

Real-Time Food Safety Assurance

365 Days of Trust — From Periodic Compliance to Continuous Learning

Cornelis van Elst
Vikas Chaturvedi

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Contents

Preface — India Edition	9
About the Author — Ir. Cornelis van Elst	11
About the Co-Author — Dr. Vikas Chaturvedi	13
Executive Summary	15
Who This Book Is For	19
Overview of the Book	21

PART I

HOW CERTIFICATION BECAME THE CEILING

1. Chasing the Highest Certificate Keeps Companies in Phase 1	29
2. Certification Keeps Companies Stuck in Phase 1 (Because the System Does)	33
3. The Big TIC Phase-1 Trap	37
4. Why Passing Audits Does Not Mean an Organization Is in Control	40
5. Phase 1 Is Necessary — Remaining There Is the Risk	43

PART II

FOOD SAFETY AS A LEARNING SYSTEM

6. Food Safety as a Knowledge-Intensive Function	49
7. Food Safety as a Learning Organization	52
8. Managing the Five Food Safety Knowledge Domains	55
9. Why Knowledge — Not Documentation — Determines Maturity	58
10. From Individual Expertise to Organizational Intelligence	60
11. The Question Every Leadership Team Should Ask	62

PART III

BEYOND PDCA: SENSE & RESPOND

12. PDCA Was Designed for a Slower World	67
13. From PDCA to Sense & Respond	70
14. Why PDCA Costs Become Distorted in the Big TIC Model	73
15. Real-Time Assurance Restores Balance	76

PART IV

THE COLLAPSE OF DEPENDENCY MODELS

16. Why the Traditional Consultant Model in Food Safety Is Breaking Down	81
17. Stop Paying €1,300 a Day for Dependency	84
18. Good Auditors in a System That Constrains Learning	87
19. The New Audit Reality That Remains Largely Unspoken	90
20. Real-Time Assurance Is Not Anti-Audit	93

PART V

INFRASTRUCTURE, SOVEREIGNTY, AND G2B MODELS

21. From Paper Compliance to Live Assurance	99
22. Real-Time Food Safety Assurance Is No Longer a Vision	103
23. Who Owns the Knowledge Domains Owns the Infrastructure	106
24. Sovereign Real-Time Food Safety Is Ready for G2B Programs	109
25. From €60k to €4k — Why G2B Changes Everything	112
26. Why Emerging Economies Should Skip the Audit Era	115

PART VI

AI AND SYSTEM INTELLIGENCE

27. AI Will Not Fix Food Safety Without a Knowledge Backbone	121
28. How AI Supervision Becomes Possible	124

PART VII
POWER, ECONOMICS, AND THE WAY FORWARD

29. Why Private Equity Is Attracted to Phase-1 Models	129
30. Why Food Safety Needs Infrastructure — Not Roll-Ups	132
31. We Do Not Need More Certificates — We Need System Intelligence	135

PART VIII - INDIA
BEYOND SUPPLY: REPOSITIONING INDIA IN EUROPE'S FOOD ECONOMY

32. India in a Recalibrating Global Food System	141
33. Decoding the Export Dissonance	143
34. The Three Structural Shifts	145
35. MSMEs: Built Small, Competing Global	147
Closing Note — An Epilogue	149
Appendix 1	151
Appendix 2	155
Appendix 3	157
Appendix 4	162
Appendix 5	170
Appendix 6	174
Appendix 7	178
Appendix 8	182

Preface — India Edition

Beyond Supply: Repositioning India in Europe's Food Economy

Discussions of food safety are typically centered on rules, standards, audits, and certificates. These elements define how assurance is organized and communicated. They are important, but also incomplete.

In the context of India's agri-food system—with its scale, diversity, and strong MSME base—this becomes especially visible. Many assurance models function as designed, yet struggle to keep pace with increasing complexity, global trade demands, and rising expectations from international markets.

The result is not failure, but strain. Producers, exporters, auditors, and regulators all work harder within systems that still prioritize periodic proof over continuous understanding.

This book does not argue against standards or certification. It assumes professionalism and good intent across the system. Its purpose is different.

The chapters that follow explore food safety as a learning system—one that builds intelligence, adapts to complexity, and enables continuous assurance across fragmented supply networks.

They ask:

- How can India move from volume to value in European markets?
- How can MSMEs become drivers of precision and differentiation?
- What does assurance look like when it operates continuously, not episodically?

