

AI and Blockchain-Powered New Paradigm for the Food Industry

Integrated SaaS for Food Traceability, Inventory, and Loss Management

3 Major Threats to the Food Industry

1. Food Safety Incidents

Risks for companies and consumers



Contamination can occur at any stage.
→ sales suspension, recalls, export bans

2. Stricter Global Regulations

Food safety laws, tariffs, and export barriers



FSMA (2022), HACCP/TACCP/VACCP
expansion, EU DPP (2027)

3. Food Waste Crisis

Massive loss and environmental cost



30–40% of food wasted during
manufacturing; one-third globally
discarded across supply chains

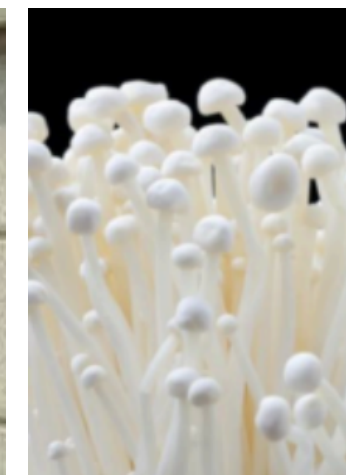
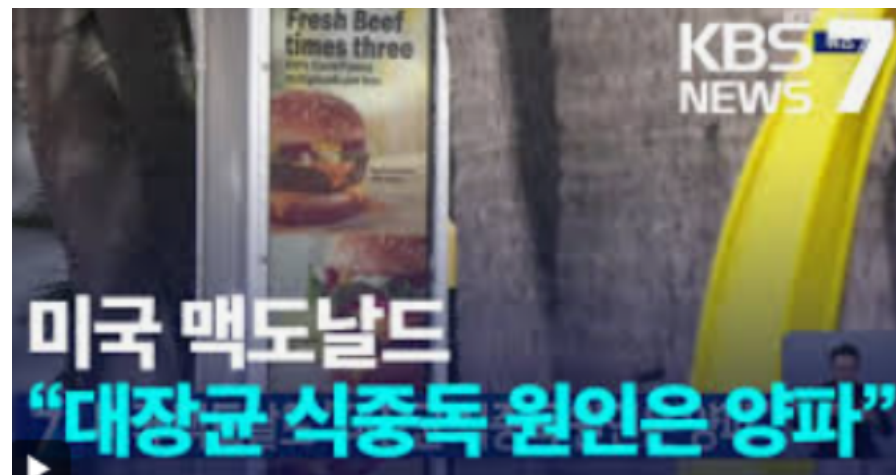
3 Major Crises Threatening the Food Industry

1. Food Safety Incidents & Corporate Risks

Safe food is a fundamental right of every consumer.

Frequent food safety incidents pose serious threats to consumers.

Recalls, disposals, export bans are **significant risks** for businesses.



Food Safety News
FDA expands enoki mushrooms import alert from South Korea, adds China
FSN

Food safety incidents threaten both consumer health and corporate survival.

3 Major Crises in the Food Industry

2. Strengthened Food Regulations & Global Trade Barriers

K-Food is gaining global momentum, driven by K-Drama and K-Content.
For future export, sales, and distribution, food traceability is essential.



K-Food exports are at an all-time high, but global food safety regulations and trade barriers are being significantly reinforced.

U.S. FDA: Mandatory
full-process traceability by 2028
(FSMA 204)

Halal Certification:
Required from October 2026

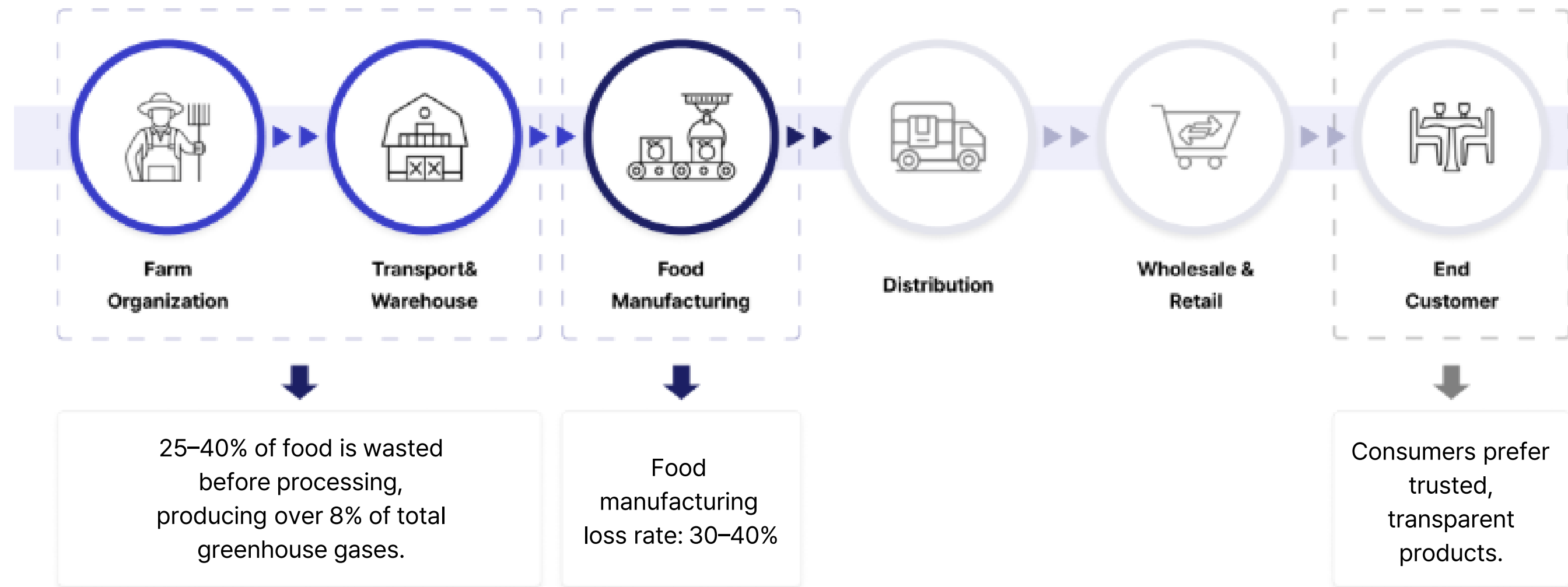
Global Buyers: Increasing demand
for supply chain transparency
(Risk of market exclusion)

