers.

We asked him to walk us through the framework, the data behind it, and what the next four years are designed to deliver. The exchange has been edited and condensed.

**Q: You frame the global supply-chain environment as a “five-crisis world.” What does that mean, and why now?**

**A:** *“The disruptions are no longer episodic. They are stacked.” Hunger is rising in parts of the world that had been making progress. Maritime trade growth has stalled. Drug supply is brittle. Industrial-safety exposure in distribution and warehousing is significant. Workforce capacity to do this kind of analysis is short. Each of these problems exists on its own. The framework is designed for the case where they exist together, which is the case we are in.*

The data backs the framing. The Food and Agriculture Organization’s State of Food Security and Nutrition in the World 2025, produced jointly with IFAD, UNICEF, the World Food Programme, and the World Health Organization, puts 673 million people in hunger globally in 2024 — 90 million more than in 2020, with 2.3 billion experiencing moderate or severe food insecurity and 2.6 billion unable to afford a healthy diet. The IMF reported in April 2026 that container transits through the Bab el-Mandeb strait remain at roughly half their pre-attack level. The U.S. Pharmacopeia’s 2025 Vulnerable Medicine List flagged 100 clinically important medicines as structurally exposed to disruption. UNCTAD has noted that global maritime trade growth has stalled.

**Q: Your most-cited paper is your 2024 work with M.T. Islam on simulation-based forecasting. Why is that layer first?**

**A:** *“Because demand uncertainty is upstream of everything else.” If you cannot model what demand will do under shock, your safety stock is guesswork, your inventory turns are guesswork, and your resilience response is reactive instead of designed in.*

The paper “Simulation-Based Forecasting and Inventory Control Models for Consumer-Goods Networks” (RAS&T 3(04), 165–197) pairs Monte Carlo simulation with time-series forecasting and carries 73 independent citations. Uddin describes the methodology as geography-agnostic.

*“It is the same problem in Dhaka and in Rotterdam. The data series change. The mathematics do not.”*

**Q: Your 2023 paper on resilience modeling has 58 citations. How does it respond to events like the Red Sea crisis?**

**A:** *“Layer 2 is not designed to predict the disruption. The disruption is exogenous.” The model is designed to redesign the inventory and routing posture so that the disruption costs less when it arrives. That is the difference between resilience that is built in and resilience that is hedged for with longer lead times and bigger safety stocks.*

He points to the data: the Bab el-Mandeb strait historically carries more than 30 percent of global container trade, per J.P. Morgan Research; transits have been roughly halved since attacks began in late 2023 and remain depressed; Asia-to-Europe spot freight rates surged nearly five-fold in early 2024; the Cape of Good Hope reroute has added 10 to 14 days to typical Asia-Europe journeys.

*“Just-in-time inventory was the cheapest answer to a world that did not shock. We are not in that world anymore.”* The strategic plan extends this layer into a publicly released resilience-modeling toolkit scheduled for 2028.

**Q: Food access is the largest problem your framework engages — 2.3 billion people food-insecure globally in 2024. How does a distribution model touch a problem that big?**

**A:** *“By doing what distribution actually does.” A distribution plan is, fundamentally, a set of decisions about where to send what, how often, and in what quantity. The food-access problem, on the operational side, is a distribution-planning problem. If you map population-level access data against your routing capacity, you can prioritize the underserved areas. We do not solve global hunger with one toolkit. But we improve the routing logic that runs through it.*

Uddin’s 2025 paper, “AI-Driven Distribution Planning for Essential Goods in Underserved Communities” (ASRC Procedia 1(01), 1700–1739, 22 independent citations), is the Layer 3 paper. He notes a specific SOFI 2025 finding: 32.0 percent of the world’s rural population was food-insecure in 2024, against 23.9 percent of the urban population, and the rural figure did not improve from 2022.

*“That gap is the operational target.”* The plan calls for a publicly released food-access toolkit in 2027 and an initial pilot deployment in 2028 with a partner administering a food-systems infrastructure programme.