The perspective is grounded in practice and real-world system behavior. The intention is not to replace existing models, but to complete them.

Compliance provides structure.

Learning provides adaptability.

Assurance becomes credible when both are designed together.

For India, this is a strategic opportunity.

The transformation ahead is not about doing more.

It is about learning better.

About the Author — Ir. Cornelis van Elst

Ir. **Cornelis van Elst** is a Dutch expert in food safety and assurance systems, known for transforming food safety from audit-driven compliance to learning-based, real-time assurance.

With an engineering background and more than two decades of experience in the food industry, he has worked at the intersection of **food safety management, regulatory interpretation, digital infrastructure, and organizational learning**. His work spans primary production, food manufacturing, retail supply chains, and public-private governance models.

Cornelis is the founder of **QAssurance**, a Dutch RegTech initiative focused on redesigning food safety systems around structured knowledge, continuous learning, and real-time insight. Through this work, he has been closely involved in the development and implementation of **digital food safety infrastructure** across multiple continents, including both mature markets and emerging economies.

Rather than approaching food safety as a certification challenge, his work focuses on **system behavior**: how organizations learn, how knowledge is retained, and how assurance remains credible in environments characterized by rapid change and increasing complexity. This perspective has led to collaborations with food companies, auditors, regulators, and government institutions seeking alternatives to purely audit-centric oversight models.

Cornelis is a frequent speaker on topics such as real-time food safety assurance, learning organizations, RegTech infrastructure, and the future of audits and certification. His work emphasizes that food safety is not primarily a documentation or technology problem, but a system design problem—one that requires rethinking how intelligence is organized and governed.

This book reflects his practical experience and system-level thinking. It does not propose a new standard or methodology. Still, it offers a coherent framework for understanding why existing models struggle—and how food safety can evolve from periodic proof to continuous assurance grounded in learning.

About the Co-Author — Dr. Vikas Chaturvedi

Dr. **Vikas Chaturvedi** is an Indian business strategist, international trade expert, and global entrepreneur, widely recognized for helping companies scale across borders and build sustainable growth models. As a Partner of QAssurance, he brings extensive commercial insight, market access expertise, and strategic leadership to support the platform's international expansion.

Over the course of his career, Dr. Chaturvedi has supported more than a thousand MSME companies (MSMEs: Micro, Small and mid-sized enterprises that compete globally through specialization, agility, and compliance rather than scale.) globally across the food, manufacturing, engineering, textiles, pharma and chemical sectors, helping them strengthen operations, enter new markets, improve competitiveness, and navigate international business opportunities. His practical understanding of supply chains, regulatory environments, and global trade ecosystems has made him a trusted advisor to businesses seeking long-term growth.

He is the CEO of Valuecent Group, where he has worked closely with enterprises to accelerate expansion, strengthen business structures, and create strategic partnerships across India, Europe, and other international markets. Through this work, he has built a strong reputation for connecting entrepreneurs, institutions, and investors with opportunities that create measurable impact and sustainable value.

Dr. Chaturvedi is Founder and Chairman of the India Business House (IBH). Through IBH, he is actively promoting bilateral trade, investment opportunities, business networking, and cross-border collaboration, helping strengthen commercial ties between India and global markets.

He is also a Founder and Chairman of TiE Amsterdam, India Dutch Financial Corridor, Institute of Chartered Accountants of India (Netherlands Chapter), ASSOCHAM Europe and founding Director of Europe India Chamber of Commerce, The Netherlands. Vikas is also a Founder Chairman of India Symposium, an event organised in Europe that showcases and facilitates business opportunities in India. Vikas has been instrumental in establishing ICAI presence in over 10 European countries. Vikas represents Indian Chamber of International Business in The Netherlands.

Vikas holds a Ph.d. in International Tax Law. He is an alumnus of London Business School, University of Leiden, University of Mumbai, Institute of Chartered Accountants of India and Dr B R Ambedkar University.

As a Partner of QAssurance, Dr. Chaturvedi plays a central role in translating the platform's vision into commercial reality by building strategic alliances, enabling market adoption, and positioning it as a trusted solution for modern food assurance systems. His expertise in business development, stakeholder engagement, and international ecosystem building complements the platform's technical and operational foundations. Known for his visionary thinking his contribution ensures that QAssurance is not only technologically strong, but also commercially scalable, internationally relevant, and positioned to create lasting value across industries.