Compliance with global regulations such as FDA FSMA 204
is directly linked to market survival.

3 Major Crises in the Food Industry

3. Food Waste Problems and CO2 Emissions

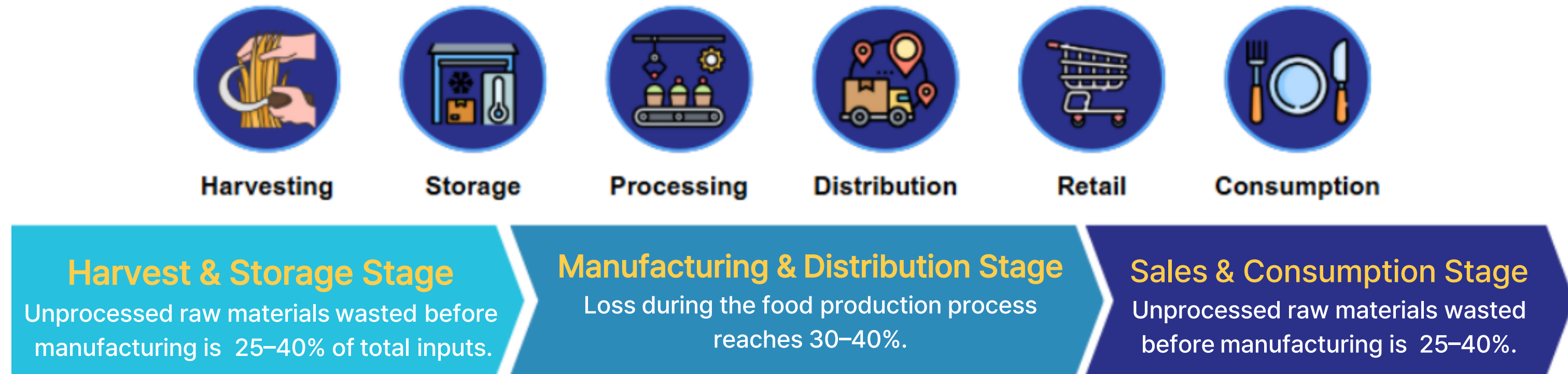
Siloed and inefficient supply chains
lead to **lower profitability** and **increased food waste**.



Globally, 8–10% of carbon emissions come from food waste.

3 Major Crises in the Food Industry

3. Food Waste is Expensive



**1/3 of all food produced globally is discarded,
causing annual loss of 940 billion USD.**

**In Korea, 14% of agricultural and food products are wasted,
->losses of KRW 20 trillion/year.**

Food4Chain: Blockchain + AI Integrated System

Integrated SaaS for Food Traceability & Inventory Loss

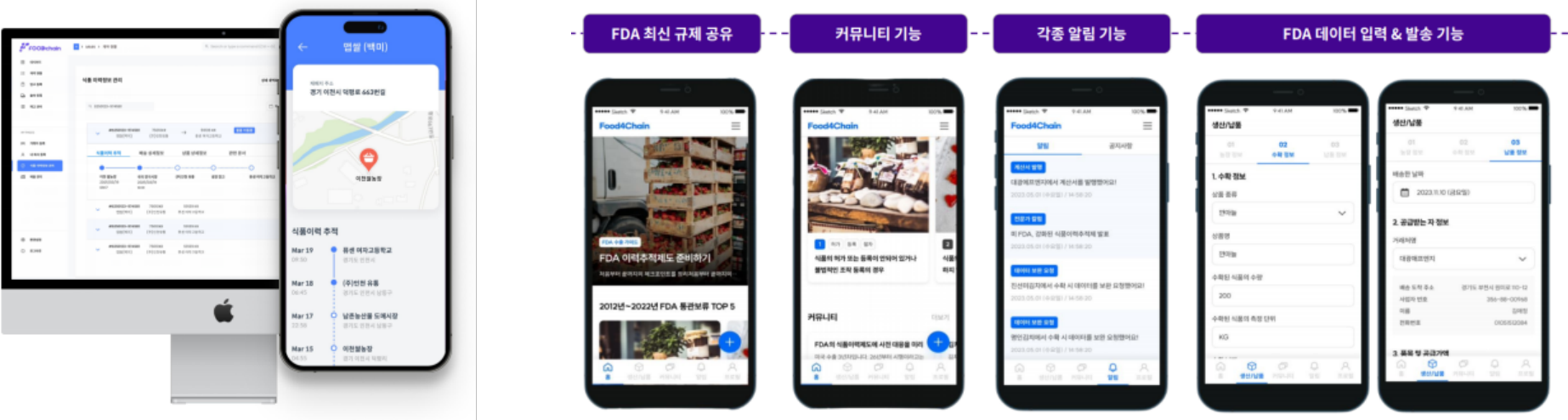
Blockchain-based Traceability from Production to Distribution