**Q: How do Layer 4, quantitative optimization, and Layer 5, predictive safety, fit into the framework?**

**A:** *“Layer 4 is the engine.” The data layers and the resilience-modeling layer produce information; Layer 4 turns that information into actual scheduling, routing, and inventory-positioning decisions on the warehouse floor. That is what mixed-integer programming and AI heuristics are for.*

That layer is documented in his 2026 paper, “AI-Based Quantitative Optimization Models for FMCG Supply Chain Efficiency” (AJSRI 5(01), 66–108). On Layer 5, the predictive safety layer:

*“Industrial safety in distribution and warehousing is not a side issue. The International Labour Organization estimates roughly 2.78 million occupational fatalities globally each year, with transport, storage, and warehousing among the higher-risk sectors. The model is designed to identify near-miss signatures and risk-elevation patterns before they translate into incidents.”* Layer 5 is grounded in his 2022 qualitative paper with J. Shekh (RAS&T 1(04), 250–282, 24 independent citations in the AI-driven safety-analytics literature), and the strategic plan schedules the quantitative predictive-safety framework for release in 2028.

**Q: You bring something most academic researchers don’t, a continuously operating distribution business across two countries. How does that change the modeling?**

**A:** *“It changes what the model is for.” The forecasting equations in my 2024 paper are not abstractions. They are the formalization of a demand-uncertainty problem my distributorship faces with every product launch from our FMCG partners. The resilience model in my 2023 paper is not a thought experiment; it is a structured response to the demand-shock environment mid-market distributors actually had to weather between 2020 and 2023, and continue to weather now.*

The operating record is documented in two jurisdictions. In Malaysia, the Suruhanjaya Syarikat Malaysia (SSM) Certificate of Incorporation records ERB Trade International Sdn. Bhd. as incorporated on August 29, 2016, under registration No. 1200037-K; the DBKL Licence (No. DBKL.JPPP/PR01/0367/04/2018) covers warehouse and office operations at 35B, Lorong Meranti 3, Kuala Lumpur, with documented validity through April 3, 2019; and the certified Directors’ Resolution authorising the company’s corporate current account at RHB Bank Berhad (Puchong Branch) records Mr. Uddin as a director alongside Nur Hidayah binti Mohd Sharif, Cahn Mia, and Elias Miah. In Bangladesh, the Sonaimuri Municipality Trade/Profession Licence (No. 000385, License ID 02-003-000385) was first issued on August 1, 2022 and has been continuously renewed in every fiscal year since — most recently on July 28, 2024, with validity through June 30, 2025 — covering Messrs Solaiman Traders’ distribution of food products and beverages from College Road, Sonaimuri Bazar, Noakhali.

On the linkage between the two halves of the record: *“The license dates are the timeline of the operating record the models calibrate against. The publication informs the operation; the operation calibrates the publication. Each piece feeds the other.”*

**Q: What does the framework target by 2030?**

**A:** *“The operational version of work I have only delivered as research so far.” Two toolkits, multiple deployments, more publication, and a continuously running distribution and analytical-consulting operation that takes the methods to the places that need them.*

The strategic plan sets concrete December 2030 targets: cumulative independent citations above 250 (up from 177); eight to nine peer-reviewed publications (up from five); two publicly released analytical toolkits — food-access (Layer 3, scheduled for 2027) and mid-market resilience (Layer 2, scheduled for 2028); at least one partner deployment under a food-systems infrastructure programme; at least two recurring distribution and analytical-consulting engagements; and the predictive-safety-analytics framework released by 2028 (Layer 5).

**Q: One last question. If there is a single principle behind all five layers, what is it?**

**A:** *“Build for the disruption you cannot predict.” The Red Sea was not predictable. The Panama Canal drought was not predictable. The pandemic was not predictable. The next one will not be predictable either. The methodology I am committing to between now and 2030 is one that assumes shocks instead of assuming stability — and that gives distribution networks a structured way to respond when the shocks come. That is the principle. The five layers are the application.*

*Brief Bio*

*Md Shahab Uddin, B.Sc. (Computer Science, North South University, 2007), is the author of five peer-reviewed papers in consumer-goods distribution and supply-chain analytics with 177 independent citations on Google Scholar (h-index 4, i10-index 4, April 2026). He is a director of ERB Trade International Sdn. Bhd. (Malaysia, 2016–) and the owner of Messrs Solaiman Traders (Bangladesh, 2022–).*