Executive Summary

Food safety systems worldwide appear robust. Standards are established, certification schemes are widely adopted, audits are routinely performed, and compliance is carefully documented. On paper, control looks strong.

In practice, many of these systems struggle to cope with the realities they face today.

This book starts from a simple observation: **food safety has become more complex, faster-moving, and more interconnected than the assurance models designed to govern it.** While risk dynamics have accelerated, much of the assurance architecture remains rooted in periodic verification, retrospective proof, and external validation. The result is not failure, but structural strain.

Organizations work harder to maintain compliance without necessarily gaining a deeper understanding. Auditors operate under increasing pressure within narrow mandates.

Consultants fill recurring gaps without transferring durable capability. Regulators face growing oversight challenges with limited real-time visibility.

This book argues that the challenges of food safety stem not from insufficient standards or effort, but from a **learning deficit created by system design.**

From Compliance to Learning to Assurance

The book introduces a three-phase perspective on food safety maturity:

- **Phase 1: Compliance**—establishing procedures, maintaining records, and demonstrating conformity through audits
- **Phase 2: Learning**—building systematic understanding of how systems behave, how risks evolve, and how knowledge flows across domains
- **Phase 3: Assurance**—achieving sustained confidence through continuous insight, integrated intelligence, and the capacity to detect and respond to emerging conditions

Certification systems were designed to establish Phase-1 compliance. They do this effectively and remain necessary. However, when organizations treat certification as the endpoint of maturity, learning capacity stagnates, and assurance becomes symbolic rather than operational.

The core issue is not competence or intent. It is that **systems optimized for proof suppress the development of organizational intelligence.**

Food Safety as a Knowledge and Learning System

The book reframes food safety as one of the most knowledge-intensive functions in any organization. Every day, food safety professionals must interpret changing legislation, evolving standards, supplier behavior, customer expectations, and internal process dynamics.

Traditional compliance models treat this work as documentation and administration. In reality, it is interpretive knowledge work in an uncertain environment.

This book identifies five core food safety knowledge domains that organizations must integrate: legislation (regulatory requirements), standards (certification and industry norms), the organization itself (internal processes and capabilities), suppliers (supply chain risk and performance), and customers/consumers (market requirements and expectations). It demonstrates how fragmentation across these domains undermines both understanding and resilience.

True maturity emerges not from more documents, but from **how knowledge is structured, shared, validated, and retained.**

Why Audits and PDCA Are No Longer Sufficient Alone

Plan–Do–Check–Act (PDCA) and audit-based assurance were designed for slower, more stable systems. In modern food systems, feedback delays create risk.

The book introduces **Sense & Respond** as a primary operating logic that precedes PDCA. This approach emphasizes continuous monitoring of system behavior across all five domains—legislation, standards, internal operations, suppliers, and customers—enabling early, proportional responses and explicit learning.

PDCA remains valuable — but as a secondary cycle that consolidates learning, not as the primary mechanism for situational awareness.

Economic Distortion and Dependency

A significant portion of the book examines how current food safety economics reinforce outdated models.

Disproportionate spending on external checking, audits, and preparation cycles crowds out investment in sensing, interpretation, and learning. Consultant dependency provides reassurance without building internal intelligence. Phase-1 models persist not because they are optimal, but because they align well with scalable, predictable revenue structures.

This is not a critique of professionals or institutions. It is a critique of **incentive alignment**.

Real-Time Assurance and Infrastructure Thinking

The book argues that **real-time food safety assurance is no longer a vision**. The necessary technological and organizational components already exist. What is missing is a structural redesign.

Real-time assurance shifts assurance from episodic proof to continuous understanding. It reduces cost by eliminating redundancy, lowers stress by smoothing effort, and improves resilience by enabling early action.

Crucially, the book reframes food safety power as residing not in certificates, but in **knowledge infrastructure**. Whoever owns the interpretation, connection, and governance of knowledge domains owns the system.

This insight enables new models at scale.

Sovereign and G2B Models

The book explores how government-to-business (G2B) and sovereign assurance models can deliver shared infrastructure, continuous oversight, and cost justice—particularly in emerging economies where audit-centric models are economically and structurally unsustainable.

Rather than replicating the historical audit trajectory of mature markets, countries can leapfrog directly to learning-based, real-time systems that strengthen local capacity while meeting global expectations.