AI Demand Forecasting & Auto Reordering

Safety (Blockchain) + Efficiency (AI)
= Maximum Synergy

Aiming to Solve Core Industry Crises through Digital Innovation

Blockchain Food Traceability Service



AI-based Inventory & Loss Management Service



FutureSense combines Blockchain & AI to ensure both safety and efficiency.

Stricter Food Traceability Regulations (FDA FSMA 204)

U.S. FDA Traceability Data Requirements

THE WALL STREET JOURNAL.

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FDA Official Says New Rule Could Boost ~~Blockchain Based Food Tracking~~

The proposed rule could spur adoption of a farm-to-fork food traceability program used by companies including Walmart and Nestlé

By Suman Bhattacharyya

Feb. 1, 2022 5:30 am ET

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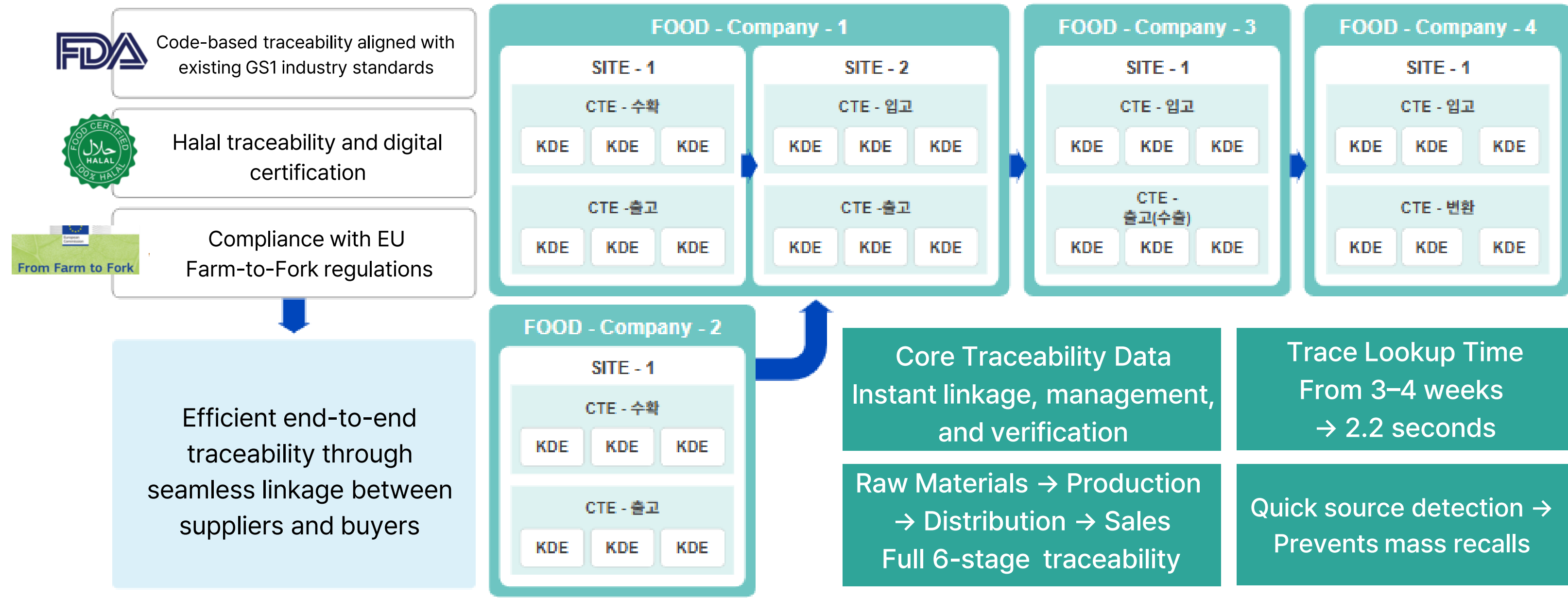
The U.S. FDA promotes blockchain-based traceability to enhance food safety and supply chain transparency.

CTE (Critical Tracking Event)	At Harvest	Pre-Cooling before initial packing	Initial Packing	Shipping	Receiving	Processing
KDE (Key Data Elements)	- Description of the Next Recipient's Location - Product Name and Type - Quantity and Measurement Unit - Description of the Location of the Farm Where the Food Was Harvested (Harvested Field/Growing Area Name) - Description of the location harvested (Name of field or farm)(Name of container or farming unit for aquaculture product) - Harvest Date	- Description of the Immediate Subsequent Recipient's Location - Product Name and Type (if applicable) - Quantity and Measurement Unit - Description of the Refrigeration Storage Location - Refrigeration Date - Location of the Farm Where the Food Was Harvested	- Product Name and Type - Assigned Traceability Lot Code - Description of the Packaged Food Product - Quantity and Measurement Unit of the Packaged Food - Description of the Initial Food Packaging Location - Initial Packaging Date - Quantity and Measurement Unit of the Received Food - All Data Provided at Previous steps	- Food Traceability Lot Code - Quantity and Measurement Unit of the Food Product - Description of the Immediate Subsequent Recipient's Location - Description of the Delivery Destination - Food Shipment Date - Lot Code Assignment - Location	- Food Traceability Lot Code - Quantity and Measurement Unit of the Food Product - Description of the Previous Supplier's Location - Description of the Food Delivery Location - Delivery Date - Lot Code Assignment - Location	*When Food Included in FTL is Used as an Ingredient - Food Traceability Lot Code - Product Description - Quantity and Measurement Unit Used for the Food *When a New Food Product is Produced Through Processing - New Traceability Lot Code for the Processed Food - Description of the Location Where the Food Was Transformed - Date Processing Was Completed - Product Description - Quantity and Measurement Unit of the Food

Blockchain securely records data across the supply chain, ensuring trust and enabling rapid traceability in contamination events.

Blockchain Traceability System

Ensures complete and accurate traceability based on U.S. FDA standards.



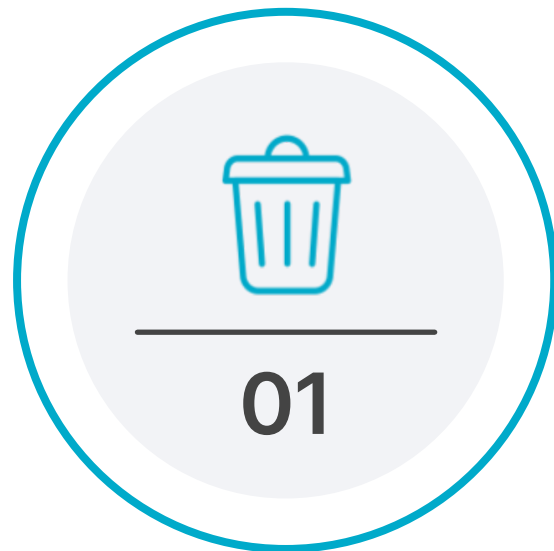
Respond to global issues in **just 2.2 seconds** with blockchain-based regulatory compliance.

AI-Based Inventory & Loss Management

AI optimization: Analyzes loss causes → reduces loss by ~30%

Demand forecasting + auto ordering
= inventory optimization

Reduces cost & waste
→ maximizes operational efficiency



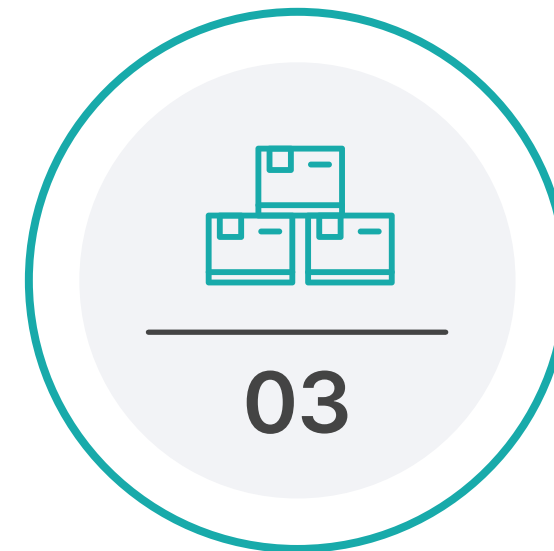
Loss Management

Collects raw material, worker, and production data for real-time loss and cost tracking



Document Management

Automates legal compliance documents (ingredient logs, production records, transactions)



Inventory Management

Manages inventory and costs in real time by LOT number and expiration date

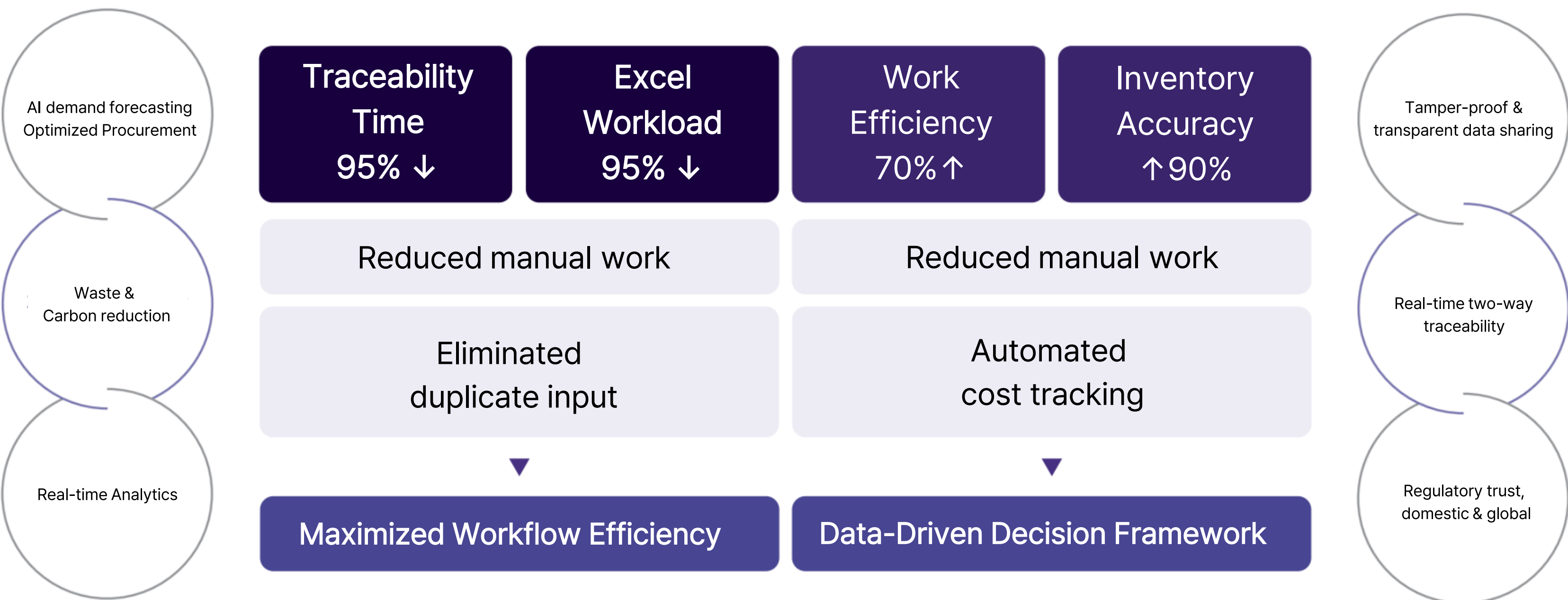


Cost Management

Data-driven cost control to reduce waste and enhance price competitiveness

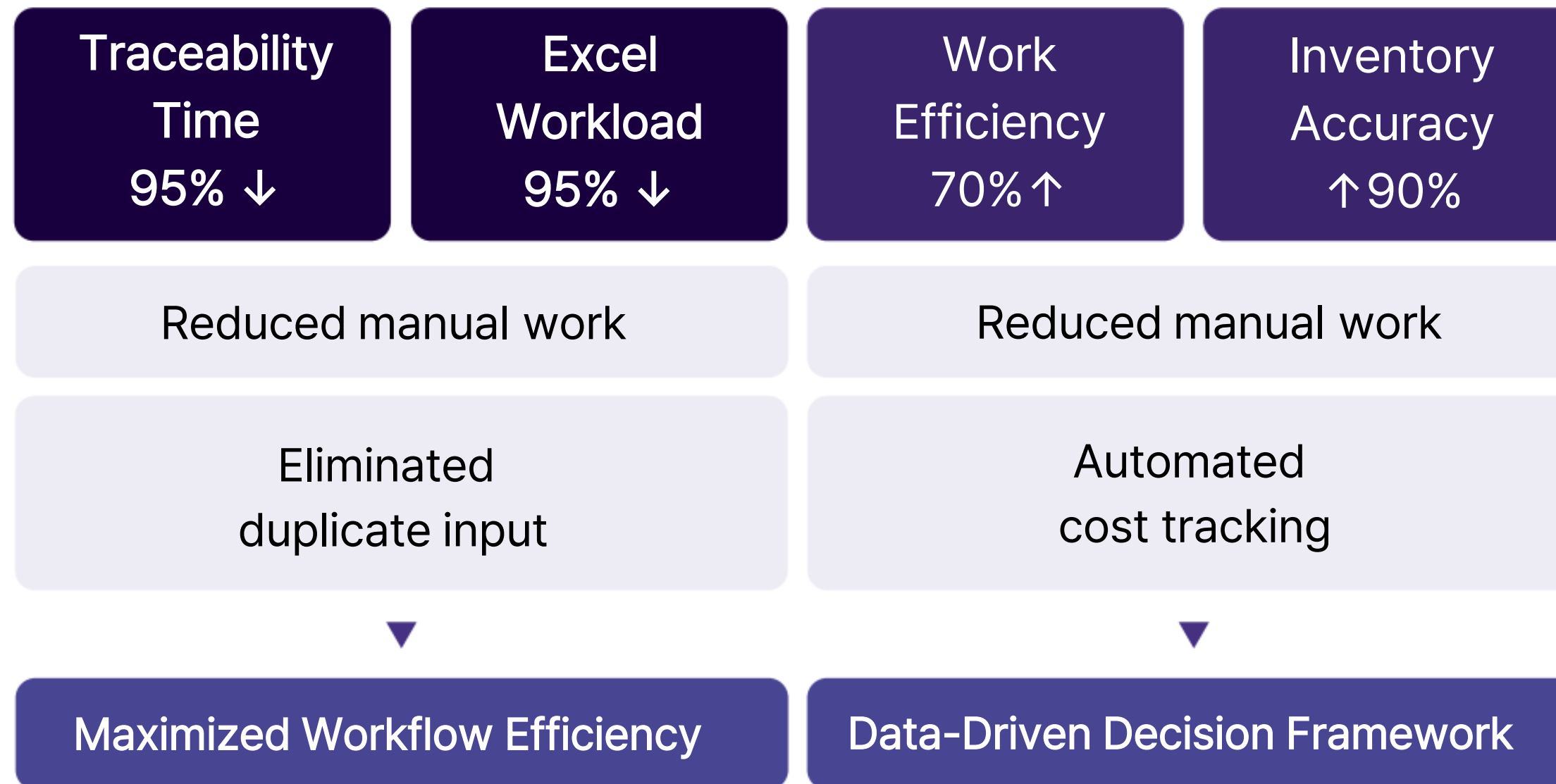
Reduces cost and waste through automated ordering, tracking, and inventory optimization.

Proven Results & Expected Impact



FutureSense reduces food waste by 30% while maximizing efficiency and profitability.

Proven Results & Expected Impact

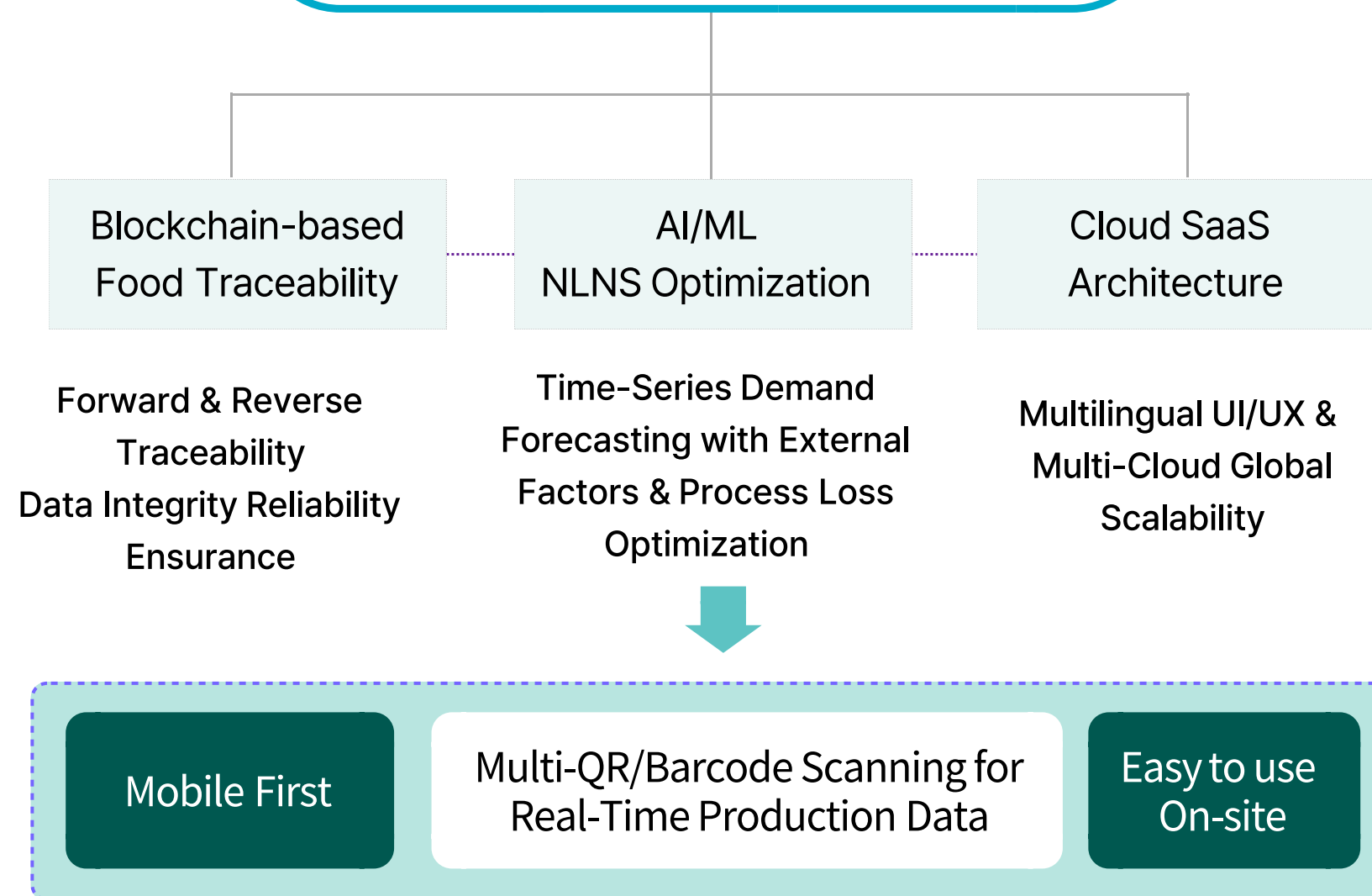


FutureSense reduces food waste by 30% while maximizing efficiency and profitability.

Core Technology

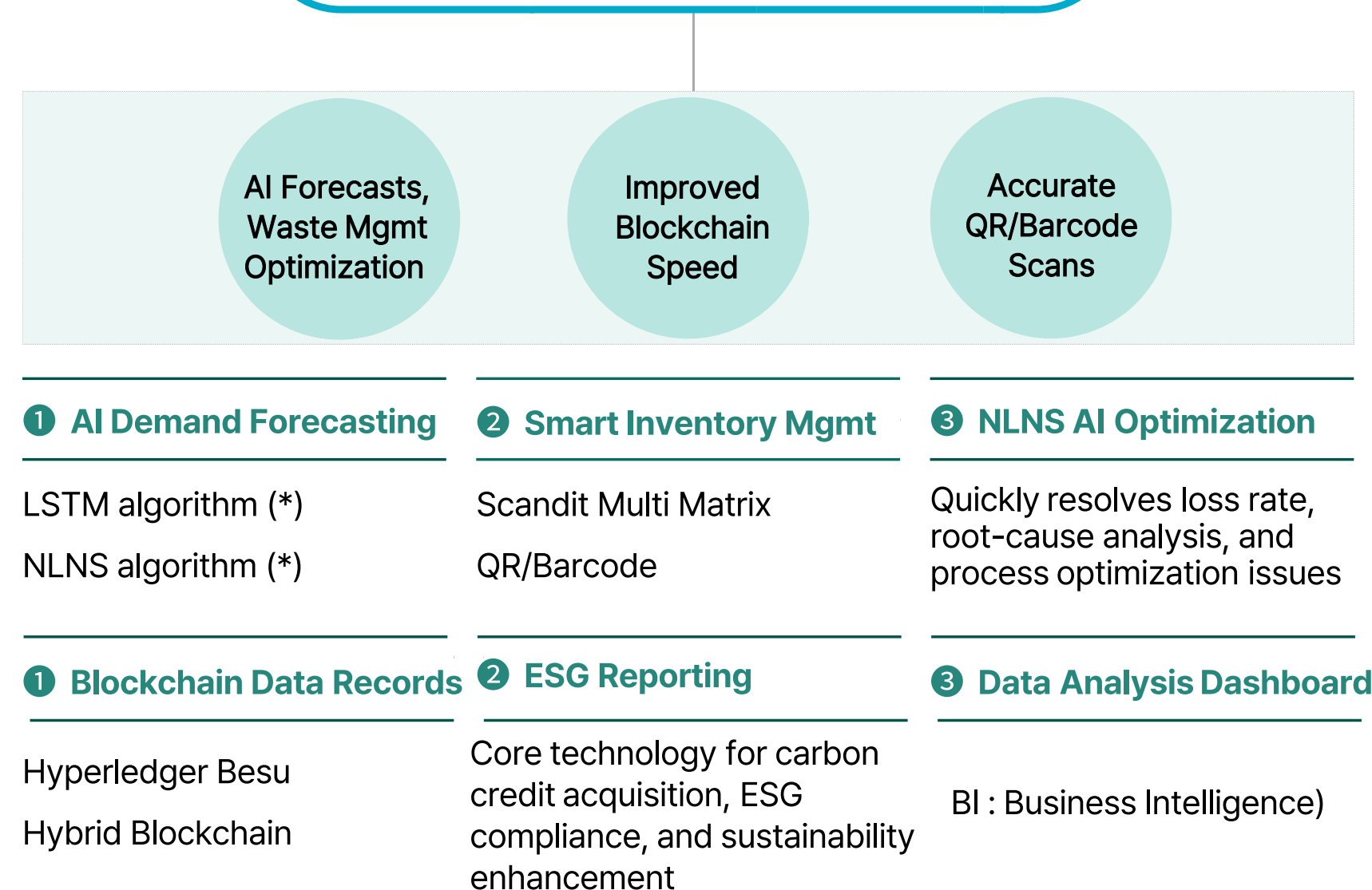
01

Core System



02

Technology



Secured 6 patent filings and 3 TTA performance certifications for core AI and blockchain technologies.

Domestic Achievements (Korea)

Completed multiple industry-academia-government projects with national food agencies, ICT ministries, the Environment Ministry, and FoodTech associations



Korea Agency of Agri-Food Technology Promotion

Korea Agency of Agri-Food Technology Promotion
(2023) Acceleration Program
(2025) Agri-Food Venture Project
(2025) Fates Accelerating



Korea Food Industry Cluster Promotion Agency

Promoting K-Food Private Sector Projects



World Institute of Kimchi

Blockchain/DID-Based Kimchi Traceability System



Korea Rural Economic Institute & Garlic Association

Digital traceability and supply chain management from farms to wholesale markets



Korea SME FoodTech Association

Joint AI & Blockchain R&D and technology dissemination



Korea Environmental Industry & Technology Institute

AI-Based Food Waste Reduction & Carbon Neutral Projects

Trusted partner creating leading ESG cases with MAFF, MoE, and related institutions

Domestic Achievements (Korea)

Strategic deployment through partnerships with local governments and food associations

600 potential clients secured

1,500 food manufacturers DB thru
Associations, city partnerships

38,000 total numbers, 93% are
SMEs

Partnership with cities
Rapid adoption among SMEs



- MOU signed with Incheon Techno Park and Food Association (2,100 manufacturers in Incheon)
- Strategic partner with Seongnam city

B2G projects
standardization



KFHTA
중소기업푸드테크협회
구. 중소기업식품발전협회

Global Expansion (Use Cases)

Cambodia MAFF, Indonesia, UN FAO, Dubai, US PoC Projects, US Market Expansion



Cambodia MAFF
ODA Projects



UN Food & Agriculture
Organization
194 Partner Countries, 85% LDCs



US Market Expansion
(2025 CES)



Establishing
US Legal Entity



Malaysia Durian
Traceability Project



SAP Gold Partnership
(Shanghai)

US GTM Partnership with
Hitachi Solutions America, Ltd.



UNFAO
Thailand
Forum
Presentation

Dubai Gitex 2025
6 MOU

**Global projects and partnerships with food manufacturers
and distributors across Asia, the Americas, and Europe**

Global Use Case – Halal Certifications

UAE-Southeast Asia Markets will
Mandate Halal Certifications
(2026.10.17~)

Indonesia-mandated
Halal Certifications
Exports Banned without Traceability

Provenance and
Production/Distribution
Must be transparent

Halal Market reaching USD 300B - a key opportunity for exporters

1

Data-based Competitive Advantage

- Blockchain records traceability from raw materials to distribution
- Auto-generated documentations to submit to Halal Certification institutions

Faster Response Times & Credibility

2

- QR /Mobile scans for faster response times
- Tamper-proof data → guaranteed credibility

**Halal-certified solution bridging Korea with
Southeast Asian and Middle Eastern markets.**

Market Size



TAM Total Market

- Global food traceability & digital transformation market
- Required global trade traceability and origin verification
- Expanding into cosmetics, pharma, and raw materials



SAM Attainable Market

- ~600,000 food-related companies in Korea
- Overseas manufacturers exporting to the U.S.
- Food waste management market (USD 3.6 billion)



SOM Fast Profit Market

- 38,000 K-Food manufacturers in Korea
- Export/import companies targeting the U.S.
- Focusing on top 10% in digital transformation and export growth

TAM **USD 25B**

Global Demand for Digital
Food Supply Chains

SAM **USD 5.7B**

Service Attainable Market

SOM **USD 36 Million**

First target as Domestic
customer base

Business Model

B2B SaaS subscription
+ transaction commissions

A USD 25B global market - starting with a USD 36M domestic launch.

Business Model

SaaS Subscription

System Setup Fee + Monthly SaaS bill

Per Item / Account / CTE

**Blockchain-based
Traceability**

**AI Demand Forecast
Inventory/Waste Mgmt**

API Customization

Setup Fee +
Annual Maintenance & SaaS bill

Additional Options

Traceability SaaS +

+

FDA Regulations SaaS +

+

AI Demand Forecast SaaS +

Structured Revenue Streams

**Unlimited growth by active
users and product volume
to Lock-in Customers**

Continuous tech
development & ecosystem-
based recurring revenue
driven by food data

A food industry-specific data solution beyond traditional ERPs

CEO & Key Executives



Dami An, CEO

Publications: Blockchain Generation
(2022, Maekyung Publishing)



Director of International Trade Expert Group Cooperative(ICTC)
(Former) Korea Director at Consensys
(Former) Founding Members of Krust Universe, Singapore Subsidiary of KAKAO Corporation
(Former) Faculty of Blockchain at Konkuk University Graduate School of information and Communication (2021-2022)
(Former) Chinese Blockchain VC, The Blockchainer : Head of Beijing Office
(Former) Head of B2B Sales, Royal Way Consulting, a Chinese investment consulting firm

Hyunseung Kim

Tech Director

- R&D Director of Teruten Co.
- CEO of KT Vision Inc.
- KAIST B.S. in Physics & Ind. Mgmt

Eunyoung Lee

R&D Lead

- Samsung Electronics PM
- Ehwa Women's Uni. B.S. in Computer Science

Yangrae Lim

Senior Developer

- Senior PM at Smilegate RPG
- CTO at Cyworld
- KAIST B.S. in Civil Engineering



Initial Investor:
National Tax, Customs
& Trade Advisory Center

Consortium of top domestic and international experts in food, certification, and trade — 126 specialists across 9 countries.

Provides end-to-end export support for SMEs — market research, distribution channels, FDA certification & labeling, logistics, customs, and clearance.

20 core professionals driving AI/blockchain dev. and business expansion

Vision & Mission

FutureSense will restore the right to safe food for all and turn challenges of the food industry into opportunities for growth.

Our Solution that leads ESG digital transformation for a safer, more sustainable food industry.

Food4Chain